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EXTRACT

From an Act prescribing Rules for the Government of the State Library, passed March 8th, 1861.

Section 11. The Librarian shall cause to be kept a register of all books issued and returned; and all books taken by the members of the Legislature, or its officers, shall be returned at the close of the session. If any person injure or fail to return any book taken from the Library, he shall forfeit and pay to the Librarian, for the benefit of the Library, three times the value thereof; and before the Controller shall issue his warrant in favor of any member or officer of the Legislature, or of this State, for his per diem, allowance, or salary, he shall be satisfied that such member or officer has returned all books taken out of the Library by him, and has settled all accounts for injuring such books or otherwise.

Sec. 15. Books may be taken from the Library by the members of the Legislature and its officers during the session of the same, and at any time by the Governor and the officers of the Executive Department of this State who are required to keep their offices at the seat of government, the Justices of the Supreme Court, the Attorney-General and the Trustees of the Library.

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MINING AND SCIENTIFIC PRESS.

An Illustrated Journal of Mining, Popular Science and Progressive Industry.

BY DEWEY & CO., Patent Solicitors.

SAN FRANCISCO, SATURDAY, JULY 6, 1872.

VOLUME XXV. Number 1.

Remington's Breech-Loading Rifle.

The Armory of Remington & Sons, at Ilion, New York, is one of the most extensive manufactories of the kind in the world, and the premises upon which the works are situated compriso some 23 acres. There are 25 different buildings, which cover some 3¾ acres, and which, averaging four stories in hight, have a floor space of 15 acres. These works, when in full running order, give employment to about 1,400 men. Some idea of the extent of the business done at these works may be had from the fact that there are some three miles of shafting and about 25 miles of belting in the factory, run by three engines with an aggregate of 400 horse power; water power is also available. Any one familiar with a workshop will readily see what a vast amount of machinery there must be to require so much motive power. Not very long since these works turned out in one month 1,400 rifles and 300 pistols a day. This was an exceptional case, however, as their capacity is set at 1,100 rifles and 200 pistols per day. The business of the firm has steadily and rapidly increased since its foundation, and new buildings have been added and new machinery introduced as their arms became better known and appreciated. Now the establishment is the largest one in the world devoted to the manufacture of breech-loading rifles, carbines and pistols. To give any extended description of the works would require considerable space, so we will confine ourselves to a brief sketch of the famous Remington Breech-Loading Rifle, which forms the principal article manufactured at the works.

This arm was first popularly brought out in the spring of 1866, and soon after was adopted by the Danish Government, and an order given for 20,000, which were immediately placed in the hands of the troops. Having been submitted to a series of severe trials, it has received the preference of the most recent Military and Naval Boards deciding upon arms to be adopted in Denmark, Spain, Sweden, Greece, France, Rome, Egypt, United States, (Navy and Army,) Cuba and the State of New York. More than half a million arms constructed upon this system have been supplied to troops. The arm is chiefly distinguished for its remarkable simplicity, combining, as it does, its lock for firing and its breech-loading contrivance in one compact mechanism, composed of the fewest possible parts, and each part simple in its construction and purpose.

The working parts are all securely protected in the frame, while the upper and lower extensions of the frame (to the rear), afford the strongest guards to the stock at the weakest point, the neck. The interior mechanism is not likely to get out of order—as all delicate springs and pins are avoided, and there is no occasion for those sliding surfaces which in certain other arms create liability to stick, from rust, etc. The strength of the mechanism of the Remington system to resist the recoil of a charge, is admitted to be the strongest in the world. Fig. 3 of the accompanying cut represents a sectional view of the breech-loading rifle, showing the breech

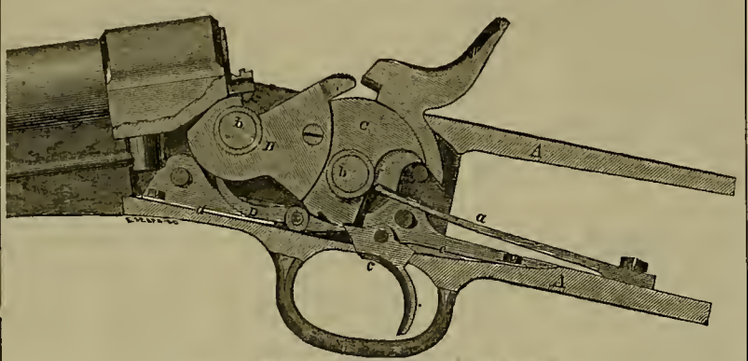

FIG. 1. BREECH OPEN TO RECEIVE CARTRIDGE.

system at the moment of discharge. It will be seen that at the moment of discharge the breech-piece is immediately supported by the front portion of the hammer, which

FIG. 2. IN POSITION TO CARRY WHEN LOADED.

forms a powerful recoil shoulder. Both pieces are made of the best solid steel, and are supported by solid steel pins, which pass through the strong iron frame from

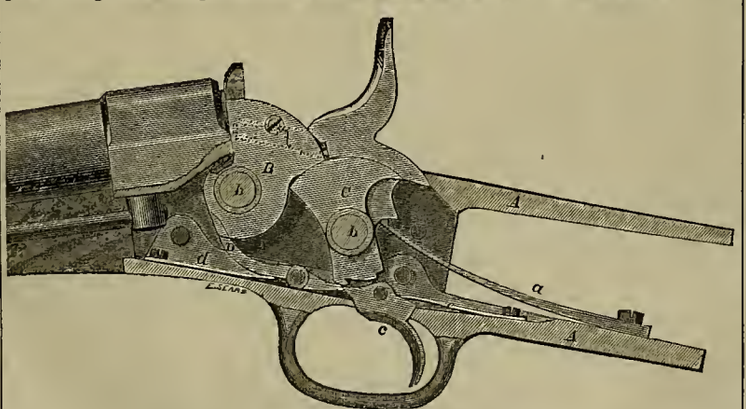

FIG. 3. BREECH AT MOMENT OF DISCHARGE.

side to side. These metal parts are so located as to equalize their capacity to resist recoil.

By the peculiar interlocking and bracing of the hammer and breech-piece, the greater the recoil, the more securely is the hammer locked. And, as the shoulder of the hammer becomes a fulcrum, the entire strain upon the axis of the breech-piece results on that part in the rear of the forward pin. The arm is easily handled, and the common soldier requires only brief instructions or training, since the motions are few, easy and natural.

Putting in the cartridge is effected by merely entering it at the mouth of the chamber and swinging forward the breech-piece to push it in (instead of using the finger for the latter purpose, as in certain other arms). When the breech-piece is thus closed the arm is ready for discharge. Fig. 1 is a sectional view of the rifle, showing the breech system when open to receive the cartridge. In the cuts *A A A* is the receiver, *B* is the breech-piece, *C* the hammer, *D* the locking lever, *a* the main-spring, *b b* pins, *c* the trigger, *d* the lever spring, *e* the trigger spring, and *f* the firing pin. Withdrawal of the empty shell is accomplished by a strong extractor, having a straight backward motion, in the act of opening the breech-piece to receive subsequent charge; the breech-piece withdraws the shell easily. The mechanism can readily be dismounted, cleaned and put together again by a novice. Fig. 2 shows the breech portion of the rifle in position to carry when loaded (half-cocked).

The Remington system has developed the greatest rapidity in firing consistent with simplicity. At a test trial in Belgium the Remington was awarded the first prize, having been fired 15 times, then taken in pieces, re-assembled and again fired 15 times, in the space of one minute and thirty-nine seconds. When loaded and at half-cock, the arm cannot be discharged by any violent concussion or by accidentally pulling the trigger. It can be made of any desired weight, from 6 to 10 pounds, depending upon the dimensions of the barrels required. It is well known that accuracy and range in shooting depend upon the barrel and kind of ammunition used. Barrels of any required length, calibre or rifleing, and suited to any metallic cartridge, can readily be used in this system. Springfield and Enfield rifles are easily transformed into breech-loaders of the same calibre, by substituting the Remington system in place of the old lock, which can be done for less than half the cost of a new gun; and if at any time after such alteration it should be deemed desirable to substitute a new barrel of improved calibre and rifleing, that can also be done by screwing the new one into the same breech system. Official reports and certificates from the Governments of Denmark, Greece, Sweden, Spain, Belginm and the United States are on file in our office, if any interested desire to see them.

PATENTS IN CANADA.—A letter from our correspondent in Montreal, dated June 14, 1872, informs us that, by the bill for the amendment of the patent law, all inventors may obtain patents in Canada on the same terms as residents. This bill has passed both houses of Parliament, received the sanction of the Queen and will become a law on the 1st of September. It must, however, be remembered that, by the 7th section of the new law, the patent is invalid if a patent has been granted in any other country for a longer period than one year before filing the application in Canada. The inventor must also by the 12th section, elect a domicile in Canada, where the Patent Office may correspond with him or the solicitor presenting his application here.

GUANO.—Large deposits of guano are reported to have been discovered north of Callao, by a scientific expedition fitted out by Harry Meiggs, the railroad king of Peru.

CORRESPONDENCE.

Heavy Mine Blasting in Dutch Flat.

EDITORS PRESS:— Considerable interest has been manifested in the result of some large blasts of nitro glycerine powder, lately exploded in this place; and as this is a matter of much importance to Deep Gravel Miners I ask a place in your columns for the statement of a few facts.

These blasts were two in number; one of Giant Powder No. 2, and the other of Hercules Powder. The same quantity of powder was used in each, viz: 2,500 lbs.

The Giant No. 2 was fired in a body of ground in the deep shaft claim known as the Island. This body of ground was about 200 feet square, with a face of 85 feet high, and an average depth of something over 90 feet. It was well relieved on two sides, and partially relieved on the other two, by being washed down as is usual in hydraulic mining.

About the center of this Island a drift was run in to 58 feet from the front, and a cross-drift run on one side 28 feet, and on the other 40 feet. At the ends of this cross-drift, or T, 2,100 pounds of the powder was placed; the balance, 400 pounds, being placed in a body of hard cement, extending in front from the main bank about 40 feet, and 18 feet deep, into which three small chambers were run for deposits for the powder. These separate charges were all fired simultaneously by electricity.

The Result.

The small bank of hard cement in front was thoroughly pulverized, and rendered in good condition for washing. The large bank had numerous cracks through the surface, immediately over the powder, and extending for some distance back — and some of them reaching nearly or quite across the bank, but none of the bank thrown down, as is usual with blasts of the common blasting powder.

This blast was exploded on the 22d of May, and washing commenced about two days after that date. The small bank in front washed well.

Soon after piping was commenced on the main bank, a large hole or cavern was discovered in an angle of the face, nearly 40 feet high, and reaching back to an unknown depth. This at first was supposed to be the effects of one of the large deposits of Giant Powder; but on continuing washing for two weeks, it was discovered that the cavern had no connection with that blast, but was the result of a blast of common blasting powder, which was fired some three years ago, one chamber of which was not washed out; the water of that season failing before it was reached.

There seems to be a firm wall of cement standing beyond the reach of the black powder blast; but the men working in the claim feel confident that they will soon get some caves from the Giant blast, and feel very hopeful that the blast is a good one.

The Hercules Powder Blast,

Was exploded on the 9th inst., also by electricity, in the Badger claim, in a bank similar in many respects to that in which the Giant was used, both banks being of well cemented gravel, and free from layers of sand. The bank was something over 200 feet square, of irregular shape, with an average depth of 77 feet. The face was of the shape of the inner or concave front half of a horse shoe, and about 65 feet high. It also had one side partially relieved by a washed out ravine.

The main drift for this blast was run in 55 feet from the front, with a T, one side of which was drifted 40 feet, and the other 32 feet; it also had a small drift running off from the main drift about 30 feet from the front, on one side 25 feet, and the other 22 feet.

In these several headings were placed 2,025 pounds of Hercules Powder — the balance, 475 pounds, was distributed in three places in a drift extending 25 feet into one side of the concave front as a relief to the main blast.

The front of the bank was broken and thrown forward nearly to the back drift of the T, and numerous cracks run to the surface, immediately over and back of the principal deposits of powder.

The work done by this blast was more like that of a common powder blast, the action of which is well known, often lifting the whole mass of gravel, plunging it forward and throwing it down. Four or five days piping has been done on the Hercules blast; it washes well. It is contended by the advocates of nitro-glycerine powders for bank blasting, that although they do not make so good a showing on the surface as common blasting powder, and do not throw the bank as much, yet that they do better work by pulverizing the hard cement at the bottom and in the immediate vicinity of the powder. This fact remains to be demonstrated and can only be determined by washing down the ground of these, and other blasts that may be put in.

The large blasts of nitro-glycerine powder at Smartsville last year were nearly failures, one of which was 1,500 pounds and one of 3,600 pounds. Whether these will prove of more value remains to be proved by washing. At present it would seem that if they can be made available at all it will only be where the ground is wholly of a hard and compact character and devoid of sand streaks, indeed in such exceptional cases as those just experimented with in this place. The miner will need full demenstration of its efficacy before he will risk 50 cents per pound for any explosive to blast gravel banks. Each of these blasts have cost the respective companies nearly $1,300. It is difficult to institute a comparison of cost with black powder, as no blasts of over 300 kegs, or say about $950 in value, have been fired in this mining district, if we except one in the D. F. B. G. Co.'s claim, which was fired under very unfavorable circumstances. BLUE GRAVEL.

Dutch Flat, June 16th, 1872.

Observations of a Practical Miner.

MESSRS. EDITORS:— In almost all mining regions the soil is generally barren of vegetation. Go where we will, in Europe, Australia, America or elsewhere, wherever there is a profitable mineral region, there you will meet with scant vegetation. This is the case with the mining regions of "the West," and the coal regions of Pennsylvania. A mineral-bearing region is just such an one as the agriculturist would seek to avoid; but the indications there are always such as would interest the searcher after minerals.

Miners generally prefer a vein dipping at an angle of about 45°, and from that to a perpendicular. Still, veins at a larger angle are profitably worked, especially those of coal. Some of the tin and copper mines of Cornwall are almost flat, yet at the same time rich in minerals.

Miners who have always resided in one locality are apt to acquire prejudiced notions with regard to the minerals in their neighborhood. For instance, when in England the writer heard Cornish miners remark that copper could not "live" in limestone, and such is verily the case — that is, to any great amount — in Devonshire and Cornwall. Although a splendid vein of copper ore may present itself at the surface, it is sure to die out prematurely. This, however, does not prove that all limestone formations are non-productive; for it is observable that there are peculiar characteristics in that formation, it being like other stratifications—some parts highly mineralized, whereas other localities are barren of all valuable mineral. Experience is the only safe-guard.

It is conceded, however, by a majority of practical miners, that veins in the limestone formations are not so well defined, or their declination so unerring as veins in granite, slate or trap, and the minerals found therein are more frequently found in deposits; yet there is no serious objection to mining in such formations, for Germany has many good mines in limestone. Such, also, occur in the Middle and other States of this Union, and in the Territories, especially Utah, wherein is the world renowned "Emma Mine," a most remarkable deposit in limestone.

Argentiferous galena, lead, zinc, plumbago, etc., are found in many different stratifications; but are more frequently found, and generally more permanent, in the limestone formation than any other; this is proved by the lead mines of Great Britain, where the principal source of lead ores are Derbyshire, Cumberland and the hills of Lanarkshire—well-known lead-mining districts; also in Illinois, Wisconsin, and especially Utah, in the United States—all in the mountain limestone. Thus we infer that in such districts those minerals are more likely to occur than copper, tin, and many other metals. It is an undeniable fact that copper, tin, and many other mineral veins do not extend to as great a depth in limestone as in other formations; neither do they show the same composition at the surface as in granite, slate, or trap; I have known veins of copper ore in the slate and trap formations where snow could not remain, owing to the heat, resulting from chemical action on the minerals beneath. Iron pyrites, and some other minerals, when present in mines, in large quantities—in mines of copper, nickle and coal—often cause great heat, sometimes rising to 90°F. The dumps at the surface, containing the refuse from such mines, not unfrequently, when sufficient moisture is present, ignite and burn for some time.

Gold, silver, lead and iron mines, if properly ventilated, seldom reach to such a degree of heat as those just referred to; hence, we must expect a greater chemical action, or using the common phrase, a larger "blow-ont," at surface from veins producing copper and nickle in their own formations — or formations favorable to their especial development — than most other minerals. Why in their own formation? Because there is generally a greater body at a greater depth in a favorable formation.

We frequently hear, that such and such a mine is nothing but a deposit or pocket. Now, by a deposit or pocket, is meant a body, either a large or small amount of mineral imbedded in the earth without any sign of a vein; just the same as if a pit was dug and filled with some substance foreign to the surrounding strata. I have seen many mines which were nothing but deposit after deposit to the depth of 600 feet; yet there was not a doubt of the existence of a vein.

The existence of a vein is not due to any valuable mineral, for we frequently see veins without a particle of mineral that is of importance to mankind; still they are "veins" traversing strata after strata. Neither does one vein always yield one particular mineral, for the vein may be imbedded in a stratification favorable to many minerals. I have seen copper 'give' or 'die' out and tin or iron take its place; the former is preferable the latter objectionable. Iron often takes the place of lead or galena, this is also ominous. Again if zinchlende predominates at or near the surface in a copper, lead or galena vein, and decreases in depth, such is considered a favorable change; nevertheless many mines have been abandoned, as unprofitable, when this mineral prevailed in abundance at surface which, if developed, would verify the miners adage, that "it rides on a good horse;" but even then it must be in a certain formation, because in the limestone it is liable to prevail, while in other formations it is otherwise.

This mineral if found in auriferous or argentiferous districts will produce either of the precious metals. In some parts of Colorado it is abundant, and I doubt not that ere long that territory will remunerate mining proprietors abundantly when those mines shall have been developed to a sufficient depth; for there the veins are principally in granite, where we expect the mineral to extend to a greater depth. In this state, in the slate formation, I have seen copper veins near the surface, composed chiefly of zincblende with but little work done thereon, but at present suspended on account of inexperience or lack of funds, which yet only need a fuller development to verify prior assertions.

Veins traversing different strata are liable to contain minerals agreeing with the stratas through which they pass. We often see a vein extending through different formations, and at the approximation of each we see a decided change, either for better or worse; sometimes the change of stratification may be in depth, if so, there we see a similar phenomena.

It is frequently asserted by the inexperienced, and even by miners themselves, that "where it (the mineral) is, there it is," insinuating that there are no laws by which we can be governed. From people holding to such an idea I differ; for by careful observation there can be determined what strata will produce a certain mineral or minerals, without any hypothosis, or conjecture; and this is what we want to arrive at. The want of the knowledge of the works of Nature in these days of easy acquirement, amounts almost to a sin. I believe that we, as a mining population, are far behind what we should be, for if we were to record our observations as astronomers, botanists and others do, what they observe, we should now be able to trace veins and minerals as easy, in comparison, as the astronomer can a wandering star in the heavens. T. S.

Hydraulic Mining with Slight Fall.

EDS. PRESS:—In complying with your request for information in reference to successful hydraulic mining with light grade for flumes, I cannot do better than by giving you a history of an enterprise successfully accomplished by Gaskill & Bowers. The Ohio Flat Mining Co's claims are situated in Yuba county, near Forehstown, at the head of a large flat, two miles long with a very slight grade all the way. Our claims are 2,787 feet long, pay dirt 300 to 400 feet wide, on bed rock, covered by 15 feet of a sedimentary clay deposit and 15 feet of vegetable mould, etc. We were compelled to commence a mile below our ground on the surface of the flat and pipe out a cut, laying our flume— 2½ by 4 feet—on an inch grade to the rod. We were four years in piping out the cut and laying the flume, at an expense of $25,000.

As the cut deepened to 20 and 30 feet, quicksand in the bottom and the sliding in of the sides gave us much trouble. In places the cut is 500 feet wide on the surface. With 500 inches of water there is no trouble in the flume carrying off all the top dirt from two pipes. When we clean up the bottom, which we do in summer—piping off top dirt all winter—we fork all the gravel that we can from the ground sluice, letting as little heavy gravel as possible go into the flume. The flume is four feet in the soft granite bed-rock in the claim, and the pay gravel is from one to three feet deep. As fast as the dirt accumulates around the mouth of the flume we add boxes, until we have on about 500 feet, and we have now as good a dump as ever and no trouble with the flume.

We are now making our third clean-up. The first year we took out of 150 feet square of ground, $16,000; the second year, $19,000; and a good showing for $25-000 this year.

We have 20 years of as good or better work ahead. This is the result of *our experiment*. Novices alone would have undertaken such a job. A scientific man would never have considered it practicable or invested a cent in such an enterprise.

D. W. C. GASKILL.

The Eureka Grinder and Amalgamator.

This machine, invented by Henry Bolthoff, and manufactured by Hendrie Brothers, is now in successful operation at Whitcomb's mill, in Nevada. The amalgamator consists of a tub about five feet in length, and two feet in width, the sides being in the form of a segment of a circle, so that the bottom, an iron plate, one inch in thickness, forms a concave surface. The muller, another iron plate, one inch thick, is made convex to fit the bottom of the tub, and is suspended from uprights rising on each side of the tub, and made to swing like a pendulum, thus grinding the pulp that passes between the upper and lower plates. There are adjusting screws for raising or lowering the muller. When grinding, its whole weight, several hundred pounds, is brought to bear so that the pulp is reduced to an impalpable powder, polished and rendered susceptible of amalgamation. It is fixed at the extremity of the tables, so that the crushed ore passes from them to the amalgamator. The quicksilver is held on the upper surface of the muller to prevent grinding. This surface is covered with a copper plate, upon which the amalgam is gathered. Mr. Whitcomb informs us that this amalgamator saves about twice as much gold from the tailings as the Bertola pans, with none of the labor or trouble necessary to keep them running, since the work of charging and discharging is constantly going on, and it is necessary to clean up only once each week. The machine now in operation receives the tailings from two five-stamp batteries, and on six-ounce ore saves about $50 a week. So well pleased is Mr Whitcomb with its working that he has ordered another from the Messrs. Hendrie, which will be set to receive the tailings from the other twelve stamps in the mill. With these additions it is believed that $100 a week will be saved, with very little trouble or expense, which otherwise would go down the gulch or only be saved by the troublesome process of handling over and running through pans. This is the first amalgamator of this pattern that has been used, and this has only been in use about three weeks. Should it prove as effective on longer trial as it now promises, it is probably that the Hendrie Brothers will find a large demand for them.—*Colorado Register*.

THE SANTA BARBARA GOLD MINES.—The Ventura *Signal* says of the newly-discovered gold placers in Santa Barbara: "The gold is found in coarse grains, and in the early times large amounts of it were secured by 'dry washing.' Several relics have been found at these places, going to prove that the mines were worked a century ago."

SCIENTIFIC PROGRESS.

Maple Sugar—Its Formation.

The formation of the sugar in the sap of the maple, like many other organic processes, is not perfectly understood by chemists, but the following facts are well ascertained, and afford a partial explanation of the mystery. In the latter part of the summer considerable starch and similar substances are deposited in the cells of the sap wood of trees. These are the stores laid up for the manufacture of the foliage for the next summer. When spring comes the roots of the trees wake up from their winter sleep, and imbibe large quantities of water from the soil, long before the buds begin to swell. This water is of course charged with various salts, some of which, like carbonate of lime, are held in solution by the carbonic acid contained in the water, while others are soluble in pure water. This water is gradually carried up the stem of the tree by capillary attraction and by osmose; but as it ascends through the cells it converts some of their contents into sugar, becoming denser and more saccharine as it rises, until finally it reaches the buds.

If now the weather is warm enough, the buds expand and soon burst into leaves and flowers. The first energies of the tree are devoted to perfecting these important parts; and when this is accomplished the leaves commence to prepare the material for the growth of another year. This is deposited in the new layer of wood which is formed directly under the bark, ready to be taken up again the next spring for the formation of new twigs and leaves, and thus the circulation goes on from year to year. The only part of the trunk that takes any active part in the circulation is the sap or light-colored wood. The old dark portion of the wood in the interior has become clogged up with insoluble matter, and is no longer capable either of conducting sap or of performing any other function in the economy of the tree.

If we wish to make sugar from the sap of any tree, it must be tapped at the time of year when it is most abundantly charged with that liquid, and this is usually a month or two before the leaves begin to expand.

Nearly all our hard-wood trees will yield more or less sugar, but only a very few of them furnish it in large quantities, or pure enough for domestic use. The *Acer*, or Maple family, stands at the head of the list in this respect, and chief among these is the *Acer Saccharinum*, or sugar maple, the juice of which contains from three to six per cent. of cane sugar. That which comes from the tree when it is first tapped is much richer than that which flows later in the season. The first sap ascending the stem naturally dissolves out the largest proportion of the starch and gum. After the sap is drawn it is concentrated by boiling until it commences to crystallize, when it is allowed to cool and deposit the sugar.

During this concentration of the sap the lime salts which have been held in solution are gradually precipitated as the syrup becomes more dense. This deposit, or "nitre," as it is called, consists, according to some authorities, of carbonate of lime; others consider it to be malate of lime or saccharate of lime. The flow of sap varies much with the state of the weather, being most abundant when the nights are cool and the days warm.

This has been explained on the supposition that on warm days the air contained in the trunk of the tree expands, thus forcing the sap out; while as the tree cools off at night the air contracts, and the sap rises from the roots to supply the vacuum, to be again forced out the next day. As soon as the leaves commence to expand the flow ceases, because then the leaves are able to evaporate all the water that the roots can supply. But the continual tapping of the tree, and the withdrawal of its stores of nourishment, soon causes it to languish, and it cannot survive such treatment many years any more than a man could survive the loss of a considerable portion of blood each day.—*Ex.*

SPECTRUM OF THE ZODIACAL LIGHT.—This subject is intimately connected with that of the spectrum of the aurora, because Angstrom announced that the zodiacal light and the aurora both give the same monochromatic spectrum. But Liais, the Brazilian astronomer, has lately been studying the zodiacal light under the very favorable sky of Rio Janeiro, and comes to a different conclusion. He finds that this does not differ from ordinary sunlight, but gives a continuous spectrum. It is, however, too faint to see any dark lines. This result is confirmed by Rev. T. W. Webb, of England, who has recently been observing the zodiacal light with a spectroscope which shows the auroral line very distinctly. He sees nothing like the green auroral line in the zodiacal spectrum.

DETECTING WATER IN GASES.—J. Myers.—The author calls attention to the fact, discovered by him, that when so-called dry gases (dried by the best possible means) are caused to pass through boiling sulphur, that substance will give the means of detecting the presence of water in gases which do not chemically act upon sulphur under these conditions.—*German Chem. Society.*

ELECTRICAL.—Prof. Von Bezold is authority for this statement—the result of his own experiments—that when an electrical discharge, after traversing a spark interval, is offered two paths to the earth, namely, a short one and a long one interrupted by a test-plate, with small striking distances, the discharge is divided. With greater distances the electricity takes only the shorter path, and even carries with it electricity of the same kind from the other branch. If electrical waves be sent into a wire insulated at the end, they will be reflected at that end; the phenomena accompanying this process, in alternating discharges, appear to owe their origin to the interference of the entering and reflected waves. Prof. Von Bezold also found that an electrical discharge travels with equal rapidity in wires of equal length, whatever the materials of which the wires are made.

ARTIFICAL WATER LIME.—It has been long known to chemists that water lime consists substantially of quick lime, burnt clay, and a small portion of the oxides of iron and magnesia, but scarcely any effort has been made to utilize this knowledge. All yellow or red clays contain iron, and most specimens of lime in use contain the required magnesia. If burnt clay or brick dust in the fine powder be mixed with an equal weight of fresh slacked lime, and twice this weight of clean, sharp sand be added, a compound will be formed which will harden under water equal to the best hydraulic cement.

VEGETABLE SOURCE OF CARBOLIC ACID.—J. Broughton states that an examination of an oil, obtained from the *Andromeda Leschenaultii*, a common hill plant, proves it to be methyl-salicylic acid and identical with oil of wintergreen. By saponifying this with caustic alkali and dissolving it, methylic alcohol is obtained. This is decomposed with any mineral acid, yielding salicylic acid in crystals, which, on being distilled with lime or sand in an iron retort, yields carbolic acid.

CHEMICAL ACTION IN POROUS FILTERS.—In the course of an examination of filters, at the instance af the *British Medical Journal*, Professor Wanklyn has had proof that filtration through beds of porons materials includes very powerful chemical action, albuminoid matter being instantly resolved into ammonia and other products hy the action of the filter, which, indeed, behaves in this respect like a boiling solution of permanganate of potash. A good filter is a sanitary engine of great power.

ONE of the salts most sensitive to heat is the double iodide of silver and mercury. Its natural color is yellow, but it turns red if warmed, and returns yellow again on cooling.

THE power of magnetism to generate heat has been recently shown by M. Louis d'Henry, a European chemist, in a most interesting experiment.

MECHANICAL PROGRESS.

The New Mode of Conveying Compressed Air as a Motor.

We made reference, a few months since to some interesting experiments which had just then been concluded in Portland, Maine, with regard to an improved method of conveying air or steam for motive purposes, so as to avoid the usual amount of friction against the walls of the conducting pipe. The principle involved, and mode of testing the same, is stated as follows:

"Given to transmit the full effect of an air compressor (not of the prime motor), at a pressure of say 40 lbs. to the inch. The first step is to determine the size of the conduit pipe. Set a pressure gauge on the reservoir which receives the compressed air, and when a pressure of 40 lbs. is indicated, open an orifice in the reservoir so large as to exhaust the effect of the compressor as fast as delivered.

The compressor is now working into the reservoir, the orifice is now blowing off, and the gauge stands at 40. Suppose the orifice to be one inch in diameter. Now attach to the same a pipe of one inch calibre, say 100 feet long. At a point near the outer end of this pipe set a pressure gauge, and the pressure, with the pipe wide open, will be found to be something less than 40 lbs. The element of friction has been developed in the pipe, and will accumulate rapidly as the distance is increased, and it is evident that a pipe of the diameter of the original exhaustive orifice will not convey the force without loss.

Take a new pipe 1¼ inch diameter; on this find the point where a slight diminution of pressure is indicated by the gauge. Just beyond this point insert a ring of one inch orifice in the pipe, giving a shoulder, all round, of ⅛ inch, and the lost pressure will be found to have been restored.

The effect of the ring or diaphragm is to line the pipe with a hollow cylinder of air throughout, which cannot advance, being prevented by the ring and held against the pipe with a pressure of 40 lbs. to the inch, and all the friction which occurs is, consequently, that of air against air.

There are now at a considerable distance from the reservoir, an orifice of one inch, and a pressure of 40 lbs. to the inch, and there being no more than these at the reservoir itself, no force has been lost in the transmission. The reservoir has been virtually moved forward to this point. Repeating the operation at the same distance out from this point as from this to the reservoir produces the same result. Each joint or section of the pipe charges the succeeding with original force, and it would seem that there can be no limit to the application of the principle."

This invention is the product of the ingenious brain of an old Californian, Mr. Robert Spear, who not only conceived the idea in San Francisco, but made his first experiments here in July, 1866. Mr. Spear afterwards went East, where he continued his experiments, and when he made his application for a patent, the United States Patent Office sent its ablest examiners to Boston to test it. The Department would not grant his claims to their full extent, until after such test had been made—so it is reported in the Boston *Advertiser*.

So preposterous were his claims that the commissioners thought he was crazy when he first made his application for a patent.

Mr. Spear demonstrates the correctness of his idea of the mode of the passage of the currents of air or steam through his new conduits by using colored fluids in glass tubes provided with his invention, and by which it is plainly shown that the propelled current is kept in the center of the tube, without any friction at the sides. If, by a diaphragm pierced with holes at the sides, this current is forced to divide and seek passage next the inner surface of the pipe, it at once resumes its course in the centre after the obstruction is passed. Mr. Spear has also discovered that while any angle or bend in any ordinary pipe obstructs a fluid flowing through, by enlarging the pipe at angles, the friction and loss of power is overcome. At Mount Cenis and at the Hoosac tunnel it has been found necessary greatly to enlarge the whole conducting pipe for every mile of distance the compressed air has to be forced. This, of course, seriously increases the expense. Mr. Spear's invention greatly reduces the size of conduits necessary for long distance.

The claim set up that this invention proves the existence of an exception to the law of physics, that there can be no motion without friction—that not a particle of diffcrence can be detected between the pressure at the reservoir and at the extreme end of the conduit pipe, must still be taken with many grains of allowance notwithstanding "the concurrent testimony of the most eminent men of the country to that effect." There *must* be friction in passing the iron rings; and it cannot be possible that even a current of air can pass through air at rest without friction.

A NEW INVENTION.—It is probable that before long the usual notice to be seen on board steamboats, "No smoking allowed abaft the funnel," will have to be discontinued, owing to the absence of any funnel abaft which smoking can be prohibited. Smokers will be simply requested to discharge their smoke into the water. According to the *Swiss Times*, two Austrian marine officers and a marine engineer have discovered by united experiments a method of conveying away under water the smoke from the steam engine, instead of through a funnel into the air. They make use of double ventilators, which compress the smoke and force it overboard. For propelling these ventilators they employ, according to circumstances, either water power—that is, the pressure of the water between the surface of the water and the place where this apparatus is fixed—or, for smaller vessels, steampower. The advantages of this discovery are the greater security of ships of war, as in armor-plated ships the only vulnerable part, the funnel, will be taken away. Other advantages will be the saving of space now occupied by the passage of the funnel through every deck, as well as security against danger from fire; complete regulation of the draught, and in consequence of that, the application of a method for consuming the smoke, thereby effecting a saving of fuel; and, finally, better ventilation of the boiler. For submarine and torpedo ships and monitors this discovery will be of great value, as those last will be rendered quite invulnerable. The trials that have been made have, it is alleged, resulted in a complete success, even to the smallest details.

A NEW BUILDING MATERIAL.—A new kind of material, called "Mezzo marble," has just been introduced in England, and seems to create great attention among all the architects and decorators. It is a material professing to have all the qualities of marble, not only as to beauty of finish but durability, and can be produced at one-tenth the cost of marble, and one-half that of scagliola or enamel slate. A large number of architects and other visitors were recently invited to see the works in London, and a very fine specimen of the workmanship—a splendid fountain, which is intended to be shown at the forthcoming Dublin exhibition, previous to its removal to one of the seats in Ireland of Sir Arthur Guinness.

SALTS OF COPPER A PRESERVATIVE AGAINST MOULD.—The application of salts of copper to stones exposed to the atmosphere (the sulphate, or blue vitrol especially) is strongly recommended, for the purpose of preventing the growth of cryptogamic plants, which so frequently injure them. Housekeepers who are distressed by the formation of a green coating upon the pavements in damp yards and shady places, may perhaps find in this hint a suggestion of a method of preventing the difficulty in question. It is probable that crude carbolic acid will have the same, but perhaps a less durable effect.

STEEL RAILS.—No fact in connection with railroad improvements is more important, just at this time, than the experiments and practical movements towards replacing the common iron rail with one of steel. The Erie railroad is now laying down steel top rails at the rate of nearly 2,000 tons per month. It is expected that within four years the entire Grand Trunk road of Canada will be laid with steel top rails—over 200 miles will be thus laid within the next twelve months. The Baltimore and Ohio and New York and New Haven as well as several other roads, are also rapidly changing their tracks from iron to steel.

The advantage of steel rails over iron, in each of the essential particulars of durability, safety and economy, are now very generally acknowledged. The fear that steel would be more likely to break than iron, especially during severe weather, is now proved groundless. The President of the Grand Trunk road says that while from 3,500 to 4,000 rails break every winter on the iron portion of the track, only eight or ten were broken on the 110 miles of steel track which have already been subjected to the practical test of winter service.

CHICAGO CONCRETE.—A concrete is being used in Chicago for building purposes, composed of one part Louisville cement and three parts sand, ashes, and the finer particles of debris from the burned district. The concrete is mixed somewhat thinner than mortar, and is poured into the pine board molds which shape the wall, and at the same time broken brick and stone from the ruins are imbedded as thickly as may be in the mass, which sets firmly in forty-eight hours. It is then coated over with Portland cement, of which, also, all the trimmings are composed, the surface being so cut and pointed as to be almost indistinguishable from dark gray sandstone. Walls are built of concrete two feet in thickness. The advantages claimed for this material is that unskilled laborers are perfectly competent to do the work under proper supervision, and much expense is thereby saved. Experiments were made several years ago by the British Government, in which a similar concrete was used in the construction of army stables, the labor being supplied by soldiers who had no previous experience in such work. The result of the experiment was reported to be satisfactory in every way.

PIGMENTS FOR COATING IRON.—The *Scientific American* says: "The first requisites for a pigment or coating for iron are, that it should not contain any copper—the corrosive action of that metal on iron being intense. Then if for work exposed to air it should form such a coating as to be impervious to that gaseous fluid, and be so constituted chemically as not to be oxidizable by it; if under water—especially sea-water—to be impermeable to moisture, so elastic as not to crack, so insoluable as not to chlorodize; to form a perfect apparently hard coating, and yet wear just enough to keep off incrustation, barnacles, or growth of grass. In fact, this slow wearing away is the only preventive of fouling in iron vessels."

DRYING LUMBER BY STEAM.—All the pianomakers in New York, and some cabinet-makers, dry their lumber by steam heat. The process is very simple. A large room is provided with systems of iron tubes, through which the steam circulates, and so arranged that the water of condensation flows by itself back to the boiler. No steam or water can get out, so that only the heat gets into the room, in which the lumber is kept for weeks, and even months, at a temperature of 100 to 150° F. Another process is to expose the lumber to the steam itself.

Monday as Pay-Day.

In this age of progress experiment often decides important questions in the social economy, as well as in science. One of the late innovations upon former custom has been the payment of workingmen on Monday, instead of Saturday. Several large manufacturing establishments in England and America have inaugurated this system, which has generally been found to work well. An Eastern exchange, speaking of the plan, presents the following argument in its favor:

The temptation necessarily involved in a day of leisure and a pocketful of money, have been no longer felt. Sunday, instead of being devoted to dissipation, has become a day of healthful recreation and rest; and the week's wages, formerly in great part wasted, have been used to far better advantage. Under the old system it often happens that first-class workmen lose from one to three days early in the week in recovering from the effects of their Sunday excesses. Under the new system this evil no longer exists. It is said that the same number of men do one-and-a-half times as many days' work in the same time, The efficacy of the change has been thoroughly proven. It is to the interest of both master and man; and it therefore lies in the power of every employer to add greatly to the physical and moral welfare of his employés, not only without any loss, but with a positive gain to himself.

MINING SUMMARY.

THE following ie mostly condensed from journals pub lished in the interior,in proximity to the mines mentioned

California.

ALPINE COUNTY.

MOUNTAIN CLAIM.—Monitor *Miner*, June 22: Mr. Ray has recently struck very fine looking ore.

THE Monitor mill hes been running this week crushing ore and concentrating.

THE Tarshish mill is regularly turning out bulliou and will this week have made arrange ments for crushing wet.

THE Copper vein being sunk upon iu the Glohe is said to enlarge and improve as they go down.

SCHENECTADY.—Alpine *Chronicle*, June 23: Good ore is being taken out of the 150 ft. and 64 ft. levels. Last week a very fine body of ore was found in the rise from the lower tunnel to the 150 ft. level.

AMADOR COUNTY.

NEW MINE.—Jackson *Ledger*, June 29; The Rice & Co.'s ledge, Upper Rancherie, is turning out excellent rock. The shaft is down 106 ft. with a well defined vein 18 inches in thickness that will yield over $40 per ton.

CLEAN UP.—J. H. Rice & Co., cleaned up on their hydraulic claims, at Upper Rencheria a few days ago, and received for their winter's work with one hydraulic, $9,000 in clean gold.

BUTTE COUNTY.

CHEROKEE MINES.—Butte *Record*, June 29: The Cherokee Co. is building a large ditch from Butte creek about 50 miles in length. About 10 miles are completed. The work will not be accomplised before next yeer.

The Cherokee Flet Blue Grevel Co. have an almost inexhanstible mine of about 1,000 acres. Already $160,000 have been expended in permanent improvements.

The Spring Valley C. & M. Co. Ex. works are running a tunnel of 1,500 ft. which will bring their claim to the depth of 500 ft. They employ 80 men, and have about 3 miles of rippled flume paved with stone, and numerous undercurrents to catch fine gold. In these nnder-currents diamonds have been found, which have sold as high as $125 each.

CALAVERAS COUNTY.

TO BE RESUMED.—Calaveras *Chronicle*, June 29: Work is to be resumed on the Lone Star mine at West Point.

HUDSON.—Work on the ledge will soon be resumed. New hoisting worke will be put up. The shaft has been sunk 143 ft. the ledge showing splendidly at that point.

READY.—The new 10-stemp mill on the Prussian Hill mine at Railroad will commence crushing next Monday.

THORN.—Calaveras *Citizen*, June 29: The shaft is down about 270 ft. Some Rock taken from the hottom, we should judge will pay $60 to the ton.

INDIAN CREEK MILL.—This Co. are running a 20 stamp mill with 40 hands dey end night.

SHEEP RANCH CLAIM.—Furgusou & Wallace are doing a prosperous business. A short time since they commenced running a lower level from which they are crushing some very rich rock.

WOON'S CLAIM.—This claim is on the ridge between Indian creek and San Antone. The Co. are crushing some very rich rock reaching as high ae $80 to the ton.

EL DORADO COUNTY.

RICH QUARTZ. — Placerville *Democrat*, June 29th: A quertz vein wae found by Peter Gross and S. Holzer, recently, on the northern side of Poverty point. The rock shows plenty of free gold.

TO BE 'STARTED. — Placerville *Republican*, June 27th: The Pacific mine will be etarted up in the course of a month or 6 weeks. The Young Hermon, will also he started shortly up.

STRIKES.—We hear of some big strikes in quartz in Big Cañon, near this city, recently.

KERN COUNTY.

BACCHUS MINE.—Havileh *Miner*, June 22d: This mine hes commenced operations. The ownere are teking out rock valued at $30 per ton. The ledge is about 2½ ft. in width; length of chimney 50 ft. Considerable ore is on the dump.

NEVADA COUNTY.

DAISY HILL.—Gress Valley *Union*, June 29th: We have been ehown some rock from the lower level of the mine, which was covered with fine gold, end indicates that they have again come upou the rich chute that turned out so richly last season. Rock of the kind will go fully $100 per ton. The incline of the Daisy Hill is down 230 ft., and a level run from the bottom 130 ft. north, and 80 ft. south.

BOWMAN DAM.—Nevada *Transcript*, June 26: The North Bloomfield is making active preparatione for the reconstruction of the dam, of the big reservoir at Bowmau's ranch. About 45 white men and 150 Chinamen ere employed.

PLUMAS COUNTY.

PLUMAS EUREKA.—Quiucy *National*, Juue 29: Thie Compeny are egain running with water power, having a new turbine, aud are pounding away at the rate of more than $1,000 a day. They have broken ground for the foundation of a new 40 stamp mill on the east eide of the mountain.

CRESCENT MILLS.—Work is going on eteadily; more men have been put on and a drift ie being run to strike the pay chimney on the secoud level.

MAMMOTH EX. — Wm. Elwell, of Jamison, has recently taken up the northeastern extension of tbe Mammoth quartz lead, and will soon start a tunnel.

GOON ROCK.—The Genesee M. Co. are getting very rich rock from their tunnel, and the ledge continues to improve in size. Their mill is at work steadily, and paying "big."

J. M. Jackson, on his claim at Herdscralble, Mohawk Valley, for his lest clean-up, took out $450, the product of the lahor of 3 men for 3 weeks.

SAN BERNADINO COUNTY.

NEWPORT.—San Bernadino *Guardian*, June 22: We were shown this week the returns of a large lot of ore from Ivanpah, the net result of which was $1,500 per ton, end assayed $1,744. This was from the Lizzie Bullock.

SIERRA COUNTY.

NORTH SIDE.—Downiville *Messenger*, June 22: The North America claim at Hepsidam, is employing 60 men, working day and night.

THE CHALCEDONY cleims, neer Gibson creek, are paying well.

MORE hands are wanted in the Mt. Pleesent claims; $3.50 a day is offered.

IN PORTER'S claim on Whisky Diggings Creek, the tunnel is in 1,600 ft. and in gravel.

THE PILOT CO.'S tunnel, No. 1, just helow the North America claims, is in about 800 ft., and they expect to strike pay in a short time.

RICH LENGE.—A young man named Wehn hes discovered a rich quartz ledge 5 miles west of Eureka.

NEW MILL.—The owners of the 21 Qnartz Claim are putting up a mill on Kaneka Creek.

TRINITY COUNTY

NEARLY THROUGH.—Weaverville *Journal*, June 22: The Union Hill Co. expect to strike through the bed rock this week.

RICH DIGOINGS.—The claim of Ben. Cunniughem, on Bolt's hill, yielded $7,000 last winter as the result of 70 days' run, with 3 men employed most of the time and two all the while.

TUOLUMNE COUNTY.

NUGGETS.—Sonora *Democrat*, June 29: James Craig, showed us this week several pieces of pure gold taken out of his claim on Sullivan's Dry Arroya last week. The lergest weighed 3⅛ ozs., the other $10 and $12 each.

CHEROKEE.—Sonoma *Independent*, June 29: The "Mammoth" lode is paying from $30 to $40 per ton. The Co. are putting up a whim for rock, and are running 2 arastras, with plenty of water. Preparations are also being made to build a mill.

The "Napoleon" lode is yielding rich rock, which peys from $40 to $50 per ton. This Co. will build a mill shortly.

STRIKE.—Henry Wilson has struck a rich vein of gravel, near Fisk's place, Columbia. Prospects as high as $1 to the pan, and will everage 5 bits all through.

Nevada.

ELKO COUNTY.

BUEL.—Elko *Independent*, June 29: The Tecoma is looking better than ever. Twenty men are at work.

The Osceola is also looking well. There is 150 tons of ore on the dump.

Two discoveries have been made within the last week—one called the Tempest and the other the Growl. The ore is milling, and asseye high in silver.

The Molly has a shaft 100 ft. deep, with good wall rocks and very rich ore.

There ie not an idle man in the camp.

EUREKA DISTRICT.

BULLION.—Eureka *Sentinel*, June 28: W. F. & Co. shipped one bar for the Lemon M. and M. Co., valued at $1,500, yesterday.

ITEMS—EUREKA CON.—From the Windsall shaft a fine quality of ore is being extracted. A body of ore has been fouud in one of the old drifts, so thet after many months idleness, the Buckeye is again to become ore-producing.

VALENTINE.—Work has just been commenced, and already e new body of ore has been expoeed a short distance from the old works.

DUNDERBERG.—Four meu are at work iu clearing out a chamber which was filled by a surface cave. . Ae eoon es the drifte are in suitehle order more men are to be employed.

EL DORADO.—Work is to be resumed iu a few days.

ADAMS HILL MINE.—It continues to improve in all directions on the lower levels. The immense body of ore letely developed in the Wide West shaft shows no signe of growing less as explorations are extended. Some rich ore will shortly be shipped to San Francisco, and a crushing is elso to be immedietely made at the Lemon Mill.

SILVER WEST ie yielding a very fine quality of smelting ore. The incline is down over 50 ft., and drifts have been run in various directions, resultlng in the exposure of good sized bodiee of ore lying almost horizontal.

BULLWHACKER.—Work has been resumed on this property, and excellent ore is being brought to the surface.

SILVER LICK.—A rich body of very fine chloride wae etrnck a few days ago in a drift from the main shaft. The averege of the first-class pile is said to go as high as $700 per ton.

ELY DISTRICT.

BULLION.—Ely *Record*, June 23: Dnring the past week W. F. & Co. ehipped bullion valued at $116,667.84

KENTUCKY.—This claim ie on Panaca Flat. The new work consists of a ehaft, down 150 ft., in which a small vein of ore has been cut, assays from which run from $400 to $900.

The Company are erecting hoieting works, part of the machinery heing already on the ground and the rest expected within a few days. The engine is 20-horse power, boiler 30-horse power, with douhle hoisting drum, and was huilt at the Miners' Foundry, San Francisco. Work will he resumed before the end of next month.

CONDOR.—On Saturday night the timbering near the surface of the deep shaft gave way. New timbers were at once placed in position, and sinking is going on as usual. The bottom of this sheft is lookiug better than it has for the past month. It is down 140 ft., and a drift will be run from the hottom when 150 ft. has been atteined. Ore shows from 1½ to 2 ft. in the ledge, the average of assays from which during the pest week has been $199.26.

PIOCHE.—Have cut ledge on lower level and made connection with Meadow Valley, which give good circulation of air. The ledge everages 20 inches in width where cut, and the averege assay of ore from the pest three days has been $192 per ton. Both the Americen Flag and Bowery mills having heen shut down for repeirs, but little ore has been shipped recently. On Friday lest, however, shipping of ore was resumed as usual.

HUHN & HUNT.—Still driving into the hill, with no change at thet point. Heve been working the ledge lying eonth of the one on which the injunction was placed by the Desdemona Co. The ledge is a foot in width, and assays from it show $256 per ton.

STIRLING.—Shaft is down 150 ft. Looking extremely well in tbe hottom, with ledge showing 4 ft. betwcen walls, oreassaying $111.15 per ton.

AZTEC.—Shaft down 60 ft. Ore shows in ledge 18 inches in width, the average assay from which is $88 per ton.

SAN JOSÉ CON.—Sinking on the Justice, shaft continues. The shaft is vertical for abont 28 ft. and then runs on an incline for 105 ft. the vein pitching to the north at an angle of abont 55 degrees. Bottom of the incline is in good milling ore.

AMELIA.—For the past 2 weeks the ledge has been considerahly broken and thrown south. On Friday morning last, however, the solid ledge was again cut into; showing 2 ft. in width ore from which assays $126.

NEWARK.—Drifting on ledge, but will suspend this work in e few days in order to timber the shaft and prepare for the erection of hoisting works.

MOCKING BIRD.—Ore shows at present 4 ft. in width, and asseys run from $40 to $106 per ton.

INGOMAR.—Sinking of main shaft continues, good progress being mede.

HARPER.—The claim is about 150 ft. south of the Condor, on the flat east of town. Ledge shows in the shaft where it was cut in sinking, 3 ft. wide. Assays from different parts of the shaft show an average of $204.21. Shaft down 46 ft.

LILLIAN HALL.—Drift from the bottom of shaft is in 50 ft. Shaft down 200 ft.

CHIEF OF THE HILL.—Connection with the surfece is complete, and ventilation throughout the mine is excellent. Have resumed work on east drift on lower level, and ledge continues to widen and improve.

BOWERY.—Mine improving and developments of an important character may shortly be expected. Mill will stert up again on Pioche ore to-morrow. Furnace nearly completed.

AMAZON.—Vertical sheft down 85 ft. From the bottom of this shaft a drift has been run north 50 ft., at which point the ledge was tapped, and at present showe 2 ft. of low grade ore.

SPRING MOUND.—The whim has beeu started up, end a full force ie employed. Expect to cut the ledges in about 50 ft. more. Shaft down 150 ft. and is well cribbed from top to bottom.

SPRING MOUNTAIN TUNNEL.—Work has been temporarily euspended.

MEADOW VALLEY.—New building over Sammit ehaft ie nearly completed. Work proceede as usuel in Nos. 7 and 3, from both of which minee the ueual quantity of ore is being shipped.

RAYMONN & ELY.—Mine looking exceedingly well throughout. Ore in lower level drift continues to improve ae opened upon. Still shipping to mill more ore than can be crushed.

EXCELSIOR.—Stoping and sinking of winze continues, with ore constantly improving.

AMERICAN FLAG.—Work progressing as usuel. Steam hoisting works have been ordered and are expected daily.

PAGE & PANACA.—Sinking hes been suspended until the eheft has been cribbed to the bottom. Down 275 ft.

WASHINGTON & CREOLE.—Drifting on stations mentioned in our last continues, good headway being mede. No new developments.

CHAPMAN.—Stoping on ore continues. Commenced raieing ore again on Thursday laet.

PACIFIC TUNNEL.—Work on contract progreesing favorably, good headway beiug made.

ALPS—New shaft down 135 ft. and still sinkiug. Rock very hard.

HUMBOLDT.

BULLION.—Unionville *Silver State*, June 29: Amount shipped from the Arizona, since our last issue, was $7,075.

REESE RIVER.

A CAVE.—Reese River *Reveille*, June 23: A ceve from the old Oregon breast exposed a blind ledge recently on Lander Hill aud some very good ore ie being found in it. George Goodwin located the Accidental claim, commenced sinking an incline on it which is down abont 20 ft., getting good ore.

BOOTJACK.—Blackfan and Farrel are getting good ore. The ledge is about 6 inches thick; the ore will pay about $400 per ton.

STONEWALL.—Gill and Bowers are taking ont splendid ore. The shaft is 63 ft. deep, and a drift is being run on the ledge.

GROVE TUNNEL.—Work is being pnshed at the 125 ft.-level, and 125-ft. west level; the ledge looka well at both points.

LANE ANN FULLER (PACIFIC).—The air shaft from thc 500-ft. level was completed this week. The ore still continnes of a high grade, and everything looks prosperous.

CAMPBELL AND YOUNG.—The shaft is about 35 ft. deep and an incline being sunk on the ledge.

VINEYARD.—Work is egain being prosecuted on the old mine

STAR OF NEVADA.—A contract has been let for driving the main tunnel ahead 100 ft.; work continues on the west level of the Cope ledge, ore looking well. A chute is being raised from the Hazel Queen cross-cut and good ore is coming out. An incline is also heing snnk from the Hazel Queen cross-cut. A recent crushing of ore worked over $600 per ton.

SEMANTHA.—Operations have heen resumed on this mine. The incline is being sunk deeper; very little ore coming out.

JANE LENGE.—Bray & Co. sunk the incline 45 ft. below the break and then run a cross-cut to the ledge; now getting average ore.

WHITLATCH UNION.—Reed & Co. are breasting on their large body of ore. Anderson and Cook continne to get lots of high grade chloride.

MOHAWK (SARATOGA).—This mine still turns out lerge quentities of high grade ore; ahout 40 tons of ore in the ore-house.

OPHIR CANON.—The Murphy Co. has about 30 men employed, stoping, sinking and running drifts; are teking out considerable ore.

BELMONT.—MONITOR.—Letting contracts for new tunnels which will be started in a few days; are extracting from the upper levels 8 to 10 tons daily of No. 1 ore; two-thirds of the working force are drifting on the lead and opening up the mine, uncovering the ore preparatory to more extensive operations when the new mill is completed; mine improving in every quarter; working 40 men.

ARIZONA.—On the seme ledge or vein have let a contract to run a lower level north from main incline; work progressing with favorable indications; working 10 men.

EL DORADO.—Still sinking main incline; down 400 feet; vein strong as ever, full size of the incline. The 340-foot level south, going through a rich chimney of black sulpherets 100 ft. from the main incline; 26 men employed.

BELMONT CO.—Sinking main incline below water; taking out considerable pey ore as they go down; new hoisting works running in good shape; working 20 men.

COMBINATION CO.—The lessees have sterted up the hoisting works to relieve the lower levels of water, and are taking ont very rich ore; working 20 men.

INDIANAPOLIS AND ELLSWORTH.—The incline in the Indienapolis has reached 280 ft. without any feulting of the lode, with a working force of 20 men. About 18 tons of ore is being extracted weekly.

SHOO-FLY.—From this mine about 60 tons of oro heve been taken to mill during the last quarter, yielding betweeu $80 and $90 per ton, and leaving a much larger quantity of a lower grade in the damp.

MANHATTAN TUNNEL.—Work is being steadily pushed on this tunnel, with a fair prospect of cutting the maiu lode of the series—the Enterprise—within a few weeke.

ELLSWORTH.—The Ural S. M. Co., has just let a contract for sinking the incline 100 feet deeper, meking 250 feet before driving a level.

ESTA BUENO.—Two ehifts, of 4 men each, are at work sinking the incline—present depth, 65 feet—and are bringing to the surface a fair qnantity of $200 ore.

AMERICAN FLAG.—The incline on this mine is being sunk au additional 50 feet, making the whole depth 260 feet.

GOON YIELD.—Five and a half tons of unassorted ore from the Monitor mine at Belmont, just worked at the Manhattan mill, yielded $413 92 per ton.

WASHOE.

LOCAL SUMMARY—BELCHER.—Gold Hill *News*, Jnne, 29: Daily yield 280 tons. The south drift at the 1,000-ft. level is in 150 ft. from the Crown Point line, and the fece is in very fine ore. The stopes and ore breasts at the 1,100-ft. level are yielding splendidly, and the eighth floor above it is being opened out, making 50 ft. in hight thet the ore body is being worked. The west drift from the main sonth drift at the 1,100-ft. level is in 102 ft., and hae nearly arrived at the point of intersection with the main incline from above. The main incline is down 433 ft. below the 850-ft. level, and in very herd blasting ground.

OPHIR.—The shaft ie down 70 ft. below the 1,300-ft. level, in good sinking ground, and progressing 3 ft. per day. Prospecting the north drift of the 1,100-ft. level is puehed with vigor, while that of the sonth drift le suspended for the present, and the sinking of a winze is commenced 165 ft. south of the main west tunnel. They are also opening up the 700-ft. level again, as the main tunnele run on that level but partielly prospected it, leaving some 400 ft. of almost entirely new ground between that and the 1,100-ft. level.

GOULD & CURRY—Prospecting ie heing actively pnshed ahead at the 1,500-ft. level. The incline ie down abont 90 ft. below the 1,500-ft. level and still making fair progress.

SAVAGE.—Daily yield 175 tons, principally from the lower mine, with about 40 tons a day from the old upper mine. The iucline ie down 50 ft. below the loweet level, and good progrees still being made. Work is stopped in the north cross-cut at the 1,500-ft. level, bnt the south cross-cut at the same level is still being driven east.

RED JACKET.—We were ehown a sack of ore from this mine a day or two since which as says rich.

IMPERIAL-EMPIRE.—The drift at the 1,500-ft. level shows more quartz and better indications of ore during the last day or two. The drifts at the 1,650-ft. level ehow more encouraging indications.

CHOLLAR-POTOSI.—Daily yield 215 tons. Tho ore sections all continne looking well, especially the west Blno Wing body recently opened. The work of clearing out and repairing the shaft progresscs ae usual.

CROWN POINT.—Daily yield 560 tons, keeping the various mille of the Co. steadily running. The various ore breasts are yielding immeneely, and promising better thau ever.

YELLOW JACKET.—Daily yield 24 tons. The water being all out of the incline, and the 1,500-ft. station is heing cut out and opened.

CONS. VIRGINIA.—Prospecting as usual at tho 500-ft. level and also the lower level, from the Gonld & Curry mine.

OVERMAN.—Shaft down 60 ft. below the 1,000-ft. level, and a strong increase of water encountered. The 1,000-ft. level drift is in 350 ft., and in good running ground.

HALE & NORCROSS.—Daily yield about 50 tons. The winze connection not yet beiug completed between the 1,400 and 1,500-ft. levels; the heat ie very great at the last mentioned level.

OCCIDENTAL.—The ledge is widening and ehowing better prospecte for a good body of ore.

JULIA.—Shaft 885 ft. deep, and prospecte etill excellent. Preparing to erect the new hoisting works machinery.

JUSTICE.—The ore being milled from the south shaft is almost sufficient in qnantity and qnality to pay expenses of working the entire mine.

UTAH.—Building nearly completed; machinery in place and will resnme sinking the shaft as soon ae the wire cable arrivee.

SUCCOR.—New shaft down 165 ft. Good ground for sinkIng. Prospecting as usual in the mine. Mill not rnnning.

SIERRA NEVADA.—Daily yield, about 40 tone. Plenty of prospecting going on, but no new ore development as yet.

KENTUCK.—Daily yield 50 tone.

CALEDONIA.—The 700-ft. etatiou ie being opened. When this is done, sinking the ehaft will be resumed.

SUTRO TUNNEL.—Tunnel in 2,942 feet. Rock hard, but good progress made.

DANEY.—Work progreseing in both shaft and drift.

KNICKERBOCKER.—Shaft down 345 ft. Rock hard, hut hlasts well.

WHITE PINE.

TREASURE HILL MINES.—EBERHARDT.—White Pine *News*, June 22: Breasting out west of Keystone ehaft with a force of 4 men in fair ore.

NORTH AURORA.—The work progresses as usual iu Lady's chamber. The ore in the hreaet ie of an even grade and holds ont in the body. The south chamber is turning out rich ore. There is ahont 600 tons of ore on the dump at mouth of tunnel.

WARN BEECHER.—There ie 5,000 tons of ore in sight in the different hreasts.

BEECHER CON. M. & M. CO.—There is a decided improvement iu the appearance of the ledge matter. There ie 20 tons of ore ehipped daily to mill,

GEN. LEE.—Drift running east in ore on contract. Assaye go as high as $185 to the ton.

NOONDAY.—Will commence ehipping ore to mill on the 20th inet.

SUNBEAM.—Being actively worked eince out of litigation. The shaft ie going down in fine ore.

SILVER WAVE.—Good ore hae heen found in No. 4 shaft.

HAMILTON M. & M. CO.—Work is pushed ahead with vigor on the Co'e. minee. The Pogonip & Othello is improving daily. There ie a large amount of ore on the dumps, which will he ehipped to the Co's. mill, now ready to etart up.

SAN JUAN DEL RIO.—Work goee on, sinking ehaft in the ore body of the hack ledge. A conciderable amount of ore lies sacked on the dump.

ORIGINAL HIDDEN TREASURE.—Work going on with all the force procurahle. 300 tons of $40 to $50 ore in eight in the Big chamber. Ore in the npper tnnnel hae improved, in the past few daye, and a large hody in eight. 100 tons in sight in the Rathhnrn chamber.

PENNSYLVANIA.—Sinking two shafts, both in vein matter, carrying more or lese ore.

SILVER HILL MINES.—Moree & Irvin are turning out good ore from the Owyhee mine. The Silver Plate is showing good ore in the breaets.

OUTSIDE DISTS.—ROBINSON DIST.—The furnace of the Canton M. Co. will eoon he in full hlaet, and it is likely that other furnaces will he erected hy other Coe. Favorable mention is made of the Silver Star. A shaft ie down 40 ft., showing a large body of bromide and eilver glance ore. The Hays mine ie aleo highly spoken of. A shaft ie down about 40 ft., ehowing a 4-ft. vein of milling ore.

Arizona.

HAULPAI.—TUCSON *Citizen*, June 15: Haulpai mines are looking well. Elder's furnace at Cerhat is about ready to run. Coovera furnace at Chloride has commenced operatione. Several new discoveries have been made of excellently rich ore.

Colorado.

SHIPMENTS.—Colorado *Miner*, June 26: Baily & Nott have sent forward for, and on account of owners, since their last report 62,286 lbs. of ore.

BULLION.—Palmer & Nichole have shipped since their last report, 4 bars valued at $2,-367.02.

MARSHALL TUNNEL.—A large and rich vein has been struck a day or two ago, 1,200 ft. from the entrance.

Central *Register*, Jnne 19: Tomlinson's claim on the Kent Co. lode, at 170 ft. ie producing a grade of ore that is yielding from 5 to 7 ozs. per cord. The crevice in the east drift will avcrage 7 ft. in width.

Idaho.

LOCAL RECORD.—Silver City *Avalanche*, June 22: The Empire shaft is down 190 ft and timbering the shaft commenced yesterday. The ledge in tho ehaft for the laet 20 or 30 ft. opened ont to 3 and 4 ft. in width, with about one ft. of very rich ore. The winze ie down some 60 odd ft.

They aro hauling ore from the War Eagle mine to the Owyhee, mill, which etarted 2 or 3 days ago.

The Minneeota ehaft has heen let on contract to sink 110 ft. helow the 3d level. The South Chariot mill will commence crushing Minnesota ore the coming week.

The Mahogany ie looking splendidly all throngh the etopee. The rich hody of ore in the etopes is extending frrther hoth north and south than in the level ahove.

The South Chariot mill is yet runuiug ou Mahogany ore, but will commence on Minuesota next week after which Mahogany ore will be hauled to the Ellmore mill, and 20 stamps put to work thereon instead of 10.

The South Chariot main ehaft ie going down at a lively rate.

The Ellmore ie lookiug well in the drifts running from the winze. The shaft is exceedingly hard einking.

The Pauper shaft ie down 130 ft. The veiu continuee ahout 10 inchee in width, aud is very rich in silver.

Straightening and enlarging the Chariot ehaft goes on ae usual, 300 ft. being alread timberced.

The Illinois Central continuee looking well.

The Phantom has a shaft down 40 ft. and ie yielding ore that mille $70 per ton.

The morning Star boys' are daily expecting to tap the rich body of ore for which they have been running all wiuter.

SOUTH MOUNTAIN.—Jamee Hitchens has again reeumed operations on the Golconda, Original and Galena.

Montana.

PIONEER GULCH.—Deer Lodge *Independent*, June 22d: Ashmead & Allen average over $60 per day to the hand, and have ground that will pay from $50 per day down to wages for the next 6 or 7 years.

MOOSE CREEK.—Parke & Dicky are running 3 arastras on rock from the Dixie ledge. They have about 400 tons of ore ou the dump. Marsceau & Co. are running 3 arastras on rock from the Nonpariel lode. They crush about 6 tons per day. Faulkner & Co. are running at the head of Mooee Creek and are making from $9 to $10 per day to the hand. Dodge and Co. are working in the same locality, ground-sluicing.

Some small hut rich galena ledgee have been diecovered on the divide between Boulder and White Tail Deer Creek.

Joe Alger brought up 645 lbs. of eilver bullion from Phillsburg, Thureday night, the result of the first run of the Stewart Mill since the dry cruehing process has been put in operation.

The Pioneer Co. cleaned up, on Bratton's Bar, about $4,500 laet week.

FRENCH GULCH.—The Swamp Co. last week cleaned up their eluices and got over 130 ozs. of dust. They did not touch their ground sluice, which is suppoeed to be very rich.

The mines in Cable and Oro Fino gulchee are paying well. One Co. on the latter gulch are making $25 per day to the man.

STRIKE.—Virginia *Montanian*, June 20: We mentioned a few daye ago the discovery hy Ed. Covely, of a valuable gold lode at Summit. The new vein gave such unmietakable evidence of worth that Mr. Covely made a teet of 20 tons of the ore at the John How mill last week. The result is 33 ozs. of a superior quality of retort—very nearly $25 per ton. The rock was taken from discovery shaft, 20 ft. from the eurface, where the vein is fully 2½ ft. in width.

CLOVER RANCH.—Heleua *Herald*, June 20: W. M. Elliott & Co., have heen for several seasons putting in a hed-rock flume in Upper Indian Creek, and have just reached hed-rock, with proepects good for all the time and money expended.

Irwin & Co, in the Cheat'em diggine, are running a hydraulic, ae are eome 8 or 10 othere, and all have good paying ground.

Tieleke, Lee & Co., are working in extensive and rich har diggings on the south side of Indian Creek. They have about 3,000 ft. of ground up and down the bar, three or more hundred feet wide, with a splendid dnmp.

Utah.

EAST TINTIC.—S. L. *Tribune*, Jnne 28: The Joe Bowere is under way, though the hidden deposit has not yet been reached.

THE tunnel in the Rising Sun Hill, has again reaumed operations.

THE Brown hoya have taken out some 80 tons of galena, Their prospect is very flattering; the vein ia ahout 4 ft. wide.

The Isahella Victoria is still driving ahead, two drifts heing run. Work on the Undine ia reeumed, a new shaft is to he sunk to the depth of 100 ft.

S. F. Stock and Exchange Board.

WEDNESDAY, NOON, Jnly 3d, 1872.

The sales at the Board for the week ending Wedneeday, the 26th ult., amonnted to $2,330,-000—$800,000 more than the week previous. The most active etocks were the Imperial and the Meadow Valley, 5,400 and 5,800 shares, respectively, having heen sold. The total receipts from the Raymond & Ely mine for June, aggregated $328,795, or ucarly $11,000 per day. The Sierra Nevada mine yielded 155 tons of ore last week; the Crown Point mine yielded 3,255 tone, valued at $115,274. The Eureka mine cleaned up last week 700 ouncce of amalgam. The Hale & Norcross yielded last week, 370 tons of ore; the Chollar-Potosi, 1,070 tons, assaying $37.20 per ton; the North Star 120 tons; tho Savage 1,370 tons, assaying $21.42 per ton.

Stocks have been up and down thie week, as usual, which the following eummary will illustrate. On Friday, mining stocke were rather weak. From previous morning's eales, Gould & Curry advauced $13, and Hale & Norcross 82; Chollar-Potosi dcclined $12; Crown Point, 10; Overman, $5.50; Savage, $11; Yellow Jacket, $3; Caledonia, $4, and Raymond & Ely, Alpha, Ophir, Sierra Nevada and Segrogated Belcher, each $1. On Saturday, etocke were firmer, hut the husiness done was light, Alpha advanced $5; Overman $9; Chollar-Potosi and Gould & Curry, each $10; Coneolidated Virginia, Exchequer and Imperial, each, $1. Crown Point declined $5; Savage $4; Yellow Jacket $2, and Ophir $1. Monday, prices were still firm, but the demand was not active. From highest rates on Saturday, Crown Point advanced $10; Savage and Yellow Jacket, each, $5; Chollar-Potosi $4; Caledona $4; Raymond & Ely, $4, and Overman and Ophir, each, $1. Gould & Curry declined $11; Consolidated Virginia and Exchequer, each, $1.

On Tuesday the demand was still quiet and prices lower. From the highest pricee on Monday, Chollar-Potosi fell $6.50, Overman, $5, Yellow Jacket $4, Gould & Curry $8, Segregated Belcher $3, Crown Point $2, and Golden Chariot $1. Savage went up $5.50, Raymond & Ely $3, Ophir $1.50 and Sierra Nevada $1. Wedneeday the 3d inst., prices were a little stronger, and a fair business was done. From the highest ratee ou Tueeday, Ophir advanced $3.50, Yellow Jacket and Segregated Belcher each $3, Chollar-Potosi and Savage each $2.50, Crown Point $2, Raymond & Ely $2, and Consolidated Virginia $1, Alpha declined $3, Overman $2, and Page and Panaca $1.

Thursday being the anniversary of our National Independence, the San Francisco Stock and Exchange Board adjourned over from Wednesday afternoon, until the following Monday.

Comparative Pricea—Extremes, Advance and Decline.—S. F. Stock and Ex. Board.

	June 27.	*Highest.*	*Lowcst.*	July 3.	*Adv.*	*Dec.*
Alpha	$29	91	25	28	—	1
American Flag	18½	18½	17¾	18½	—	—
Belcher	1000	1000	950	1000	—	—
Buckeye	—	3½	3½	3½	—	—
Chollar-Potosi	107	109	92	105	—	2
Caledonia	49	49	43	46½	—	2½
Cons. Virginia	22½	29	22½	—	1½	—
Crown Point	175	175	155	170	—	5
Daney	—	2⅝	2	2	—	—
Eureka Cona	27¾	29	27	29	1¼	—
Eureka	16	16	16	—	—	—
Exchequer	9½	10	8	8½	—	1
Gould & Curry	155	205	150	172½	17½	—
Golden Chariot	6	6	5	5⅞	—	1⅛
Hale & Norcross	72	72	66	69	—	3
Ida Elmore	15½	16	15½	—	—	6
Imperial	4½	5¼	4	4⅞	⅛	—
Kentuck	280	280	270	275	—	5
Mammoth	60c	60c	45c	45c	—	15c
Meadow Valley	15½	15¾	14¾	15¾	¼	—
Mahogany	—	18½	17	17	—	—
Ophir	34	37	31	37	3	—
Orig. Hid. Treas.	—	10	8½	9	—	—
Overman	85	90	85	86	—	—
Pioche	13½	19½	13	19½	5	—
Raymond & Ely	138	148	132½	142½	4½	—
Savage	142½	143	122	143	½	—
Sierra Nevada	—	15	14	15	—	—
Succor	4	4	3½	—	—	—
Wash. & Creole	4½	5	4½	5	½	—
Yellow Jacket	120	120	110	119	—	1
Justice	9¼	9½	9	—	—	—
Seg. Belcher	86	86	80	85	—	1

Lateat Prices—Bid and Asked.

	BID.	ASKED.		BID.	ASKED.
Alpha Cons	27	28	Ida Elmore	—	—
Amador	250	—	Imperial	4⅜	4¾
Belcher	—	—	Kentuck	—	—
Chollar-Potosi	103½	105	Meadow Valley	15½	15¾
Crown Point	—	—	Opbir	35	37
Daney	2	2½	Orig. Hid. Treas	9	9
Eureka Cons	28	29	Overman	83	85
Eureka	—	—	Savage	138	140
Golden Chariot	5	9	Raymond & Ely	140	142½
Gould & Curry	152½	175	Sierra Nevada	14½	15
Hale & Norcross	69	70	Yellow Jacket	118	119

IRON STEAMERS.—The Pacific Mail Steamship Company have recently concluded a contract for the construction of two iron propellers of 4,000 tons each, for the China service, at a cost of $850,000 each, to he finished in eighteen months.

CONTINENTAL Life Ineurance Co., 302 Montgomery street, corner of Pine.

Mining Shareholders' Directory—Meetings, Assessments and Dividends.

[Compiled weekly from advertisements in the MINNIO AND SCIENTIFIC PRESS and other S. F. journals.]

ASSESSMENTS.

NAME, LOCATION, AMOUNT AND DATE OF ASSESSMENT.	DAY DELINQUENT.	DAY OF SALE.
Alpa M.Co., Ely Dist. Nev., Jnne 18, 50c,	July 26	Aug 19
Arizona & Utah M.Co., Nev., June 4, 50c,	July 10	July 31
Bellevue, Placer Co., Cal., Jnne 20, 50c.	July 29	Aug. 19
Cascade Blue G. M. Co, Cal. May 15, 20c.	June 18	July 9
Cherokee Flat B.G. Co, Cal. June 8, $1,	July 10	July27
Corona Cons., Eureka Dis, June 25, 10c.	July 31	Aug. 22*
Crown Point Ravine M.Co., May 3, $5	June 20	July 20
DefiauceM.Co., Grass Valley, June 3, 50c,	July 5	July 22
Diamond S.M Co., White Pine, June 29, 15c,	Aug 1	Aug 20
Eagle Quicksilver. May 8, $40	July 11	July 15*
EckendornM.Co., Calaveras Co., June 8, $3,	July 12	July28
Excelsior M. & M., Nev., June 20, $2	July 27	Aug. 19*
El Dorado M. Co., Cal., May 13, 25c	June 16	July 10
Exchequer Gold Hill, June 26, $3	July 31	Aug. 22
Francis, Mariposa Co., June 18, $1	July 20,	August 13
Gen. Lee S. M. Co., W. Pine, Ap 27, 10c.	June 26	July 16
Golden Chariot, Idaho, June 22, $2.20.	July 26	Aug. 17
Dntch Flat B. G. Co., Cal., June 11, $1.25,	July 16	Aug 6
Hid. Treas. M. Co., W. P., May 11, 10c	June 17	July 8
Hid. Treas. Cona. M. Co., W. P., May 31, 10c.	June 17	July 8
Howard Hill M. Co., G. Valley, June 4, $5,	July 5	July 20
Hudson G. M. Co., Cal., Jnne 18, 10c.	July 27	Aug. 17*
Hubn & Hunt, Ely Dist., May 29, 50 cts.,	July 5	July 26
Ida Elmore M. Co., Idaho, May 24, $3.	June 29	July 27
Indepondent G. M. Co., Cal., May 10, 50c.	June 22	July 12
Ingomar M. Co., Ely Diat., June 5, 25c	July 15	August 9
JacobLittleM.Co., Virginia, Nev. May 30, $5,	July 1	July31
Justice M. Co. Storey Co. Nev., $1	June 24	July 15
Kentuck M.Co., Gold Hill, Nev., June 12, $10,	Ju 16	Aug 5
Knickerbocker, Nev., May 30, $1	July 3	July 23
Lemon M. & M. Co., Nev., May 29, $1	July 9	Aug 10
Louise S. M. Co., Nev., July 3, 10c	Aug. 10,	Sept. 7*
Lyons & Wheeler, Arizona, May 18, 10c.	June 24	July 15*
Mammotb S.M.Co., White Pine, Jnne 27, 10c,	Aug 1	Aug 27
Mina Rica M. Co., May 8, 20c	June 10	July 1*
Minnesota M. Co., I. T., May 12, $1.50.	June 22	July 20
Newark M.Co., Ely Dist. Nev., June 12, 50c,	July 22	Aug 17
Newton Booth Cons. M.Co., Nev. June 6, 30c,	July 12	Aug5
New York Cou., Gold Hill, June 21, 50c,	June 22	Aug 9
Nooday S. M. Co., White Pine, July 2, 25c,	Aug 5	Aug 26
Norman G. M. Co., Cal., June 27, 5c	Aug. 1	Aug. 22*
Obio Cona. M. Co. Cal., May 21, 10c	June 20	July 20
Overman M.Co., Gold Hill, Nev., June 6, $4,	July 18	Aug 7
Pacific Ramie Co., June 11, 20c	July 18	Aug. 9*
Pea Vine S.M.Co., Ely Dist., May 14, 20c.	June 20	July 12
Pennsylvania, White Pine, June 14, 40c,	July 22	Au 13
Potomac S.M.Co., Nye Co., Nev, June 6, 50c	July 15	Aug19
Pride of Mt. M. Co. Nev., May 7, 25c	June 17	July 10
Roxby, Gold Hill, June 3, 50c	July 6	July 27
Southern Gold Hill, Nev, June 24, 25c,	Aug 3	Aug 26
Star Cona., Eureka Dist., June 20, 25c.	July 29,	August 20
St. Patrick M.Co., Placer Co., Cal., June 19, $3,	Ju 27	Aug19
Tecumseh, Gopher Diat., Jnne 26, 10c.	July 31	Aug. 22*
Union G. M. Co., Cal., May 20, $2.50	June 22	July 9*
Union G. M. Co., Cal., June 25, $1	July 29	Aug. 19*
Wash. & Creols M. Co., Nev., May 13, 75c.	June 20	July 17
William Penn Cona., Nev., July 3, 10c	Aug. 5,	Sept. 2*
Winnemucca Chief, Nev., Jnne 19, 15c,	July 30	Aug. 20*
Woodland M. Co., Cal., May 21, 12½c	June 25	July 15*

MEETINGS TO BE HELD.

Baltimore American M. Co.....Annual Meeting, July 16
Belmont M. Co.....Special Meeting, July 12
Belmont M. Co.....Special Meeting, July 25
Best & Belcher M. Co.....Annual Meeting, July 8
Calaveras G. M. Co.....Annual Meeting, July 8
Chollar Potosi M. Co.....Annual Meeting, July 8
Eastport, Coose Bay, Coal M. Co., Annual Meeting, July 15
Evening Star No. 1 Co.....Annual Meeting, July 8
Hardy Coal M. Co.....Special Meeting, July 9*
Kentucky G. & S. M. Co.....Annual Meeting, June 9
Mammoth Grove M. Co.....Annual Meeting, July 8
Norman G. M. Co.....Annual Meeting, July 9
Overman M. Co.....Annual Meeting, July 11
Paupsr M. Co.....Annual Meeting, July 18
Pride of the Mountain M. Co...Annual Meeting, July 12
Rock Island G. & M. Co.....Annual Meetiug, July 8
Savage M. Co.....Annual Meeting, July 18
Union Consolidated M. Co.....Annual Meeting, July 20
Utah S. M. Co.....Annual Meeting, July 9
William Penn Cons. Co.....Annual Meeting, July 15*
Woodland G. M. Co.....Annual Meeting, July 17

LATEST DIVIDENDS—(Within Three Months).

Belcher M. Co., $30.....Payabls May 10
Belcher, $30.....Payable June 10
Black Diamond Coal Co., ½ per cent...Payable June 28
Crown Point G. & S. M. Co., $3.....Payable June 12
Eastport, Coose Bay, Coal M. Co., $5.00..Payable June 11
Keystone Quartz Mining Co., 50c.....Payable July 10
Keyatone M. Co., $7.50.....Payable April 10.
Meadow Valley M. Co., $1.00.....Payable June 20
North Star G. M. Co., $7.....Payable April 9
Raymond & Ely M. Co., $7.....Payable June 10

—*Advertised in this journal.

San Francisco Metal Market.

PRICES FOR INVOICES

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

WEDNESDAY, July 3, 1872.

IRON.—			
Scotch Pig Iron, ℔ ton	$80 00	@	85 00
White Pig, ℔ ton	70 00	@	75 00
Refined Bar, bad assortment, ℔ lb	— 04½	@	— —
Refined Bar, good assortment, ℔ lb	— 05	@	— —
Boiler, No. 1 to 4	— 05½	@	— —
Plate, No. 5 to 8	— 06	@	— —
Sheet, No. 10 to 13	— 09	@	— —
Sheet, No. 14 to 20	— 09	@	— —
Sheet, No. 24 to 27	— 09	@	— —
Horse Shoes	7 50	@	
Nail Rod	10		
Norway Iron	8		
Rolled Iron	5		
Other Irons for Blacksmiths, Miners, etc.	5	@	6
COPPER.—			
Sheathing, ℔ lb	— 40	@	— 45
Sheathing, Yellow	— 30	@	— 33
Sheathing, Old Yellow	— 12	@	— 12½
Composition Nails	— 28		— 30
Composition Bolts	— 28		— 30
TIN PLATES.—			
Plates, Charcoal, IX ℔ box	19 00		19 50
Plates, I C Charcoal	17 00		17 50
Roofing Plates	15 00		16 50
Banca Tin, Slabs, ℔ lb	— 50		— 55
STEEL.—English Cast, ℔ lb	— 15		— 16
Drill	15		16
Flat Bar	17		18
Plough Points	3 75		
Russia (for mould boards)	— 12½		
QUICKSILVER.—℔ lb	— —		— 85
LEAD.—Pig, ℔ lb	— 05¾		— 06
Sheet	— 10		— —
Pipe	— 9		— 10
Bar	— 06½		— 07
ZINC.—Sheets, ℔ lb	— 11		— 11½
BORAX.—Refined	— 27		— 30
Borax, crude	— 5		— —

GOLD IN SALT LAKE.—An assay from some mud from the bottom of Salt Lake has developed the fact that it contains a small portion of gold—about $2.90 per ton. The mud came rom a depth of 300 feet.

THE FLOOD cauaed by the overflow of the Colorado and Gila rivers, has subsided.

San Francisco Enterprises—Our Sugar Refineries.

Sested as we are in a location which is the point through which the produce of all the grest sugar-growing countries hordering on the Pacific, or comprised in its islands, seeks an outlet, we are forced to regard it as one of the most importsnt of those articles of commerce which we are called on to supply to the people of this coast, snd to those of the territories west of the Mississippi. The refining of sugar stands in importance as the second of all our local industries, the value of the refined sugars and their products last year heing no less than $4,500,000. The refineries themselves are amongst the finest buildings in the city.

The Bay Sugar Refinery,

Located on Battery street, under the shadow of Telegraph Hill, is, alheit, being somewhat dingy in appearance, one of the most imposing structures in the lower part of the city. The main building is 120 feet long by 75 hroad, is nine stories high, and has next door a store-house for the refined sugars. The first story contains the principal machinery used in the refining—the air pnmp and the vacuum pan for boiling. The second story is devoted to packing, and has machiuery for that purpose and for powdering. In the third story is done the crushing, shaving and drying of the sugar. The next five stories are used for draining the sugar, and for grainiug it when it is ready for that proccss. In the ninth story the sugar is melted and prepared for clarifying.

The Process of Refining

Is as follows: The raw sugar is hoisted to the ninth or topmost story, where it is melted and passes in a liquid state through bag filters. It then runs into iron cylinders filled with animal charcoal, which, resting on the fifth story, are sufficiently high to reach the seventh. Here, having been purified, it flows into receiving tanks, and is thence conducted by a pipe to the boiling or vacuum pan on the first story. From this the air, exhausted by the air-pump, carries with it the vapor, etc. This air, vapor, etc., is conducted away hy a large pipe, which passes through two upright cylinders, into the first of which all heavy suhstances fall, and in the second of which the vapor is condensed by a stream of cold water entering from above. From this last cylinder it is conducted away by a pipe. By the exhaustion of the air in the vacuum pan, the sugar is boiled at a much reduced temperature—one of 140 to 170 degrees, instead of one of 212. From the vacuum pan the liquid passes into the receiver in the basement story, whence it is drawn, and that intended for the first quality sugars is poured into conical moulds, which are left in the basement for a couple of days, when it is taken to the fifth story to be drained. While in the moulds it is treated with a saturated solution of the best white sugar, which heing poured over it, passes through it, carrying away all traces of syrup. The balance of the liquid from the mixer is taken to the centrifugals and drained at once, receiving no further treatment till it is dried. The syrup drained off is condncted hy pipes again to the vacuum pan, where it undergoes a repetition of the process already described. From it,second quality sugars are made. The yet superfluous liquid ohtained from the second draining, forms the Golden Syrup of commerce. All the sugars are, after draining, removed to the drying stove in the drying room, where they hecome perfectly dry and hard. Any imperfectly drained portion then remaining, is removed by the shaving machine, when the resulting product is of a uniform color, and is ready to be packed in barrels, half-barrels and kegs for the market.

This company hss the most spproved centrifugal mschines (the Hepworth) in use which facilitste the draining off the syrup in second and third grsde goods. Under the msnagement of Mr. H. Voormsn and superintendency of Mr. Meese, the Bsy Sngar Refinery Co. promises to attain a degree of prosperity not excelled by either of the other companies on the Pacific Coast.

California Sugar Refinery.

This magnificent refinery is located at the southwest corner of Eighth and Brannan streets, having a frontage of 160 feet on the former by 137 feet on the latter, and is five stories high. The first floor or basement is devoted to packing; on the second the melting of the raw sugsr is carried on; the third and fourth contsin the sugar after heing refined, and the fifth is devoted to the process of boiling. The method of refining is precisely similar to that already described as being carried on at the Bay Sugar Company's works, save that the sugar is melted below and is pumped up in a liquid state, to be boiled on the topmost story. The present capacity of the works is 120,000 pounds per day, but this will he doubled when the adjacent new refinery on Braunan street is completed. This is building of brick, will be 190 fcet long hy 90 feet wide, and five stories high like the old one. There are at present employed 105 hands in the process of refining, and 15 coopers engaged in making casks, etc., for the refined sugar. The President of the California Sugar Company, to whom the refinery belongs, is Claus Spreckles, Esq., one of our wealthiest and most enterprising citizens. The establishment under his charge is a monument to the industry and enterprise of San Francisco.

The San Francisco and Pacific Sugar Refinery,

Located at the corner of Eighth and Shipley streets, occupies, with its attendant store-house, with the kiln house, hone mill and cooper shop, the whole of the space hetween two streets, and forms a fine group of huildings, five stories in hight. Its capacity is 100,000 pounds a day, and it will be soon considerahly increased, as large additions are being made. It gives employment to 120 men, and consumes 600 tons of coal per month. The President is Mr. De Ro, nnder whose management the refining has been in every sense a success and has attained to its present prosperous position.

Resume.

The three refineries thus briefly noticed, employ 300 men and will soon have a capacity of over 400,000 pounds a day, and even then we are informed that they will not be able to do more than supply the increasing demand. Our sngars are now fiuding their way to Utah, Montana, and the neighboring territories; hence the necessity for the resumption of operations by the Bay Sugar Refinery, and the preparations to secure additional capacity of the others. The Sugar Refining interest stands prominently forward as a monument to the commercial enterprise and activity of our citizens.

A California Primrose.

ŒOTHERA WHITNEYI.

We give annexed an illustration of one of the most hesutiful of the primrose family—a nstive of Humboldt County, and first brought to the attention of botanists in 1867. It was named *Whitneyi* for Prof. Whitney of the Geological Survey, it having heen discovered by a member of the survey, (Prof. Bolander) while engaged in the prosecution of that work.

The plant grows to a height of twelve to eighteen inches, with oblong, lanceolate leaves. It throws up numeroue stalks, with a profusion of blossome of various shades of crimson, more or less dark, according to exposure to sun, fogs, or a clouded atmosphere; the best developed of which measure fully four inches across. The petals are heart-shaped, with apex downward, with dark crimson blotches ahout the center.

The accompanying illustration, which has been especially engraved for the Press, shows a full-sized flower, and also a reduced outline, exhihiting the habit of the plant. It grows on the low, hilly land in a dry light soil, and so far as we are informed, has not been noticed outside of Humboldt county.

The flower has a enbdued, very delicate odor, much like that of the more fragrant varieties of the lily family. It would no donbt form a most beautiful and valuable addition to our cultivated flowers, and might undouhtedly he greatly improved and rendered double hy carefnl cultivation. Even in its wild, natural condition, few annual plants exceed it in beauty. The seeds should he sown soon after the first rains, so that they may have an abundance of time to take deep root, to support them through the dry summers. They show hlosom from May to Septemher.

A CALIFORNIA PRIMROSE.

Quartz Claims.—An Associated Press dispatch, dated Sacramento June 27, says: There has been received at the United States Land Office here a decision hy Commissioner Drummond at Washington city. It was rendered on issuing patents to certain mining claims and town sites in Amador county, and doubtless will apply to all others. The Commissioner decides that the Act of Congress granting the sixteenth and thirty-sixth sections of public lands to the State of California for school purposes, does not apply to mineral lands, and that parties who have located mining claims with the view of purchasing under the law providing for tho sale of such lands, which may, after survey, be included in the sixteenth or thirty-sixth sections, are entitled to patents, the State having no interest therein. It is also decided that locators of quartz mining claims who have located under the statute providing for the sale of mineral lands and whose claims extend into tracts of lands located for town sites, are entitled to government patents, "hut that it will be necessary, in issuing the patents for the mines, to insert a special clause excepting and excluding from such conveyance any and all town property or municipal rights upon the surface ground so patented, snch as houses, huildings, structures, lots, blocks, streets, alleys, or other improvements not belonging to the grantee named in the patent, and all rights necessary or proper to the occupation, possession or enjoyment of the same."

Fossil Discoveries in Solano County.

Enitore Press:—There has recently been an interesting fossil discovery near this locality, of one more of those gigautic mammothe which in the olden time, clothed in flesh, must have msde the wilderness reverberate with the echo of their loud trumpetings. The fossile just diecovered consiste of one underjaw with the molar grinder entire; one upper grinder and psrt of another; some bones of the neck and hack; some pieces of ribs; part of one shinbone from the knee-joint down to the ankle; a piece of a tusk ahout one foot iu length and a great mauy pieces of different bones much broken up.

These fossils were discovered by a gentleman by the name of Allison, on his farm about three miles west of Rio Vista, in Solano county. The remains were found in a ravine where they had heen partly wsshed bare by the excessive rains of last winter. They were emhedded in the substratum of yellow clay that usually uuderlies the alluvium deposit of hlack adobe.

The bones evidently helonged to some huge mammoth, *Elephas Primagenus*. The piece of tusk is seven inches in diameter and must have been broken off at least six feet from the head of the annimal. The knee-joint is thirteen inches in its longest diameter. I have iu my possession one of the upper teeth that is 9¾ iuches on its grinding surface, and part is gono at that. The neck bonce are 7¼ inches in diameter. They are the hones of a very old animal, as evinced hy the tooth in tho under jaw being nearly worn down even to whero tho gums must ouce have heen.

Thore are prohahly more of tho bones that can he ohtained, aud Mr. Allisou says he will try to find the other tusk which may be iu a hettcr state of preservation.

How iuteresting it would be could we ouly look back at the coudition of the oarth iu tho far-distant past, when these huge mammoths aud mastodons roamed at will in vast herds unmolested by the presence or obstructions of man. How long ago that was it is useless to conjecture, as their remains have heen discovered under such peculiar circumstances as to warrant the belief that the ocean has rolled its stormy hillows over the land siuce they ceased to exiet upon it. W. R. Frink.

Rio Vista, June 18, 1872.

Changes in Lines of Freight Traffic.

Since the Washoe teaming traffic was ahsorhed by the Ceutral Railroad, there is probably no business of that character on tho Pacific coast so large as thst which has beeu carried on between Los Angeles and that vaet and rich mining rogiou, indefinitely known as the Oweus River Country. That region includes almost twenty miniug districts and a dozen growing towns. Tho carriage of supplies to, and of ore, lead and crude hulliou from them has attained large proportions within tho past three yoars, despite the fact that both had to be carried from 150 to 250 milos over a very rough country, and at extremely high rates of freight.

A press dispatch from Los Angeles of tho 15th ult. informs us that the owuers of the Owens Rivor freight lines aro making arrangements to change their hase from Los Augeles to the terminus of the San Joaquin Valley branch of the Central Pacific Railroad, over which passengers are now carried to Visalia, which is nearly 200 miles south of the main line at Lathrop. This change will divert considerable frcighting business from the line of southern coast steamers, which will now seek the chorter and cheaper inland rail and teaming route. The teamsters (one of whom alone employe fifteen huudred mulee) have changed from Los Angeles as a measure of self protection; hut the distance hetween Owens River Country aud the terminus of the railroads will each week be shortened as the railroad is extended southward, uutil eventually one fourth the numher of teams now employed will suffice for the business. It must not, however, be supposed that the remaining three fourths will be driven out of business, the extension of the railroad towards Arizona and the Colorado river will open and create business with many miuing districts which cannot now he worked—just as the building of the Central Pacific Railroad opened up great nnmhers of new mining districts in southern and eastern Nevada, and western Utah, thus giving employment to tho teams which formrly carried supplies to Washoe. There is, therefore, no fear hut that plenty of future work will be found for the teams which will he driven from present linee of freight traffic. The great work of mineral and agricultural development in the vast torritory is yet but in its infancy.—*Bulletin.*

Testing Bark for Tannin.—Make a decoction of the bark or wood, from a definite qnality of the material, and filter. Make a solution of galatin of a determined strength. Add of this to the liquor until no further precipitate is formed. Separate this precipitate, dry, and weigh. Knowiug the quantity of gelatin added, it is easy to calculate now the quantity of tannin. This will be found accurate enough for practical purposes.

Useful Information.

Composition of Patent Medicines.

A German has written a very interesting and nsseful book, on Secret or Patent Medicines, from which has been selected ths resnlt of analysis of a nnmber of the nostrums popular on this side of the Atlantic; and as many of our readers deal in snch articles, and should he familiar with ths composition of what they ssll, we reproduce the formula for their benefit:

Coca Pills, hy Sampson, New York. According to Hagar and Jacohsen, composed of powdered coca and extract of coca in about equal quantities; value, about one-fourth of price.

Eau de Cythére, a hair color restorer, consists of 4 chloride of lead, 8 hyposulphite of soda, 88 water. A similar composition was Eau de fees, which, a couple of years ago, was introduced here. The writer found in a aample also some alkalies, earths, and traces of nitric acid, originating probably in the spring or pump water used. Hagar and Jacohsen give tbe following formula: Hyposulphite of lead, 1¼; hyposulphite of soda, 3; glycerine, 7; water, 88 parts.

Granular Effervescent Citrate of Maguesia, hy Bishop, of London, consists nsrcly of hicarbonate of soda and tartaric acid.

Pommade des Chatelaines, a hair invigorator, consists of benzoinated lard and some volatile oils.

Hamburg Tea, by Frese & Co., of Hamburg: Senna, 6; manna, 3; coriauda, 1.

Magnesian Aperient, hy Moxon, of England, is, according to Sillier, anhydrous sulphate of magnesia, 31; carbonate of magnesia, 14; bicarbonate of soda, 30; tartaric acid, 25 parts.

Swedish Essence of Life, is made also in this country, nnder various names. As nsnally made hy apothecaries, it is a tincture made from 4 aloes, 1 agaric, 1 rhnbarb, 1 zedoary, 1 gentian, 1 myrrh, 1 theriac, with 100 to 120 dilnte alcohol. The secret medicine mauufacturers nsnally substitute cheaper articles for the high-priced saffron aad rbnbarb.

Syrup of Horseradish, by Grimault. Hagar gives the following directions: 50 p. each of fresh scurvygrass, bnckbean, and watercress; 60 of horseradish, 40 of fresh orange berries, are infnsed with 3 cinnamon in 50 p. white wine, and after a day expressed; 250 p. sugar are dissolved in the filtrate.

Iodinized Syrup of Horseradish, by Grimault, contains 10 iodine, and 5 potassium iodide in 8,000 of the former.

Myrrhine, by J. B. George, of Paris, for the preservation of the teeth: Glycerine, 38, myrrb, 7, arrowroot, 5, chalk 54, oil of cinnamon 1 part.

New York Pills, hy Sampson, of New York. The 1¼ grain pills consist of powdered coca 25, extract of coca 30, and powdered iron 35 parts.

Opiato pour les Dents, by Pinand. Syrnp 70, chalk 21, gypsum 7½, magnesia 1½, colored with aniline red, containing arsenic, and flavored with oil of cloves, and of spearmint.

Brandreth's Pills, contain resin of podophyllum, inspissated juice of poke berries, saffron, cloves, oil of peppermint.

Holloway's Pills are composed of aloe, myrrh, and saffron.

Morrison's Pills, 2¼ grains each, consist of aloe, cream of tartar and colocynth; another kind contains the same ingredients, besides gamboge.

Radway's Ready Relief, according to Peckolt, is an ethereal tincture of capsicum, with alcohol and camphor.

Radway's Renovating Resolvent, a vinous tincture of ginger and cardamon sweetened with sugar. (Hagar and Jacobsen.)

Pondre Hémostatique Végétal, by Bonnatour, consists of 4 resin, 1 gum arabic, 1 wood charcoal.

Poudre Uniqne, by Godernaux, of Paris, lauded as a specific against epilepsy, is impure calomel, leaving when heated a slight reddish residue.

Oil of Horse Chestnuts, by E. Genevoix, of Paris, is not the oil of the horse chestnuts, but another non-drying oil, altered by heat so that it has acquired a darker color, a pungent odor and acrid taste.

Screws Inserted in Plaster Walls.—When we try to fasten brackets, strips of wood, etc., to plaster walls by means of screws, it is often found impossible to make the screws hold firmly. When we turn them in, the plaster breaks out and our labor is in vain. And yet, a screw well set into a plaster wall, will hold very firmly. When a screw has broken out and it is necessary to make it hold in that particnlar spot, the best plan is to enlarge tho hole to about twice the diameter of the screw, fill it with plaster of Paris, such as is used for fastcning the tops on lamps, etc., and bed tho screw in the soft plaster. When the plaster has set, the screw will be held very strongly.

Varnish to Imitate Ground Glass.—To make a varnish to imitate ground glass, dissolve 90 grain of sandaric and 20 grains of maetic in two ounces of washed methylated ether, and add in small quantities, a snfficiency of benzine to make it dry with a suitable grain—too little making the varnish too transparent, and excess making it crapy. Tho quantity of henzine required depends upon ite quality—from half an ounce to an ounce and a half, or even more; but the best resnlts are got with a medinm quality. It ie important to use washed ether, free from spirit.

Old Rubber.

A fortune awaits the happy inventor who shall teach manufacturers to restore old rubber to the condition in which it was before vulcanization, for with that secret, there would bs practically *no consumption* of this invalnahle article. The thing has been dons, and successfully, and we have ourselves seen pieces of vulcanized rubber, possessing great strength and elasticity, which were made entirely from old car-springs; but it has never hoen accomplished on a large scale, and awaits the enterprise and ingenuity of some new Goodyear to develop it.

Meantime, old rubber has its nses. By a system of steaming and passing between rollers, it is reduced to a semi-plastic state, and in tbis condition is nsed in combiuation with a coarse fabric for heel stiffening, a purpose to which it is admirably adapted, its waterproof qnalities being of especial valne. There is in a neigbboring city a factory devoted entirely to this branch of manufacture, where several hundred tons of old rubber of all kinds are consnmed annually.

Old rubber is also largely nsed to mix with new raw material in the manufacture of all kinds of rubber goods. It serves to give bulk and weight, and, if it does not increase, it certainly does not lessen the strength of the fabrick. It may also be mentioned that powdered soapstone, white-lead, terra alba, and otber heavy substances enter largely into the composition of almost all rubber goods, the nse of which becomes apparent when it is remembered that they are generally sold hy weight.

Cocoa-nut Oil.

Residents of temperate zones have no realization of the immense importance of the cocoa-nut in countries where the tree abounds. It yields a delicious food, a nntritions drink, a rich oil, and fibers which are manufactnred into thread, twine, ropes, and all kinds of strong useful cordage.

Boiling the pnlp breaks open the cells. As the oil is liberated, it rises to be skimmed off. A few years ago the Dutch government ordered a census of the cocoa-nut trees in Java and Madeira, which footed up twenty millions, being an average of three to every native inhabitant.

Vast qnantities of the oil are burned in lamps throughont the whole Indian Archipelago. A tumbler half filled with water has oil poured in to the brim. Two lighted sticks are tbe wicks, which burn brilliantly. Every native glories in a display of lamps in the honse and abont the grounds at the approach of night.

When first taken out of the boiling pot, the oil has a rich flavor, but soon becomes rancid. So copions is the supply, however, it can always be had fresh and sweet for the table. Like olive oil in Syria, it is butter, lard, or oil, according to circnmstances, in cookery. Soap is made with it, lamps snpplied, leather dressed, and cosmetics are fabricated for hsautifying the homely faces of women.

Something About Anvils.

In a deserted shop in Pittsfield, Mass., there rests on its block an anvil that has done duty for more than three hundred years. It is as sound to-day as it was in 1633, when Eltwood Pomeroy, after welding for the Stuarts the ponderons horseshoes of the same style and pattern that his ancestors had made during generations for the Tudors and Plantagenets, grew weary of taxes without law, and work without wages, and anvil in hand sailed for the new world. A deft workman, he throve in the settlements, and left his anvil as an heirloom to his descendants. They show you in the tower of London the anvil on which the sword was forged that Richard *Cœur de Lion* nsed in his contest with Saladin, and at tho collection of Pompeian excavations in Naples there is an anvil certainly older than the Christian centuries, which, of precisely the same shape we use, had evidently done service for stalwart workmen of many generations before the city was buried. But, better still, in the Egytian room of the British Museum, there is a veritable anvil of the Pharaohs. It is older than Rome, older than Greece, older than Jerusalem; as old as the days of Abraham, and probably in existence when the patriarch "was come into Egypt, and the Egyptians beheld Sarah that she was very fair." It is just like a modern anvil, mado apparently in the same way, weighing about seventy-five pounds, and sound as it was when strnck by the hammer thirty centuries ago.

Ether Glue.—An excellent liquid gluo is made by dissolving glue in nitric ether. The ether will only dissolve a certain amount of glue, consequently, the solution cannot be made too thick. The glue thus made is about the consistency of molasses, and is doubly tenacious as that mado with hot water. If a few bits of india rubber, cnt into scraps the eize of buck shot, be added, and the eolntion be allowed to stand a few days, heing stirred frequently, it will be all the better, and will resist the dampness twice ae well as glne made with water.

The hair on a camel weighs abont ten pounds and eells for more than $100.

Good Health.

Weak Backs and Bad Seats.

Tho small of the hack is the weak or etrong point of every person. It is ths center of volnntary motion. Nearly three bnndred mnscles are directly or indirectly connected with the motions of which the small of the back is the pivotal center. Henco, while tbose who are strong, and whose muscnlar systems ars well balanced, know nothing of spiral weakness or vertebral distortion, invalids are forever complaining of this part of the body.

One very prominent cause of weak backs and crooked spines is the unhygienic, nnanatomical seats and benches of our school-houses, churches and halls; nor aro the seats and heuches provided on steamboats, railroad cars, or at stations or ferry houses any better. It it is impossible for any person to occupy these seats long without being torced ont of shape. And when school children aro confined to them for several honrs a day for month and years, tbeir backs will inevitably be more or less weakened, with corresponding deformity of body, for life.

If we go into private families, even into the palaces of the opnlent, we find the seats made more for show than for nse. Girls snffer much more by nsing such seats than boys, for the reason that hoys are tanght to rnn, jump and exercise tbemselves all over and all through, while girls are expected to keep still and be pretty.

It is certainly one of the strange problems of the nineteenth century that no parent, teacher or mechanic will give any attention to anatomy or physiology in the construction of seats for the human body. Must our chairs, and sofas, and settees, and divans, and *tete-a-tetes*, and pews forever be dictated by fashion, and never conformed to nature? Mnst our tortnred bodies forever be compelled to shape themselves to the seats, instead of the seats being adapted to our bodies? Go through all the great chair factories of the country, and yon will not find a single article that is not pnt together in gross violation of the rnles of health or comfort. If some Cooper, or Peabody, or Stewart, or Vanderbilt, or Astor, would invest a little million of dollars in establishing an immense chair factory "on strictly hygienic principles," he would do more to improve human health, promote longevity and remedy the backache, than any medical college in tbe land.—*From "Backache," in Science of Health.*

Physical Development in Old Times Compared with Our Own Day.—Mr. T. W. Higginson has taken pains to compare the vital statistics of several generations of two old New England families, he finds, to the dismay of those who mourn the physical degeneracy of women since the days of our great-grandmothers, that the stock has improved if anything. He adds:

"No man of middlo age can look at a class of students from our older colleges without seeing them to be physically snperior to the same nnmber of college boys taken twenty-five years ago. The organization of the girls being far more delicate and complicated, the same reform reaches them less promptly, but it reaches them at last. The little girls of the present day eat better food, wear more healthful clothing, and breathe more fresh air than their mothers did. The introduction of india-rubber boots and water-proof cloaks alone has given a fresh lease of life to multitudes of women who otherwise would have been kept housed whenever it so much as sprinkled. It is desirable, certainly, to venerate our grandmothers, but I am inclined to think on the whole that their great-granddaughters will be the best."

Clay Dressings for Variola.

Dr. E. S. Bunker, in a note to the *Medical Record* says:—"During the recent epidemic I used clay-dressing for two pretty decided cases of confluent smallpox. Both patients were yonng women. One, a married lady, aged 23 (delivered on the second day o' a six months' fœtus,) made a fair recovery, took cold after getting up, and in a few days died suddenly of empyema and pericarditis; diagnosis confirmed hy autopsy. The other, single, agsd 21. had the disease with great violence, recovered rapidly, and is now well. In each case I dusted finely sifted pipe-clay over the face as soon as the pustules became fairly developed. This formed immediately a clean, dry, wholesomo scab, abolished the intolerable itching and burning, served apparently as a good absorbant of infectious material, and scaled off during convalescence, leaving underneath a soft, natnral integument. There was no disfigurement in either case."—*New York Medical Journal.*

State Boards of Health Recommended.—Governor Geary, of Pennsylvania, recommends to the Legislature the formation of a State Board of Health, on a plan similar to that of Massachusetts and of California, which were the first States to organize snch Boards. The Governer was a member of the first Board of Health constituted on the Pacific coast. This was during the prevalence of cholera in San Francisco in 1850. We opine that before many years shall have passed by, nearly every State in the Union will have its State Board of Health.

Fevers and Sewers.

Notwithstanding the generally acknowledged deleterions influence of defsctive sewers, it seems to be a well-established fact that men employed to cleause and repair sewers, etc., are not only not carried off by fever but appear to bs singularly exempt from the ravages of that dissase. Ths British *Medical Journal*, of a late date, says that in consequsuce of what has been said with regard to ths alleged causs of tbe late illness of the Prince of Wales, Dr. Bowers, of ths Mstropolitan Board of Works of London, ordered a return on the subject, which presents a most unexpected array of facts which *seem*, at least, to controvert the generally received views with regard to the connection of fevers with imperfect sewerage. We copy as follows:

Ont of five inspectors employed from 23 to 48 years, there has never heen a case of fever. Out of 64 men employed in cleansing and flnshing the northern sewers for periods varying up to 34 years, only two have had fever, and their cases were typhus. Out of 47 men engaged in the sewer work in the southern sewers for periods varying from one to 24 years, there have only been two cases of fever, and theso again typhus; and in one of theso cases it is shown that the disease was contracted from the man's family. There are 36 penstock and flap keepers who have been employed from one to 50 years. Of all these only one had any fever. Ho bas been 16 years at work and had typhoid in 1862. There are some curions notes about tbese men. One of tbem has been at this work 50 years, and has not had one day's illness of that time. One lived 25 years in the sluice-honse over tbe King's Scholars Pond sewer, but never had any fever. Another lived for 14 years in Penstock Honse, over the ontfall sewer at Old Ford. Another lived 32 years in Great St. Paul's sluice-honse. Another lived for 35 years in a house over Duffield sluice, and enjoyed good hsalth. Out of 54 msn employed at the pnmping-stations, thcre has only heen one case of typhoid fever. At Crossness, ont of 54 men engaged during the last six years, there has not been one case of typhns or typhoid.

There have been eight cases of ague, bnt theso are, of conrse, due to the low marshy district and they seem to have recovered rapidly. Out of seven men employed in cleansing ventilators, oiling side entrances, gauges, etc., no caso of fever has occurred though one man has been at the work 23 years. Of ten surveyors and chainmen in the engineer's office, not one has ever had typhoid fever, although they have been almost daily engaged in the sewers for periods of from four to 24 years. These facts aro very gratifying, and qnite dispose of the allegation that the men in the sewers are decimated by fever. The statistics show, in fact, that fever is less prevalent among these men than the rest of the town population.

The Prevention of Small-Pox.

Dr. A. Armstrong, in the *Lancet*, advises the following means in staying the ravagss of small pox: Persons suffering from the discase should daily anoint their bodies and limbs throughont with carbolized oil; and also wash their bodies thoronghly with soft water, slightly carbolized; the anointing to be performed after the whole person has been washed; and gently dried with some soft fabric. This process shonld be commenced before patients are allowed to leave their sick room, and continued until snch time as all the diseased skin has been removed, and a new and healthy one formed. In this way the particles of diseased and desquamated skin are prevented from being set free from persons who have recently suffered, and contaminating healthy persons by being inhaled or deposited on the exposed skin, or by getting into the water or food, and thns be a mode of contagion.

Chapped Hands.—Persons troubled with chapped hands will find the following receipts very good: Take a qnarter of a pound of unsalted hog's lard, and work it well throngh clear cold water, then drain and work again in a wineglassful of rose water; the yolks of two fresh eggs, and a tablespoonful of honey. When well worked together in an earthen dish, mix in gradually as much finely powdered oat-meal as will make a paste the consistency of new butter. For use, spread the mixture on the hands at night, cover with old gloves too largo for the hands; and in the morning wash off witb pure water.

Another cure for chapped or blistered hands: Take a wine-glassful of sweet olive oil, three drachms of grated spermaceti, three drachms of grated gum-camphor, and three drahms of grated whito beeswax. Mix together and put in an earthen vessel over a slow fire, stirring till all are thoronghly melted, with a wooden spoon or stick. When well mixed plunge the jar snddenly into cold water, and the mixture will form a white cake. At night rnb the cake over the hands well, cover with kid gloves, and wash off in the morning in lukewarm milk. A few applications will cure the worst chapped or blistered hands, and if the hands are positively sore, the mixture may be applied two or three timee during the day, keeping on the glove until the cure ie effected.

MINING AND Scientific Press.

W. B. EWER.....SENIOR EDITOR.

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ILLUSTRATIONS AND REPORTS OF MINING ENTERPRISES WANTED.—Drawings or photographs of mining works that are of general interest to our readers are solicited for publication in this journal. Official reports of Companies, and description of mines of importance, or of special interest, are also desired. Sketches of any new method and discoveries will be very acceptable.

San Francisco:

Saturday Morning, July 6, 1872.

Gold and Legal Tender Rates.

SAN FRANCISCO, Wednesday, July 3, 1872.—Legal Tenders buying, 88¼; selling, 89. Gold in New York to-day, 113¾.

Table of Contents.

ILLUSTRATIONS.—Remington's Breech-Loading Rifle. Page 1. A California Primrose, 6. Coast Surface and Scenic Geology, 9.

EDITORIALS.—San Francisco Enterprises—Our Sugar Refineries, 6. Vol. XXV, 8. Academy of Sciences, 9.

CORRESPONDENCE.—Heavy Mine Blasting in Dutch Flat; Observations of a Practical Miner; Hydraulic Mining with Slight Fall; The Eureka Grinder and Amalgamator, 2.

SCIENTIFIC PROGRESS.—Maple Sugar—Its Formation; Spectrum of the Zodiacal Light; Electrical; Artificial Water Lime; Vegetable Source of Carbolic Acid; Chemical Action in Porous Filters, 3.

MECHANICAL PROGRESS.—The New Mode of Conveying Compressed Air as a Motor; A New Invention; A New Building Material; Salts of Copper a Preventative Against Mould; Steel Rails; Chicago Concrete; Pigments for Coating Iron; Drying Lumber by Steam, 3.

MINING SUMMARY.—Reports from mines in various States, Counties and Districts; Stock Reports; Leather and Metal Markets; Mining Shareholders' Directory, 4-5.

USEFUL INFORMATION.—Composition of Patent Medicines; Screws Inserted in Plaster Walls; Varnish to Imitate Ground Glass; Old Rubber; Cocoa-nut Oil; Something About Anvils, 7.

GOOD HEALTH.—Weak Backs and Bad Seats; Clay Dressings for Variola; Fevers and Sewers; The Prevention of Small-Pox; Chapped Hands, 7.

DOMESTIC ECONOMY.—Real Lace—How to Wear it and How to Clean It; Strawberry Syrup; A Chapter on Eggs; Hygienic Bill of Fare; Good Harvest Drink; Cream Beer; How to Cook Potatoes; Uses of Paper; Selected Receipts, 10.

MISCELLANEOUS.—Monday as Pay Day, 3. Fossil Discoveries in Solano County; Changes in Lines of Freight Traffic, 6. Bullion Receipts for 1868-69-70 and 71, 9.

FOURTH OF JULY.—On account of the 4th coming on Thursday—a day on which we never mean to do much work if we can help it—this issue goes to press one day in advance of its usual time of publication.

VINE-GROWERS FAIR.—The Fair of the California Vine-Growers and Wine and Brandy Manufacturers Association, will be held in Sacramento in connection with the State Fair, commencing the 19th of September, and continuing until the 28th. Two thousand dollars is offered in premiums ranging at about fifty dollars each. By an advertisement in another column it will be seen that the association will hold a business meeting at Sacramento, on the 25th of July, and that the attendance of all interested is requested. All wine-growers should be present to assist in forwarding this great industry.

PLACERS.—A dispatch states that a company is now beginning a ditch on the placer mines commencing one and a half miles from Bakersfield, Kern county. The work commences six miles above town, and it is said that the bars and banks prospect well for some miles.

METEOROLOGICAL.—The mean range of the barometer for the mouth of June in this city was 29.99 inches; the mean temperature was 59°; the prevailing wind was from the southward; and the hottest day was the 21st, when the thermometer stood 79° in the shade.

COTTONWOOD CANON.—Thousands of tons of ore are being daily freighted from Little Cottonwood to smelters on the railroad since the opening of the wagon road.

Volume XXV.

With the present issue we commence a new volume, and again resume our former title of MINING AND SCIENTIFIC PRESS. The prefix of "MINING" was dropped some two years ago, in consequence of the large amount of agricultural matter which we thought best to give in answer to the earnest call for such information, from that portion of our readers engaged in farming. With the increased circulation of the PRESS, and the constantly increasing demand for agricultural information, we were subsequently induced to issue a special agricultural edition, and finally an independent journal which was started as the PACIFIC RURAL PRESS, and which still continues to represent the agricultural interests of the Pacific Coast, as the SCIENTIFIC PRESS does the mining interest. Under these circumstances it has been thought both proper and advisable to resume our mining prefix, which will hereafter be permanently retained.

It will also be noticed that we have been gradually changing the size of type for our reading columns—the bourgeois, heretofore used being replaced by brevier, which is a smaller type and which will admit of a very material increase to the amount of reading matter which we shall hereafter be able to give. It is also the intention of the proprietors to furnish more original engravings than heretofore. This we are enabled to do from the fact that the PRESS, within the last two years, has been greatly strengthened financially, and has become more widely known to the mining and scientific world, both on this continent and in Europe.

As a mining journal, in close communication with practical miners everywhere, and located in the commercial center of the most important mining region on the globe, we have the leading position, and intend to make the MINING AND SCIENTIFIC PRESS the leading mining paper of the world. To this end we have various improvements in view, which will be developed, from time to time, as circumstances may require.

The mineral resources of the Pacific Coast, great as they already appear in their unparallelled richness, remarkable variety and extent, and greatly as they have astonished the world, are yet only in the infancy of their development. With the improved appliances now being introduced, and the experience gained by over twenty years of labor and experiment, our people are now better than ever able to grapple with the difficulties and intricacies of mining. Our mills and machinery are built better and cheaper; mining explorations are carried on more systematically and more intelligently, and an increased confidence is apparent on the part of both the miner and the capitalist. Foreign capital and skill is rapidly coming in to take up and carry on to successful issue the incipient developments of our hardy and persevering prospectors; while furnaces of the most approved construction and management are rapidly multiplying all through the silver regions, to utilize the thousands of tons of ore which have heretofore presented but useless heaps of rubbish, or been left to rest in the hidden recesses of the mine for the lack of means and enterprise to extract therefrom the precious metals.

In addition to such precious metals, the unlimited quantity of coal, iron, copper, lead, etc., with which our mountains are known to abound, are also fast being brought to light and utilized. Lead is already beginning to form an important article of export, while our home needs are entirely supplied from our own mines.

With the improvement of business generally, and the late important advances in the price of iron and copper, attention is being once more turned to the production of those useful and important metals, which are found in the greatest profusion, and of the highest percentage in many localities on the Pacific Coast.

Discoveries of coal are also constantly being made, not only in the Coast Range, but all through the great interior basin between the Sierra Nevada and Rocky Mountains, and in many places in near proximity to the mines of the useful metals, or to our principal railroads, by which the two can be cheaply brought together for reduction and utilization.

With such a field before us, and in a community where every class of valuable industrial information is sought for with an earnestness no where else witnessed, it would be a matter of surprise indeed, if a journal, devoted to the great leading interest of the State, and to its mechanical and industrial pursuits generally, should not meet with a generous support and encouragement.

As heretofore, the miner will find in our columns, and carefully digested, every class of information which will be useful to him in his laborious and precarious calling. Increased attention will be paid to our mining summary and stock reports, and no effort will be spared to render the PRESS useful, instructive and advantageous to persons engaged in any of the industrial pursuits of the day. Early and full reports of new inventions and discoveries in art, and science will be given in our columns, and the most useful, practical information in all the industrial walks of life will be weekly summarized and placed before our readers. With these purposes well and truly carried out, we feel assured that our efforts will not be without avail or profit to our readers, in adding to their general stock of useful knowledge.

Our readers can be of great service in adding interest to the PRESS by furnishing us with such useful facts as may come under their observation. They can also largely aid in extending its circulation and usefulness, by calling the attention of their friends to its worth and importance, and by sending it abroad, to the Atlantic States and to Europe, to such persons as they may think would be interested in its perusal, or desirous of acquiring the class of information which its columns contain. No better paper can be found to send to the "old folks at home." It would be much preferred there to the papers filled with light or sensational reading which are usually sent. The commencement of a volume is a good time to subscribe.

With these remarks we enter upon a new volume, with renewed confidence that our labors will not only be fully appreciated but duly rewarded by a generous and appreciative public.

Bullion Receipts for 1868-69-70-71.

The weekly *Stock Report* of June 21, contains a tabulated statement of the yield of thirty-one mines, which are now in operation, which shows conclusively the wonderful advance in mining operations during the past few years. We annex a statement of the totals for the past four years, and would call especial attention to the large increase of 1871 over the previous year:

COMPANIES.	TOTAL. 1871.	TOTAL. 1870.	TOTAL. 1869.	TOTAL. 1868.
Amador	.....	$310,479	$666,421	$554,832
Belcher	1,199,134	194,883	18,313	.....
Buckeye	29,977	.....	.....	.....
Chollar-Potosi	2,072,011	2,627,938	1,371,195	.....
Crown Point	1,982,030	241,207	101,522	1,092,963
Confidence	.....	.....	18,889	107,315
Caledonia	183,486	73 975	.....	.....
Eureka	463,96	633,228	568,210	.....
Eureka Consolid'ed	1,377,865	.....	.....	.....
Golden Chariot	.....	484,599	255,309	.....
Gould & Curry	47,032	678,186	251,658	46,267
Gold Hill Quartz	42,583	17,110	64,203	101,553
Hale & Norcross	320,258	1,708 281	1,043,818	387,829
Imperial	20,862	163,259	230,941	686,031
Jackson	68,286	.....	.....	.....
Kentuck	151,847	163,742	826,292	1,254,516
Hope Gravel	33,404	.....	.....	.....
Meadow Valley	1,753 863	.....	.....	.....
Ida Elimore	.....	238,532	.....	.....
North Star	224,757	.....	.....	.....
O ll Treasure	18,798	.....	.....	.....
Overman	187,746	392,673	326,466	332,167
Phen x	35.439	.....	.....	.....
Pioche	203,573	.....	.....	.....
Raymond & Ely	1,310,399	.....	.....	.....
Oneida	128,313	.....	.....	.....
Savage	1,043,512	291,12	1,162,857	2,554,526
Sierra Nevada	147 071	220,287	157,354	21,567
Segregated Belcher	69,910	73,975	.....	.....
Succor	134,061	.....	.....	.....
Yule Gravel	45,239	.....	.....	.....
.....	.....	.....	.....	.....
Totals	$13,365,210	$8,493,475	$7,063,447	$7,129,568

QUICKSILVER.—The New York *Tribune* of June 18th in referring to a new contract with the Quicksilver Company says:—"In the miscellaneous list there was a further break, despite the contract last night concluded between the New Almaden Quicksilver Mining Company of the first part, and Eugene Kelly & Co. of the second part, by which the former sell to the latter the entire product of the mine during the year ending April, 1873, for $50 gold per flask. Last year the company got for its quicksilver only $31 per flask, under a contract with the Bank of California. The product this year, it is estimated, will be about 25,000 flasks."

THE SAN FRANCISCO BRANCH MINT.—The Branch Mint in this city during the fiscal year ending June 30th, coined $18,745,500. Of this $17,400,000 were in double eagles; $198,000 in eagles; $127,000 in half eagles; $65,000 in quarter eaglee, making a total of gold coinage of $17,790,000. The silver coinage amounted to $955,500, of which $883,000 was in half dollars; $12,750 in quarters; $36,000 in dimes; and $23,750 in half dimes. This report shows a decrease of $75,000 in gold coinage from last year, and an increase of $204,000 in silver, making a total increase of $129,000.

List of Pacific Coast Patents.

The following re-issue is the only patent issued for Pacific Coast Inventors, for the week ending June 18, 1872:

CHAIN-ELEVATOR AND BUCKET.—John A. Ball, Grass Valley, Cal.—Patent No. 96, 866, dated November 16, 1869.

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co's. MINING AND SCIENTIFIC PRESS, American and Foreign Patent Agency, the following are worthy of mention:

IMPROVED GRAIN CLEANER.—John H. DeForce, Healdsburg, Sonoma county, Cal. This grain cleaner is intended more particularly to be used in mills, for the purpose of thoroughly cleaning wheat previous to its being ground into flour. It consists of a peculiarly constructed pipe or spout, through which air is drawn by a fan. The grain is delivered into a vertical spout at the end of the spout or pipe opposite the fan, so that the chaff and lighter grains will be drawn by the suction produced by the fan, through the pipe, while the heavier and larger grains on account of their superior specific gravity, will fall upon a series of separating plates or screens where the chest and barley are separated from the wheat.

MACHINE FOR PAINTING WIRE CLOTH.—Samuel Graves, San Francisco, Cal. This machine is intended to be used for painting wire cloth, such as is manufactured in strips of considerable length and afterwards rolled in the manner of forming rolls of ordinary cloth. It can also be used for painting or coating any other fibrous material, such as cloth, where such a process is required. The usual manner of applying paint to wire cloth is by means of brushes, which renders the process very tedious, especially so as it requires great care to prevent the meshes of the cloth from becoming filled with the paint, where it will dry and not only injure its appearance but the utility of the cloth. In this machine the cloth is passed through a bath of paint or other mixture so that it will be covered, and afterwards passed between elastic rollers which will press out all the superfluous paint which has lodged in the meshes, and leave the wires with a proper coating of paint to protect them. The machine consists of a box in which the paint is kept; proper mechanism is provided for stirring the paint in order to prevent it from settling or becoming thick. India rubber or other elastic rollers are secured above this vessel so that the cloth can be carried up directly between them. Upon each side of these rollers are fixed hoppers or troughs which receive the superfluous paint which the rollers take from the cloth, and direct it back to the main vessel or tank.

The Text of Interesting Decisions in Patent Cases.

DECISIONS OF THE COURT.

BENJAMIN O. TILGHMAN vs. G. F. MORSE.—In Equity. Decision rendered February 17, 1872.

PATENT OF BENJ. C. TILGHMAN, FOR CUTTING AND ENGRAVING STONE, GLASS, METAL, ETC.—ANALOGOUS USE.

The process described in letters patent to George F. Morse, November 21, 1871, for an "Improvement in ornamenting and dressing glass and metal surfaces," held to be an infringement of the first claim of patent of Benj. C. Tilghman October 18, 1870, which is "the cutting, boring, grindiug, dressing, engraving and pulverizing of stone, metal, glass, pottery, wood, and other hard and solid substances by sand used as a projectile, when the requisite velocity has been artifically given to it by any suitable means."

The term "artificially," as used in this claim, covers the falling of sand through a vertical tube high enough to enable it to acquire sufficent velocity to do its work.

A party defendant manufacturing under his own patent held to infringe plaintiff's patent, notwithstanding he had in his specification disclaimed the invention covered by said plaintiff's patent.

Tilghman's invention consists in the discovery that a stream of sand driven with sufficient velocity to cause the grains of sand through their own momentum to act as projectiles against the articles to be cut or dressed, will do the work effectually without any vehicle to carry the sand into contact with the article, and without any contact between anything and the article except the sand.

Such invention held not to be anticipated by a process in which sand or emery was rubbed against the surface of the article to be cut or dressed, by means of the wires of a revolving wire brush; nor by the well-known fact that any solid or liquid material, falling continually upon any surface, would wear it away.

Held, also, not to be anticipated by the use on locomotives of a stream of sand combined with a jet of steam, to drive cows from the track. No one, from observing the temporary operation of the process on the animal, would infer that by the same means he could produce the results which plaintiff describes. There is no resemblance in kind between those results and the results produced upon the animal.

Coast Surface and Scenic Geology.

At the last meeting of the Academy of Sciences, held on Monday evening, July 1st, Amos Bowman presented and illustrated by blackboard delineations, several noteworthy points, defining and establishing recent remarkable geological changes. The process by which San Francisco peninsula, and the Contra Costa and Alameda hills and valleys become dry land, was shown to have been simple, gradual and commonplace, but to be still going on. It was not one of sudden violence. From the salt marshes to the mountain tops, everywhere, are found systematic evidences, in the loosened material, the gravels and sands on the surface of the older rocks, to which geological attention has hitherto been most particularly directed, of the ocean's presence in successive stages, and in very recent times. What were islands once among the hills and valleys of California, now farmed and populated, were traced, — and can be further traced by the reader, — by the following line of facts. We copy from several of the diagrams.

We may see with our own eyes, Mr Bowman remarked, the birth and creation of the coast counties and California valleys. The rock we rest upon on a Sunday excursion to SanBruno Mountain imparts to us in an hour its hoary wisdom, and our life (imaginatively) is made to begin with its experience. Mr. Bowman first drew a sectional view of San Francisco peninsula, to show the situation and significance of the San Francisco Pliocene hills. The scope and scenery of this section of country can be well studied (as remarked), from the older San Bruno mountains, a point easy of access in an hour from the city; but to get to the Pliocene hills themselves, that are, of course, under water from that island standpoint, one must go to School House station, and drive three miles along the Laguna road to the southwest.

FIG. 1. PROFILE VIEW OF S. F. PENINSULA, AS SEEN FROM DECOTO. LENGTH, 26 MILES.

Any one would on attaining the divide here, in full view of the Pacific, observe a peculiarity in the scenic outlines of the hills. The geologist suspects "a formation." A broad palpable plateau, yielding the Italian renter easily won potatoes, lies at your feet in the glory of the afternoon sun of the Pacific, tinctured by fairyland clouds in the far west.

All the highest hills, some 700 feet above the sea, within five miles radius of this point, are Pliocene. The abundant fossils in them, as determined by the Geological Survey, tell the story. They were of the period just preceding the creation of the species of mammalian animals now living, for the mammalians associated with the former are all of species extinct; that, in short, being what Pliocene means.

The San Francisco Pliocene and its subordinate terraces, down to the recent valley and the salt marshes of the sea of to-day, were next portrayed by a birdseye sketch, as they might be seen from a point half a mile in the air above Goat Island. The same can be recognized from Oakland wharf, or anywhere along the railroad thence to San Leandro, in a favorable afternoon light. What was most remarkable in this, was the testimony it bore of the exceeding regularity and simplicity of the movement upward, whereby the waters of the sea were caused to depart. The terrace lines showed unequal movement, though sagging a little about the road from San Mateo to Spanishtown, and southward rising again up into the redwoods near the summit of the peninsular ridge, opposite San José.

Wave-worn beaches and flats on the Mission hills overlooking San Francisco, show the continuations of the Pliocene sea levels to our very doors. The terrace in the San Bruno mountains which gives scenic individuality, in the soft blue distance as seen from San Francisco is not as might be expected, of detrital material, but of rock as hard as the Pliocene. It appears to be a terrace of marine abrasion, rather than of subaqueous deposit and to belong to the older day of the San Bruno mountains, the Cretaceous. Only fossils, or a study of continuations of formation, can tell us the truth in such a case.

The remaining peculiar surface and scenic features of the vicinity of San Francisco are found in the channels of subaqueous erosion, like that continuing from the Mission Dolores through the New Park to the ocean. These were minor Golden Gates when our city hills and Lone Mountain were Alcatruzes, long after the close of the Pliocene. It is an open question whether the elongated and level sandy benches, similar to that found on the north side of Lone Mountain, half way to its top, are ascribable to Neptune or Ventosus.

What is told of themselves by the hills of Alameda, Livermore Valley and the Diablo range in general, in this connection, embracing the history of the San Joaquin and Sacramento valleys, was further dwelt upon, and discussion followed, in the course of which Prof. Davidson, Mr. Stretch and Prof. Bolander contributed interesting facts. The substance touching continuations into the interior will be alluded to next week.

Academy of Sciences.

The regular semi-monthly meeting of the Academy was held July 1st, Professor Davidson in the chair. Messrs. Benjamin Smith, Jas. R. Findlayson and Alexander Austin were elected members of the Association. A number of plants and a collection of minerals from Pioche, Nev., were received from F. E. Durant. A short paper on the

Silver Mines of Pioche

Accompanied the latter donation. The mines are situated in veins running in an easterly and westerly direction. The veins are of different characters. The Meadow Valley, Pioche, Raymond & Ely and Washington & Creole appear to be in veins with a bifurcation or two veins crossing each other. This was explained with a diagram. Higher in the hills are two other veins about 18 feet apart. Their general direction is also east and west. On these second veins are situated the American Flag, Arkansas, Chapman, Huhn & Hunt, Desdemona, Ivanhoe, etc. Further east is the vein of Peavine, running north and south. All these veins are enclosed between walls of very hard stratified quartzite which is generally colored by peroxide of iron. The veins, which are nearly vertical, cut the stratification at right angles; but the convulsions which have produced this fissure have lifted one side, as the planes of stratification do not correspond across the vein. In some places the quartzite is covered by micaceous slate, which lies in inconformable stratification.

Here this slate is a very thick formation of stratified crystalline magnesian limestone. The line of contact of the slate and limestone contains a great amount of metallic oxides (iron and manganese,) hematites, manganite, pyrolusite, etc. The silver veins of Pioche are generally very regular. They are encased in hard rock, requiring very little timber, and there is no water in the mines. The deepest worked mine is about 500 feet below the surface. In the superior parts, the ores are chloride of silver mixed with crystalline quartz, but generally the ores are carbonates of lead containing silver, (very likely in the state of sulphuret of silver.) The oxide of iron of a light yellow color is common. In some places, as in the Burke mine, the ore is chiefly galena, and sulphuret of lead. In the deep works of the Meadow Valley, malachite is abundant. In all these mines the gangue is quartz but the oxidation of the metallic sulphurets has destroyed its cohesion, and this quartz is now very easily crushed. A specimen of

Yerba Buena

Was received, which the donator said was called in Washington Territory, wild tea. The Indians say it is excellent for the blood, and speak of its virtues in glowing terms. The hunters say they frequently make the tea to drink when out on long hunts, and that it invigorates them wonderfully. It is also said to be an efficient cure for cancer. Dr. Stout and Prof. Bolander both said it was the common Yerba Buena, from which this city took its old Spanish name; and that its medicinal virtues had long been recognized. R. E. C. Stearns then read a very interesting paper "on the economic value of certain

Australian Forest Trees

And their cultivation in California." It treated particularly of the varieties of the Eucalyptus which Mr. Stearns eulogized as particularly adapted to California. We will give this paper in full in a future issue. The reading of the paper drew some of the members out in a discussion concerning the merits of the tree and its proper cultivation, strength, value as timber, medicinal virtues, etc.

Professor Bolander said that a familiar instance of the applicability of trees in tempering climate might be noticed when coming from the Eastern side of the valley towards Sacramento and Stockton. While in the valley the wind was hot and uncomfortable; on nearing Sacramento or Stockton the traveler became conscious of a refreshing coolness, caused by the existence of trees at those places. He had put a thermometer in the open air on a warm day, and then placed it on the green leaves of a tree, and it showed a difference of eighteen or twenty degrees. If our grain fields were surrounded by trees they would be greatly benefitted.

Professor Davidson said that this fact was recognized in Iowa, where they set aside one day in the year to plant trees for that purpose, generally the 1st of May, and that on that day last year it was estimated that upwards of one million trees had already been set out.

Dr. Stout testified to the hardihood of the Eucalyptus. He also said that parasites did not attack it, on account of the odor. As to the medicinal qualities of the tree, he had taken a quantity of the leaves and made cigarettes of them, and had constructed also a respirator so that the fumes from the leaves might be inhaled, and had found it of great assistance in cases of sore throat and chronic asthma. For the latter particularly it was very effective and will afford ready relief in case of an acute attack. He had strewn the dried leaves in the basement of houses where there were bad odors, and had found it almost as useful as carbolic acid.

Professor Bolander said that the idea was erroneous that the Eucalyptus was fragile and would not stand. The plant should be bought young for transplanting. These trees should be planted at least during the first year of growth, and they will take root and not be easily overthrown. When kept in pots too long, the roots become deformed; this is the reason why some people think they will not grow. The easiest and best way to cultivate these trees is to take a box filled with sandy soil nearly to the top and the remainder covered with sawdust; wet the sawdust slightly, throw the seed over it and gently rap the box with the hand. Keep this under a piece of paper or in the shade and when the seeds sprout they can be taken out like a small cabbage plant and set out at leisure.

Dr. Stout said they should not be supported by a rod or stick placed to close to the trunk since it prevented the branches from growing on the side where the support was.

Mr. Stearns said that when the plants were placed in a pot the tap roots assumed a rotary direction, and when taken out and planted the trees were easily overthrown.

Professor Bolander said the trees should be allowed to grow naturally and the lower branches should never be cut off. At Gen. Naglee's place in San José where he has raised about 60 acres of trees of all kinds the pruning knife is never used.

A twig containing the cells of a sort of scale insect was received from Menlo Park. It destroys the acacia and other plants in that vicinity.

The Humboldt Divide.

Dr. Blake stated that in a recent visit to the northern part of Humboldt, in Nevada, he had been able to corroborate the statement he made at the Academy a few weeks ago, as to the position of the divide between the waters of the Great Basin and the Columbia river. He had found it as before stated, some 50 or 60 miles further south than it is at present located on our maps. Not having any means of determining the exact latitude or longitude he was unable to give the exact geographical position of the divide, but computation from the nearest point, Fort Smith, the position of which had been astronomically ascertained would place it about in latitude 41° 40′ south and longitude 117° 53′ east.

The divide was found to be higher than he had thought, before actual measurement. Although the barometrical measurement had not yet been calculated, yet he believed the hight of the divide would be from 450 to 480 feet above the level of the Humboldt Valley, on about the same meridian. From the northern side of the divide, the water all flowed north, and although they did not directly reach the Owyhee, a tributary of the Columbia, yet there was no marked divide between the flats where they were last, and the streams flowing directly into the Owyhee.

Mr. A. Bowman of the State Geological Survey, then gave a slight sketch of Coast Surface Geology, which he illustrated with diagrams on the Board. His remarks will be found in another column.

Among the donations to the library, was volume I, of the "Zygaenidae and Bombycidæ of North America, north of the Mexican Boundary" by Richard H. Stretch. There will be about twenty-five or thirty of these pamphlets, containing handsome colored plates. The author asks that those who are willing to assist the work by the loan of rare species for figuring, put themselves in communication with him, and they will receive ample credit for such services. This work, which will be issued in numbers, about one in six weeks, will be a rare one for entomologists. The letter press is fine, and the colored engravings well executed.

The Missing Stars.

Professor Davidson remarked, that his statement as to the stars, which were said to be missing or decreased in brilliancy, had been denied by several. On June 21st, and several subsequent evenings, he had found them in their usual places, and of the proper magnitude. He said, that Mr. Madeira reiterates, that *Eta Leonis* is now of the 6th magnitude, but it is plainly visible to the naked eye as a star of the third and a-half magnitude. If he has observed it instrumentally, his instruments cannot be in adjustment. Mr. Clarke, who reported the disappearance of *Mu Lennis*, has instrumentally satisfied himself, that he is in error, into which he was led by a poor atlas of the heavens.

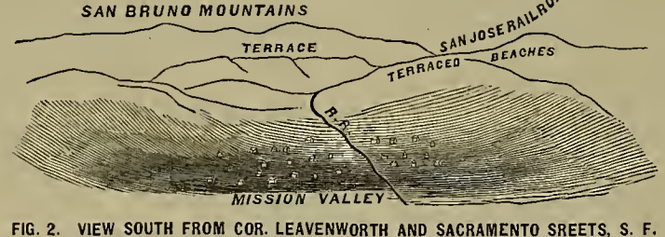

FIG. 2. VIEW SOUTH FROM COR. LEAVENWORTH AND SACRAMENTO SREETS, S. F.

A LARGE and rich body of ore has been struck in the Gladiator tunnel, near the Emma mine.

DOMESTIC ECONOMY.

Real Lace—How to Wear it and How to Clean It.

It has beeu said that women will fall down and worship a hit of dingy lace. Men wonder why ladies, dainty as regards the cleanliness of every other article of dress, will wear lace which is, to say the least, yellow, if not positively soiled. *Point d' Alencon*, one of the most beautiful and costly of the lace family, has a dingy appearance, even when new—the dirt appearing to he in the thread itself. This doubtless arises from the fact that it is slowly made, from handspun thread, and the poor lace-makers weave into it the sweat of their fingers, if uot of their hrows.

The fashion of diugy or yellow lace is one of ancient origiu. In the days of Elizaheth, immense lace ruffles were worn at the neck aud wrist, the lace heing generally handed down from one generation to another. To have old lace, was to have an ancient lineage. Of course, the yellow tinge of age was not to be bought by parvenus, and to have washed one's lace, forsooth! would have been to take away its prestige entirely.

But doubtless the fashiou has another reason for its origin. The moment the delicate meshes are wet the tiny threads shrink and the lace "fulls" more or less. I have heard ladies say that they could not do up lace to look "just like new." Now, this very fact of shrinkage proves that it cau not he done by any hut a "professor." The art of washing fine and costly lace is a trade in itself. It is spread, while wet, upon a cushioued table, and, after being pulled smooth, a piu is stuck into every mesh, to preveut shrinkage, a whole day sometimes spent npou a siugle yard of lace. When ladies can do that they can perhaps do up lace to "look just like uew." I once knew a lady, possessed of a rare collection of valuable laces, and also a rare passion for them, who washed and pulled them until they were dry, and then, slightly oiling some fine writing-paper, pressed the lace hetween the folds of it for several days. Of course she had not much else to do, and the lace, especially the *Valenciennes*, did really look beautiful, hut it did uot look new after all, and lacked the spirit-like delicacy of that which has never heen wet.

There is no finish so perfect to a lady's attire as a set of lace collar aud cuffs. One should wear linen in the morning to be sure, the pure whiteness and *washableness* harmonizing well with the plain print or merino morning-dress. But for full-dress, one must have lace, fine and clear, hoth for heauty and fashiou. To wash it is to spoil it. To throw it away as soou as it has hecome soiled—well, ouly people who wear diamonds at breakfast can do that; while to wear it positively dirty with oil from the hair or neck, is to forfeit the respect of all whose good opiniou ie worth having.

But there is a way out of this dilemma both easy aud feasihle. If a box of powdered magnesia he kept at hand, and the laces thrown in and covered as soon as they are taken off, and kept there until thoy arc wanted again, they will come forth as clean and fresh as could he desired. The magnesia can all he removed by boating the lace across the hand. Lace which has become much soiled by loug use may be cleaued in this way so as to be quite presentahle over a dark dress; only, it must he thorougely rubbed with the magnesia.

Lace-mending forms a separate branch of industry in Europe; as distinct, if not as widely followed, as lace-making. Like that, the trade must ho learned, for tho delicate meshes and pattern must all be restored. Ladies of rank often employ lace-meuders to teach them their art—that being, I suppose, as fascinating an employment as embroidery. Charlotte Bronte, in "The Professor," makes her heroine a lace-mender.—*Hearth and Home.*

Strawberry Syrup.

Somehody recommends the following as a very excellent preparatiou from strawberries: Take two pounds of nice herries, all the green ones being carefully picked out, and put them into a large hottle with a wide mouth, and at the eame time two aud a half pounds of finely pulverized white sugar. The hottle should not he quite full. Thoy are to he left standing at the ordinary temperature, being occcasionally gently shaken np. The sugar takos up the liquid part of the berry, forming a clear, aromatic syrup, while the solid parts shrivel np almost odorless and tastless, and may ho easily separated by straiuing through a linen cloth. Milk or wine may he poured over the residue to make a palatahlo dish for the table. The ahove quantity of berries and sugar make one aud a half quarts of syrup. It may he kept for some time in closely stopped hottles in a cool place. It must not be heatod, because the flavor of the berry is very volatile; a long exposure of the juice to the air is also injurious. The syrup, diluted with water, makes au agreeahle ico; or it may he mixed with some light wine as a drink. Raspherry syrup may he prepared in the eame way. The flavor of the raspberry is not injured hy heat, and the syrup may he more quickly prepared and with less sugar hy placing the bottle for a short timo in boiling water. This syrup may also be used for ices. As a drink, whon diluted with water, it is less piquant than that made in the usual way by crushing tho herries and letting the juice stand for a week.

A Chapter on Eggs.

Would it not he wise to suhstitute more eggs for meat in our daily diet? Ahout one-third the weight of an egg is solid nutriment. This is more than can be said of meat. There are no bones or tough pieces that have to be laid aside. A good egg is made up of ten parts of shell, sixty parts white, and thirty parts yolk. The white of an egg contains eighty-six per cent. of water, the yolk fifty-two per cent. The average weight of an egg is two ounces. Practically an egg is animal food, and yet there is none of the disagreeahle work of the butcher necessary to obtain it. The vegetarians of England use eggs freely, aud mauy of these men are eighty and ninety years old, and have been remarkahly free from illness. A good egg is alive. The shell is porus and the oxygen of the air goes through the shell and keeps up a sort of respiratiou. An egg soon hecomes stale in bad air, or in dry air charged with carhonic acid. Eggs may he dried and made to retain their goodness for a long time, or the shell may he varnished, which excludes the air, when, if kept at a proper temperature, they may he kept for years. The French produce more eggs thau any other, and ship millions of them to England annually. Fresh eggs are more transparent at the center, old ones on the top. Very old ones are not transparent in either place. On water in which one-tenth of salt has heen dissolved, good eggs sink, and indifferent ones swim. Bad eggs float in pure water. The best eggs are laid hy young healthy hens. If they are properly fed the eggs are better thau if they are allowed to eat all sorts of food.

Eggs are best when cooked about four minutes. This takes away the animal taste that is offensive to some, but does not harden the white or yolk as to make them hard to digest. An egg if cooked hard is difficult of digestion, except by those with stout stomachs; such eggs should be eaten with hread and masticated very finely. An excellent sandwich can he made with eggs and brown hread. An egg spread on toast is food fit for a king, if kings deserve any hetter food than anybody else, which is doubtful. Fried eggs are lcss wholesome than boiled ones. An egg dropped into hot water is not only a clean and handsome hut a delicious morsel. Most of the people spoil the taste of their eggs hy adding pepper and salt. A little sweet hutter is the hest dressing. Eggs coutain much phosphorus, which is supposed to he useful to those who use their brains much.—*Herald of Health.*

Hygienic Bill of Fare.

BREAKFAST.—Brown hread, wheaten gems, corn-meal gems, huttter, sugar, cracked wheat, mush, milk, tomatoes, baked apples, baked pototatoes, sweet potatoes.

DINNER.—Roast heef, potatoes, squash, string-beans, tomatoee, hrown hread, butter, cold gems, apples, and grapes.

SUPPER.—Wheat-meal gruel, sugar, milk, brown bread, hutter, cold gems, graham cake, stewed apples.

By wheat-meal is meant unbolted wheaten flour. Cracked wheat is the same, very coarsely gronud.

Water is placed on the table at noon, but no drink at breakfast or supper. Eastern watercures generally furnish no meat.

GOOD HARVEST DRINK.—Mr. Blair Burwell, of Powhatan, communicates to the Southern *Farmer* the following recipe for a harvest drink: Water, 33 gallons; Sharp Vinegar, 1 gallon; Molasses, 1¼ gallons; Ground Ginger, ¼ lb.

This will last thirty hands until dinner time, when as much more may be mixed up to serve until night. It is carried to the field daily in a cart, and moved abont after the hands, each oue of whom ie limited to a cocoanut full at a time, always without ice—(they drink nothing else.)

For our part we see no harm in ice. We have used it regularly for fourteeu years with out any bad result, but ou the contrary, we thiuk with benefit.

We know persons who have used it beneficially for a still longer period. A venerable friend of ours, recently deceased, assured us that he had nsed it thirty years or more, and never without advantage. His plan was too carry out a barrel of ice on a cart, and keep the water tuhs nearly filled with it. His theory, and we helieve the true one, was, that the ice acted as a tonic; and the hands could never drink to distention.

Strong coffee should always be given at breakfast aud at night.

CREAM BEER.—As the warm weather is now upon us we begin to think of refreshing drinks. I have a famed receipt which I give. It is an effervescing driuk, hut far pleasanter than soda water, inasmnch as you do not have to drink for your life to get your money's worth, the effervescence being much slower. Two ounces tartaric acid, two pounds white sugar, the juice of one lemon, three pints of water. Boil together five minutes; when nearly cold, add the whites of of three eggs well beaten, with half a cup of flour and half au ounce of essence of wintergreen. Bottle and keep in a cool place. Take two tahlespoonfule of this syrup for a tumbler of water, and add one-quarter of a teaspoonful of soda.—*Household.*

How to Cook Potatoes.

BAKED POTATOES.—Potatoes are more nutritious baked than they are cooked in any other manner; and they relish better with those who have not heen accustomed to eat them without seasoning. Wash the potatoes clean, but do not soak them. Bake them as quickly as possihle, without burning in the least. As soon as they are done, press each potato in a cloth, so as to crack the skin and allow the steam to escape. If this is omitted, the hest potatoes will not be mealy. They should be brought immediately to the tahle, as they will soon become solid and lose their flavor.

STEAMED POTATOES.—Potatoes are much more nutritious and palatable if they are properly steamed, than they are boiled. Wash them clean and place them in a steamer over boiling water. If the potatoes are of a good quality, the secret of having them mealy and palatahle is in steaming them very rapidly—as without a rapid condensation of steam aud a detention of steam in the steamer hy a close lid, the potatoes will he hard and appear not to be done, however long they may have been cooking. They should steam until the skin cracks, aud a fork will easily penetrate the centre. If not to be brought to the tahle soon, they should continue to steam until wanted, as steamed potatoes become solid much sooner than hoiled ones do.

TO BOIL POTATOES WITH THE SKINS ON.—After the potatoes are properly washed and a little of the skin taken off at the ends, place them in a kettle of hoiling water, allowing no more water than is sufficient to cover them. They shonld boil slowly, as the agitation of water in rapid boiliug dissolves and breaks the potatoes before they are done, and leaves them insipid and moist. They are better left unmoved to boil, and there should always be a vessel of hot water, from which the kettle may be replenished in case there is rapid evaporation from the state of the atmosphere. A pot with the top drawn in is hetter for hoiling potatoes than a wide-topped vessel. The water should be poured from them before they are quite done to the centre. A few spoonsful of cold water should then be added, and the vessel be placed upon the hot part of the stove with a clean napkin thrown over until the potatoes are wanted.

If the best potatoes cannot he ohtained (and no others are really fit to eat,) wheu about half done pour off the water; add cold water, bnt not enough to come to the top of the potatoes, and finish boiling and steaming them off as before. A close cover should never be placed over potatoes after cooking, either in the kettle or upon the table. After potatoes are ahout half boiled, for variety they are very nice finished off in the oven, either with the skine on or after removing them. They will need hut a short time to bake in this manner.—*Herald of Health.*

USES OF PAPER.—Few housekeepers are aware of tho many usee to which waste paper may he put. After a stove has heen blackeued it can be kept looking very well for a long time by ruhhing it with paper every morniug. Ruhbing with paper is a much nicer way of keeping the outside of a tea-kettle, coffee-pot and tea-pot hright and clean than the old way of washing them in suds. Ruhbing with paper is also the best way of polishing knives and tin-ware and spoons; they shine like new silver. For polishing mirrors, windows, lamp-chimneys, etc., paper is hetter than dry cloth. Preserves and pickles keep much better if brown paper, instead of cloth, is tied over the jar. Canned fruits are not so apt to mold if a piece of writing paper, cut to fit the cau, is laid directly on the fruit. Paper is much better to put under a carpet than straw. It is warmer, thinner, and makes less noise when one walks over it. Two thicknesses of paper placed between other coverings on a bed are ae warm as a quilt. If it is necessary to step upon a chair always lay a paper upon it, and thns eave the paint or woodwork from damage.

Selected Receipts.

RASPBERRY JAM.—Let the raspherries he thoroughly ripe. Mash them with a wooden spoon. To every pound of raspherries add a pound of sifted sugar. Boil this well together during half an hour, stirring it continually, lest it should hurn. When of a good thickness, put it into pots, let it cool thoroughly, and cover with brandied paper.

BLACKBERRY JELLY.—Gather the fruit when perfectly ripe, and in very dry weather. Put the blackberries into a jar and place the jar in hot water, keeping it hoiling until the juice is extracted from the fruit. Pass it through a fine sieve or jelly-hag without much pressure. For every pint of juice add fourteen ounces of sugar and hoil in a clean preserving-pan ahout five minutes, carefully taking off the scum as it risee to the surface. Place it hot in small jars and cover it down with thin tissue-paper, dipped in brandy, and brown paper over it. Keep it in a cool, dry place.

APPLE TAPIOCA.—Pare and core fine apples, place them in a deep pudding dish, fill the openings where the core was removed, and sprinkle thickly over the apples with white sugar. Have a dessert spoonful of tapioca soaked in water for each apple; and a little salt, and place this about among the apples; fill np with water to the top of the apples, and bake until the apples are soft and delicately-browned, but not until they have lost their shape Eat cold, with cream or a soft custard.

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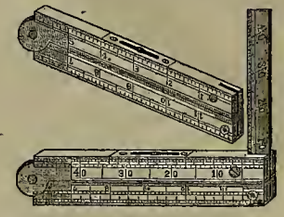

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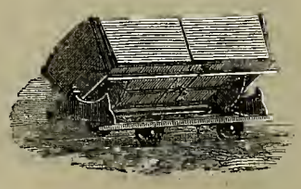

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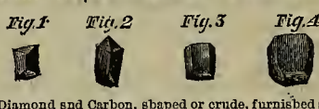

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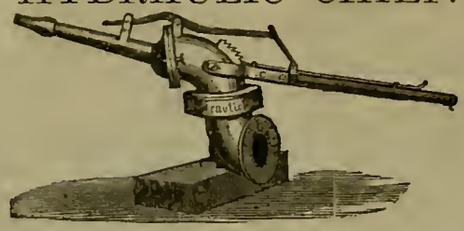

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The "Sportsman's" Delight, the "Hunter's" Favorite, the "Target-Shooter's" Pride. Also
REVOLVERS FOR HOUSE USE.
In these days of thieves and Burglaries, every householder should have a revolver for home protection.
REMINGTON'S RIFLE CANE.
Every gentleman should have one for protection against dogs and rowdies, and for field use.
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19v24-6m 193 Broadway, N. Y.

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VAN WINKLE & DAVENPORT,
IMPORTERS AND DEALERS IN
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CUMBERLAND COAL,
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Removed from Sacramento to
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21v24-1y

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Dupont's Gunpowder, Safety Fuse,
—AND—
WINCHESTER REPEATING ARMS.

DUPONT'S Superior Mining Powder (saltpetre), F-FF-FFF.
DUPONT'S Blasting Powder, in air-tight corrugated Iron Kegs, C-F-FF-FFF.
DUPONT'S Celebrated Brand, Diamond Grain, Nos. 1 2, 3 and 4, in 1 lb. and ½ lb. canisters.
DUPONT'S Unrivalled Brands, Eagle Duck and Eagle Rifle, Nos. 1, 2, 3, in half kegs, qr. kegs, 5 lb. tins, and in 1 lb. and ½ lb. canisters.
DUPONT'S Standard Rifle, Fg-FFg-FFFg, in kegs, half kegs and qr. kegs, and in 1 lb., ½ lb., and ¼ lb. canisters.
DUPONT'S Superior Rifle, A. F. & Co., F-FF-FFF, in kegs, half kegs, qr. kegs, and in 1 lb., ½ lb. and ¼ lb. canisters.
DUPONT'S Cannon, Musket, Meal and Fuse Powder.
EAGLE SAFETY FUSE (manufactured near Santa Cruz, Cal., by the L. S. & P. Co.) Constantly on hand full supplies of their Celebrated Brands, Waterproof and Submarine, Triple Taped, Double Taped, Single Taped and Hemp Fuse. Fuse made especially to explode the Giant Powder and Hercules Powder Caps.
The above named Fuse are warranted equal to any made in the world.
WINCHESTER REPEATING ARMS (Henry's Improved) and FIXED AMMUNITION.
A large and complete stock of these celebrated arms constantly on hand, to wit:
Repeating Sporting Rifles—Oiled Stocks,
Repeating Sporting Rifles—Varnished Stocks.
Gold, Silver and Nickle-plated Rifles—beautifully Engraved,
Repeating Carbines—Oiled Stocks.
Repeating Carbines—Gold, Silver and Nickel-Plated and Engraved.
Muskets—Angular or Sword Bayonets.
Full stock constantly on hand of all the different parts of the Winchester Arms.
Cartridges in cases (Brand H), manufactured by the W. R. A. Co. expressly for their arms.
A full and complete stock of the above named merchandise always on hand and for sale by
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The California Powder Works
No. 314 CALIFORNIA STREET,
SAN FRANCISCO.
Manufacturers and have constantly on hand
SPORTING,
MINING,
And BLASTING
POWDER,
Of SUPERIOR QUALITY, FRESH FROM THE MILLS. It being constantly received and transported into the interior, is delivered to the consumer within a few days of the time of its manufacture, and is in every way superior to any other Powder in Market.
We have been awarded successively
Three Gold Medals
By the MECHANICS' INSTITUTE and the STATE AGRICULTURAL SOCIETY for the superiority of our products over all others.
We also call attention to our
HERCULES POWDER,
Which combines all the force of other strong explosives now in use, and the lifting force of the BEST BLASTING POWDER, thus making it vastly superior to any other compound now in use.
A circular containing a full description of this Powder can be obtained on application to our Office.
16v20-3m JOHN F. LOHSE, Secretary.

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TRADE MARK H&L AVOID IMITATIONS

The attention of Teamsters, Contractors and others, is called to the very superior AXLE GREASE manufactured by
HUCKS & LAMBERT.
The experience of OVER TWENTY YEARS, specially devoted to the preparation of this article, has enabled the proprietors to effect a combination of lubricants calculated to reduce the friction on axles, and thus
Relieve the Draft of the Team,
Far beyond the reach of any who have but recently gone into the business; and as the H & L AXLE GREASE can be obtained by consumers at as
LOW A RATE
As any of the inferior compounds now being forced upon the market by unprincipled imitators, who deceive and defraud the consumer.
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Invite all who desire a First-class and Entirely Reliable Article, and which for Over 18 Years in this country has given such GENERAL SATISFACTION, to ask for the H & L AXLE GREASE. See that the trade mark H & L is on the red cover of the package, and take no other.
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QUICKSILVER FOR SALE, IN LOTS TO SUIT,
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New Incorporations.

TOMLINSON M. Co.—June 27. Location: Ruby Hill district (Shell Creek), White Pine county. Capital stock, $3,000,000, in 30,000 haree. Trustees—Thos. R. Hayes, S. W. Lee, Coll Deane, J. H. A. Williams and George E. Lane, Jr.

SPANISH HILL HYDRAULIC GRAVEL M. Co.—June 27. Location: State of California. Capital stock, $5,000,000, in 50,000 sharee. Trustees—George W. Swan, F. A. Bishop and H. D. Bacon.

K. K. CONSOLIDATEN M. Co.—June 27: Location. Eureka district, Lander county, Nevada. Capital stock, $5,000,000, in shares of $100 each. Trustees—J. B. Haggin, George Hearst, George D. Roberts, Charles E. Elliott and B. B. Minor.

ESTA BUENO CONSOLIDATEN S. M. Co.—June 27. Location: Mammoth District, Nye county, Nevada. Capital stock, $3,000,000. Trustees—H. J. Tilden, C. D. Montanye, W. H. Leonard, E. B. Burdick and Richard Homfray.

SANTA CRUZ COAL M. Co.—June 28. Location: Santa Cruz county. Capital stock, $1,500,000, in 30,000 shares of $50 each. Trustees—A. R. Hynes, W. F. Bradbury, G. W. Rutherford, H. Mayers, and F. B. Cropper.

ARGENTINE HYDRAULIC AND QUARTZ M. Co.—June 28. Location: State of California. Capital stock, $20,000, in 2,000 shares of $100 each. Trustees—E. A. Heath, L. Atkinson, W. R. Payne, J. F. Greeman, and D. C. Ferris.

THE GRACE M. Co.—July 1. Location: Schell Creek district, Nevada. Capital stock, $6,000,000, divided into 60,000 shares. Trustees—J. M. McDonald, James S. Urquhart, Albert S. Evans, W. H. Gamble and James Gamble.

THE EUREKA MINING ANN SMELTING Co.—July 2. Capital stock, $5,000,000, in 50,000 shares of $100 each. Location: Eureka district, Lander county, Nevada. Trustees—Wm. Norrie, Jesse Holladay, Chas. J. Brenham, Charles E. McLane, John Mullan, Alexander Forbes and A. Jacoby.

The following company has filed a certificate of incorporation in the Secretary of State's office in Sacramento: The Napa and Solano Agricultural and Mechanic Arts Society, June 26. Object—to locate and maintain an agricultural fair ground and pavilion in the district embracing Napa and Solano counties. Capital stock, $100,000. Trustees—John B. Frisbie, M. R. Miller, W. G. Morris, J. P. Jackson and others. Place of bueiness, Vallejo.

The Pacific Box Manufacturing Company elected the following Trustees on the 2d isnt.: H. C. Chapman, (President); Jae. L. Blakie, (Treasurer); C. S. Consins, (Secretary); S. L. Theller and B. F. Barton.

INCREASE OF CAPITAL STOCK.—The Pocahontae G. M. Co. has increased the Capital stock from $120,000 in shares of $100 each to $1,000,000 in ehares of $100 each.

The William Penn Consolidated M. Co. has filed a certificate of increase of Capital Stock from $810,000 in 2,700 shares, to $1,350,000 in shares of $50 each.

Meetings and Elections.

The Kentucky Gold and Silver Mining Company at their Annual Meeting on the 29th ult., elected the following Trustees: A. Anstin, Richard O'Neill, E. J. Baldwin, P. G. Venard and J. B. E. Cavallier.

The Beckwith Mining Company have elected the following Trustees: C. Jonee, President; A. Fleirshacker, J. M. Miner, A. Caldwell, and W. H. Watson, Secretary.

The Ophir Copper, Gold and Silver Mining Company have elected as Trustees: O. H. Bogart, Chas. E. Gibbs, H. C. Swain, R. O. Ives, and C. F. Brown.

The Rock Island Company have elected the following Trustees: A. K. P. Harmon, A. E. Head, Joseph Clark, J. E. de la Montagnie and W. B. Thornburgh.

The Pocahontas Mining Company has chosen the following Trustees: L. A. Booth, President; Joseph Sedgley, John Barton, A. G. Stiles and John O. Earl. D. Jennings was continued as Secretary.

At a meeting of the Board of Trustees of the Golden Chariot Mining Company, the resignation of Mr. Phely as Superintendent having been accepted, S. Linkton was appointed in his stead. Mr. Fay tendered his resignation as President and Trnstee, and Mr. Steinhart was elected in his stead.

At a meeting of the Trustees of the Enreka Mining and Smelting Company, held on the 2d inst., Alexander Forbes was chosen President, Wm. Norris, Vice-President; C. J. Brenham, Treasnrer; P. T. Beach, Secretary; and G. C. Robbins, Superintendent.

MINING SALES.—The Miller mine in the American Fork District, Utah, has been disposed of for $2,000,000. It was purchased last year by Aspinwall for ninety odd thousand dollars.

Californians have purchase the El Dorado Silver mine, at Jefferson City, Montana, for $15,000.

The Reno *Journal* says that the Hayden Hill mine, 60 miles from Snsanville, has been sold to a San Francisco company who will shortly erect a 60 stamp mill and hoisting works on the property.

MINING DISCOVERIES.—A gentleman named Harper, has discovered a very rich ledge near Whisky Slide, Calaveras connty.

Rich Silver mines are reported to have been found in the Providence mountains, between San Bernardino and the Wallapai district.

Leather Market Report.

[Corrected weekly by Dolliver & Bro., No. 109 Post st.]

SAN FRANCISCO, Wednesday, July 3, 1872.

SOLE LEATHER.—The Eastern market is higher, and some tanners have advanced their prices here. We quote as below:

City Tanned Leather, ₱ lb	26@29
Santa Cruz Leather, ₱ lb	26@29
Country Leather, ₱ lb	25@28
Stockton Leather, ₱ lb	26@29

French skins continue firm. All California skins are scarce and bring full prices.

Jodot, 8 Kil., per doz	$80 00@
Jodot, 11 to 13 Kil., per doz	70 00@ 88 00
Jodot, second choice, 11 to 15 Kil. ₱ doz	60 00@ 76 00
Lemoine, 16 to 18 Kil., ₱ doz	75 00@ 77 50
Country Leather, ₱ lb	25@28
Stockton Leather, ₱ lb	26@29
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Lemoine, 16 to 18 Kil., ₱ doz	75 00@ 77 50
Lemin, 12 and 13 Kil., per doz	68 00@ 70 00
Cornellian, 16 Kil., per doz	70 00@
Cornellian, 12 to 14 Kil., per doz	60 00@ 68 00
Ogeran Calf, ₱ doz	54 00@
Simon, 18 Kil., ₱ doz	65 00
Simon, 20 Kil., ₱ doz	68 00
Simon, 24 Kil. ₱ doz	72 00
Robert Calf, 7 and 8 Kil.	35 00@ 40 00
French Kips, ₱ lb	1 00@ 1 30
California Kip, ₱ doz	60 00 to 80 00
French Sheep, all colors, ₱ doz	15 00
Eastern Calf for Backs, ₱ lb	1 15@ 1 25
Sheep Roans for Topping, all colors, ₱ doz	9 00@ 13 00
Sheep Roans for Linings, ₱ doz	5 50@ 10 50
California Russett Sheep Linings	1 75@ 5 50
Best Jodot Calf Boot Legs, ₱ pair	5 25
Good French Calf Boot Legs, ₱ pair	4 50@ 5 00
French Calf Boot Legs, ₱ pair	4 00
Harness Leather, ₱ lb	30@ 37½
Fair Bridle Leather, ₱ doz	48 00@ 72 00
Skirting Leather, ₱ lb	34@ 37½
Welt Leather, ₱ doz	30 00@ 50 00
Buff Leather, ₱ foot	18@ 21
Wax Side Leather, ₱ foot	20@ 22

The Mining and Scientific Press for 1872 is Still Marching Onward!

Our careful system of compiling, judiciously condensing, and conveniently arranging into regular departments, has been heartily endorsed. It renders the paper worth more to readers, who can find handily that which interests them most. This plan will be continued in Volume XXV.

The weekly issues of the PRESS will contain reliable

Information for Practical Miners,

Treating on the Opening of Mines; Mining of Ores; Milling of Ores; Smelting of Ores; Separation and Rossting of Ores; Amalgamation; Saving of Gold and all precious Metals; New Processes of Metallurgy; New Discoveries of Mines; Mining Engineering and Hydraulics.

For Inventors, Mechanics and Manufacturers.

All ucw and importaut developmente in Scientific aud Mechanical Progress; Patents and Inventions of the Pacific States; Progress of Home Industries; Hints for Local Manufacturers; Illustrations of New Machinery; Reports of Popular Scientific and Industrial Lectures.

Our Mining Summary

Gives the progress of mining work from week to week in the various counties and districts throughout the principal mining regions of the United States, arranged in alphabetical order. It is the most extensive record of mining operations published in the world. It affords the intelligent miner a rare opportunity to know and profit by the work and experience of his neighbors. Miners have few sources of practicsl information in their calling, and should embrace every reliable means for improvement. Mining Operators and Shareholders, at home and abrosd, weekly examine our Summary with increased interest and profit.

For Self-Improvement,

Every issue of the PRESS abounds with articles of an elevating character, to stimulate the higher virtues and natures and progressive intellects of both men and women.

Our "Domestic Economy"

Embraces new and important facts which ehould be known in every csbin and household. Short and interesting—the articles under this heading are freely read and practiced with profit and improvement to the readers.

The PRESS is not strictly a "paper for professional, scientific men," but rather a

Liberal and Popular Scientific Journal,

Well calculated to make practically scientific men from our intelligent masses. This is our stronghold for accomplishing good. Plain, correct and pleasing language, easily comprehended by all, confined mostly to short articles, is our endeavor.

The New and Novel Developments

In the progress of this comparstively new section of the Union (but recently settled and now rapidly increasing with a population of the most intelligent and venturesome people, attfacted from nesrly every quarter and clime on the globe), enable us, with due enterprise, to display vigor and freshness in our columns not met with in similar journals elsewhere. The same circumstances also render such a paper more especially valuable to its readers in a new, and to a certain measure, untried field, where the best methods and processes of industry are not so well established or traditionally known as in older communities. Published experiences often save costly exporiments and disastrous results.

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Are oftentimes saved to the readers of this paper by a single hint or article of information in its columns. Such instances have been repeatedly reported to the editors and proprietore during their long connection with the PRESS. Our paper presents

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In brief and fresh form, suited to the wants and tastes of the readers of thia coast, which ia not obtainable otherwise so timely, or in so cheap and convenient form. As an industrial publication, meeting the wants of so many kinder industries, this journal stands preeminent and without a precedent.

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DEWEY & Co.,

Publishers, Patent Agents and Engravers, No 338 Montgomery street, S. E. corner California, S. F.

THE NEW U. S. MINING LAWS.

The new Laws of 1872, governing the location and purchasc of Placer and Quartz Mines, and Agricultural Lands in Mining Districts, of tho U. S., printed in circular sheet, for sale at thie office. Single copies 10 cts. Usual discount to the trade.

RICHARD H. BUEL, Consulting Mechanical Engineer, 7 Warren Street, New York. Advice and assistance given to those who desire to invest funds in meritorious and valuable Patent Rights. Machinery of all kinds bought and sold. Unusual facilities for testing engines, boilers and other machinery. I refer particularly to Professor R. H. Thurston, of the Stevens Institute of Technology, who has consented to associate himself with me in consultation on matters of special importance. jun15-3t

A NEW BOOK ON MINING.

The Explorers', Miners' and Metallurgists' Companion; Comprising a Practicsl Exposition of the Various Departments of Exploration, Mining, Engineering, Assaying, and Metallurgy. The Most Practical and Comprehensive Work on Mining Subjects Extant. Comprising 640 Pages, and 81 Engravings. By J. S. Phillips, M. E. Price, bound in cloth, $10 (in coin); in leather, $12. Forwarded by mail, in cloth, $11.40, currency; in leather, $13.75. Issued and for sale by DEWEY & Co., Patent Agents and Publishers Mining and Scientific Press, S. F.

MARAVILLA COCOA.—No breakfast table is complete without this delicious beverage. The *Globe* says: "Various importers and manufacturere have attempted to attain a reputation for their prepared Cocoas, but we doubt whether any thorough success had been achieved until Messre. Taylor Brothers discovered the extraordinary qualities of 'Maravilla' Cocos. Adapting their perfect system of preparation to this finest of all specics of the Theobroma, thoy have produced an article which supercedes every other Cocoa in the market. Entire solubility, a delicate aroma, and a rare concentration of the purest elements of nutrition, distinguish the Maravilla Cocoa above all others. For homeopsths and invalids we could not recommend a more agreeable or valuable beverage" Sold in packets only by all grocers, to whom also may be had Taylor Brothers' Original Homeopathic Cocoa and Soluble Chocolate Steam Mills—Brick Lane, London. Export Chicory Mills, Bruges, Belgium. jun29-5w

State University.—The next term of the Preparatory Department will begin April 20th, 1872.

The course of study embracee the Ancient and the Modern Lengusges and the higher Mathematice, and ie specially adapted to the University curriculum.

Terms, $12 a term. GEORGE TAIT, Oakland. 13v3bp-tf

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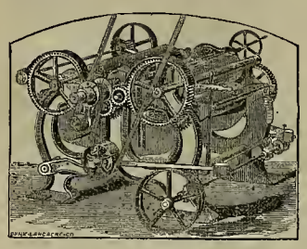

E. & F. GLEASON,

MANUFACTURERS OF IMPROVED WOOD TOOLS,

No. 27 Haydock Street,

25v24eow PHILADELPHIA, PA.

EDITORS M. & S. PRESS.—An erroneous impression provails that the GIANT POWDER Company's Works exploded. This is not the case; but the works of the Hercules Powder Company (which is a totally different substance) wore destroyed by the explosion.

The undersigned will fill all orders for both grades Giant Powder, as heretofore.

BANDMANN, NIELSEN & CO.,
26v24-3t General Agents Giant Powder Co.

For Steam Pipes & Boilers **Hair Felting**

SAVES 25 PER CENT. OF FUEL—An item worth looking after. Also, Steam Governors, Tube Scrapere, Steam Pumps, Self-Oilers, Cylinder Cupe, Belting, Lacing, Hose, Fuse, Packing, etc., including all kinds Miners', Engineers' and Millmen's Supplies, at the Machinery and Supply Depot of TREADWELL & CO.; old stand, Market street, head of Front, San Francisco. 13v24eow

SPAULDING & BARTO, Scientific Printers, Press Office, 414 CLAY ST., San Francisco.

NYSTROM'S MECHANICS, NEW EDITION.

Pocket Book of Mechanics and Engineering: Containing a Memorandum of Facts and Connections of Practice and Theory. By John W. Nystrom, O. E. Eleventh Edition. Revised and Greatly Enlarged with Original Matter. Fully Illustrated. 16mo. Tuck, gilt edges. $3.50. Will be sent by mail on receipt of price by J. B. LIPPINCOTT & CO., PUBLISHERS,
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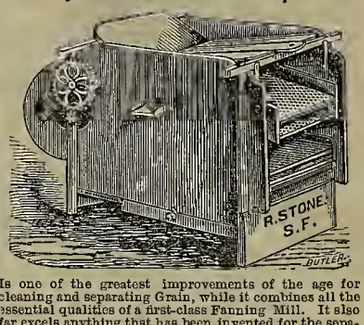
Novelty Mill and Grain Separator



Is one of the greatest improvements of the age for cleaning and separating Grain, while it combines all the essential qualities of a first-class Fanning Mill. It also far excels anything that has been invented for the separation of Grain. It has been thoroughly teeted on all the different kinds of mixed Grain. It takes out Mustard, Grass Seeds, Barley and Oats, and makes two distinct qualities of wheat if desired.

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A 10-STAMP QUARTZ MILL,

Known as the Montezuma Mill, in Montezuma District, Nye County, Nevada.

All in running order, with Pans, Bolting, Furnaces, etc. In a good locality for custom work. The mill can remain or be removed.

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FOR SALE CHEAP.

One of Blake's Patent Ore Crushers, size 8x10, second-hand and in perfect order, is offered for sale chesp. Also,

A STEAM ENGINE,

8x16, and another 6x12, second-hand and in good order. Also,

A New Mining Pump,

6-inch bore and 5-feet etroke, double acting.

All of the above will be sold at good bargains by

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Blowers, Steam Pumps, Hair Felt. **Mining Tools**

PORTABLE ENGINES, TURBINE WATER WHEELS, Wood and Iron Labor-Saving Machinery, Hardware, Belting, Lacing, Packing, and a general stock of Engineers', Miners', Farmers' and Mechanics' Toole and Mill Supplies.

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Office—623 Montgomery street, opposite Montgomery Block. Also, Offices of the "China Mail," "Mail Bag," "City Index and Purchaser's Guide," etc. 18v24-tf

CAUTION.

Betts's Patent Capsules.

The public are respectfully cautioned that BETTS'S Patent Capsules are being in ringed

BETTS'S name is upon every Capsule he makes for the leading Merchants at home and abroad,

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MANUFACTORIES:—1, WHARF-ROAD, CITY-ROAD, LONDON, AND BORDEAUX, FRANCE.

Mining and Other Companies.

Owing to the time necessary to mail the present large edition of the M. & S. Press we are obliged to go to press on Thursday evening—which is the very latest hour we can receive advertisements.

Corona Consolidated Mining Company—

Location of works, Eureka District, Lander County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 25th day of June, 1872, an assessment of Ten Cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No. 409 California street, up stairs, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 31st day of July, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the 22d day of August, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. F. CRONISE, Secretary.

Office, 409 California street, San Francisco, California.
Jun29-3t

Eagle Quicksilver Mining Company---Lo-

cation of works, Santa Barbara County, California.

Notice is hereby given that at a meeting of the Board of Trustees of said company, held on the 8th day of May, 1872, an assessment of $40 per share was levied upon the mines of said company, payable immediately in gold coin of the United States, to the Secretary at his office, room 5, No. 302 Montgomery street, San Francisco, California.

Any shares upon which said assessment shall remain unpaid, on Thursday, July 11th, 1872, shall be deemed delinquent, and will be duly advertised on Saturday, July 13th, 1872, for sale at publicauction, and unless payment shall be made before, will be sold on Monday, the 15th day of July, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office—Room 5, No. 302 Montgomery street, San Francisco California. ma.11.

Excelsior Mill and Mining Company—Lo-

cation of works, Copo Mining District, Elko county, State of Nevada.

Notice is hereby given, that at a meeting of the Trustees of said Company, held on the 20th day of June, A. D., 1872, an assessment of Two Dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the company, No. 415 Montgomery street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Saturday, the 27th day of July, A. D., 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 19th day of August, A. D., 1872, to pay the delinqnsat assessment, together with costs of advertising and expenses of sale. FRANK SWIFT, Secretary.

Office, No. 415 Montgomery street, San Francisco, Cal.
Jun22-3t

Hudson Gold Mining Company—Location

of works, Chorokee Mining District, Plumas county, State of California.

Notice is hereby given, that a meeting of the Trustees of said Company, held on the 18th day of June, A. D., 1872, an assessement of Ten Cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the company, No. 411 California street. Any stock upon which said assessment shall remain unpaid on Saturday, the 27th day of July, A. D., 1872, shall be deemed delinquent, and will he duly advertised for sale at public auction, and unless payment shall bo made before, will be sold on Saturday, the 17th day of August, A. D., 1872, to pay the delinqnent assessment, together with costs of advertising and expenses of the sale.

J. L. KING, Secretary.

Office, 411 California street.
Jun22-3t

Louise Silver Mining Company—Location

of works, Ploche, Ely Mining District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 3d day of July, 1872, an assessment of ten cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, room 5, No. 302 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Saturday, the 10th day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public anction, and unless payment shall be made before, will be sold on Saturday, the 7th day of September, 1872, to pay the delinquent assessmcut, together with costs of advertising and expenses of salc. By order of the Board of Trustees. WM. H. WATSON, Secretary.

Office, room 5, No. 302 Montgomery street, San Francisco. julé.

Lyons & Wheeler Mining Company—Lo-

cation of works, Maynard Mining District, Mohave County, Artzona Territory.

NOTICE.—There are delinquent upon the following described stock, on account of Assessment, No. 2, lovied on the 18th day of May, 1872, the several amounts set opposite the names of the respective Shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Archibald C. Peachy.....	7	100	$10 00
Archibald O. Peachy.....	8	100	10 00
Archibald O. Peachy.....	9	100	10 00
Archibald C. Peachy.....10		100	10 00
Archibald C. Peachy.....11		100	10 00
Archibald C. Peachy.....12		100	10 00
Archibald O. Peachy.....13		100	10 00
Archibald C. Peachy.....14		100	10 00
Archibald C. Peachy.....15		100	10 00
Archibald C. Peachy.....16		100	10 00
Archibald O. Peachy.....17		100	10 00
Archibald C. Peachy.....18		100	10 00
Archibald O. Peachy.....19		100	10 00
Archibald C. Peachy.....20		100	10 00
Archibald C. Peachy.....21		100	10 00
Archibald C. Peachy.....22		100	10 00
Archibald C. Peachy.....23		100	10 00
Archibald C. Peachy.....24		100	10 00
Archibald C. Peachy.....25		100	10 00
Archibald C. Peachy.....26		100	10 00
Archibald O. Peachy..... ..27		100	10 00
Archibald O. Peachy.....28		100	10 00
Archibald C. Peachy.....29		100	10 00
Archibald C. Peachy.....30		100	10 00
Archibald C. Peachy.....31		100	10 00
L. L. Robinson.....34		5000	500 00
E. Martin Smith.....36		2500	250 00
L. Maynard.....37		2500	250 00

And in accordance with law, and an order of the Board of Trustees, made on the 18th day of May, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, Room, No. 3, No. 419 California street, San Francisco, California, on the 15th day of July, 1872, at the hour of Three o'clock P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

T. W. COLBURN, Secretary.

Office, room No. 3, Hayward's Building, No. 419 California street, San Francisco, California. Jun29-3t

"HOADLEY."

TREADWELL & CO.,
SAN FRANCISCO,
Are the only Agents for Sale of these Engines in the Pacific States.

"THE HOADLEY"

Is the perfection of the Portable Engine. They are known throughout the Pacific States, and are justly noted for their Efficiency and Perfect Workmanship. We have them with and without wheels, and take pride in commending them as

Threshing Engines,

In which field they have long led all others—and for general use. Beware of Cheap-made Imitations, with their boilers imperfectly stayed, and made of second quality material. Better take a "HOADLEY" at double the price, and know your Life and Property are secure. No man who values either, can afford to buy any other, as hundreds can testify throughout California. Ask any man who has a Hoadley Engine, what he thinks of it.

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FROM 3 TO 40 HORSE POWER.

TREADWELL & CO.,

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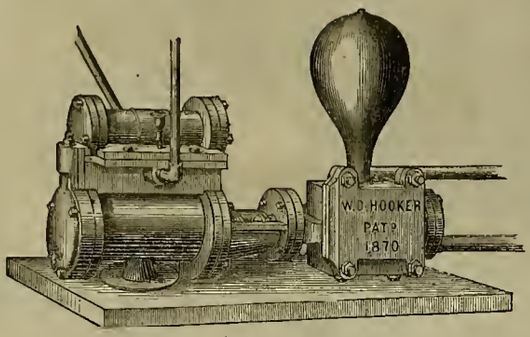
Hooker's Patent Direct Acting Steam Pump.



SIMPLE, CHEAP AND DURABLE.

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☞ SEND FOR CIRCULAR.

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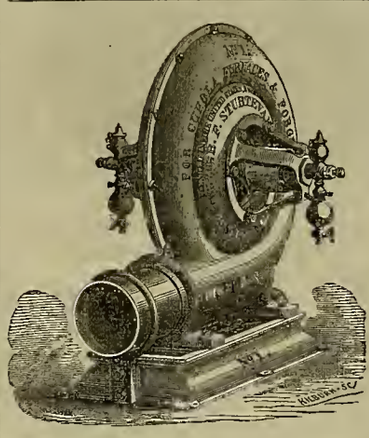

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PRESSURE BLOWERS,

For Cupola, Furnaces, Forges, Etc.

Ventilating Mines, Carrying off Dirt, Etc.

Send for Circular Price List.

TREADWELL & CO.,

Selling Agents,

MARKET, HEAD OF FRONT STREET,

25v24eow SAN FRANCISCO

Norman Gold Mining Company---Location

of works, Aqueduct Mining District, Amador County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said company, held on the 27th day of June, 1872, an assessment of five cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary at the office of the company, room 5, No. 302 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Thursday, the 1st day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the 22d day of August, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office—Room 5, No. 302 Montgomery street, San Francisco.

"Pacific Ramie Company"—Notice Is

hereby given, that at a meeting of the Board of Trustees of said company, held on the 11th day of June, A. D., 1872, an assessment of Twenty Cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary at his office, No. 214 Battery street, San Francisco, Cal. Any stock upon which said assessment shall emain unpaid on the 13th day of July, 1872, shall he deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, August 9th, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. THOS. R. HAYES, Secretary.

jun22-td

Stockholders' Meeting—Office of the

Hardy Coal Mining Company, San Francisco, June 4, 1872

In accordance with a resolution adopted at a meeting of the Trustees of the Hardy Coal Mining Company, held this day, a special meeting of the stockholders of said company is hereby called, the same to be held at the office of the company, 338 Montgomery street, San Francisco, California, on Tuesday, the 9th day of July, at 11 o'clock A. M., to take into consideration and decide upon the proposition to increase the capital stock of the said company, from two hundred thousand dollars, divided into four hundred shares of five hundred dollars each, the present capital stock of the company, to five hundred thousand dollars, divided into five thousand shares of one hundred dollars each.

I. BARTLETT,
EDWARD McLEAN,
JACOB HARDY, } Trustees

Stockholders' Meeting — William Penn

Consolidated Gold and Silver Mining Company.

The annual meeting of the stockholders of the William Penn Consolidated Gold and Silver Mining Company, will be held at the office of the Company, No. 6 Montgomery street, San Francisco, on Monday, the 15th day of July, at 12 M. JNO. F. POPE, Secretary.

Tecumseh Gold, Silver and Copper Min-

ing Company—Location of Works, Gopher District, Calaveras County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 26th day of June, 1872, an assessment (No. 14) of ten (10) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, F. J. Herrmann, at the office of the Company, No. 534 Washington street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 31st day of July, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the 22d day of August, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

F. J. HERRMANN, Secretary.

Office, 634 Washington street, Room No. 2, up stairs, San Francisco, Cal. Office hours from 11 A. M. to 2 P. M.

Union Gold Mining Company—Location of

works, Howland Flat, Sierra County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 25th day of June, 1872, an assessment of one dollar ($1.00) per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company rooms, No. 22, Merchants' Exchange, California street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 29th day of July, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 19th day of August, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustee.

ALFRED K. DURBROW, Secretary.

Office, room No. 22, Merchants' Exchange, California street, San Francisco, Cal. June29-3t

William Penn Consolidated Gold and Sil-

ver Mining Company—location of works, Devil's Gate District, Storey County, State of Nevada.

Notice is hereby given, that at a meeting of the Trustees of said Company, held on the 3d day of July, A. D., 1872, an assessment of ten cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No. 6, Montgomery street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 5th day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 2d day of September 1872, to, pay the delinquent assessment, together with the costs of advertising and expenses of sale. By order of the Board of Trustees. JNO. F. POPE, Secretary.

Office, No. 6 Montgomery street, San Francisco, California. July6-4t.

Winnemucca Chief Silver Mining Com-

pany—Location of Works, Humboldt County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 19th day of June, 1872, an assessment of fifteen cents per share was levied upon the capital stock of said Company, payable immediately, in United States Gold coin, to the Secretary, at the office of the Company, No. 409 California street, up stairs, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 26th day of July, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the 20th day of August, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. F. CRONISE, Secretary.

Office, 409 California street, San Francisco. Cal.
June29-3t.

Woodland Gold Mining Company—Lo-

cation of Works, West Point Mining District, Calavaras County, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 21st day of May, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificates.	No. Shares.	Amt.
John H Wood, Trustee.....5		20	$2 50
John H Wood, Trustee.....8		20	2 50
John H Wood, Trustee 0		20	2 50
W H Rhodes.....23		500	62 50
George Bower.....24		500	62 50
Isaac S Allen.....25		500	62 50
H O Howard, Trustee.....26		200	25 00
Wallace Everson.....29		442	55 25
C F Brown, Trustee.....30		500	62 50
C F Brown.....33		26	3 25
William Stuart.....34		606	75 75
William J Ounn.....36		126	15 75
Frederick Madge.....44		1,000	125 00
Frederick Madge.....45		300	37 50
John H Wood, Trustee....47		200	25 00
John H Wood, Trustee....49		50	5 25
Thomas Anderson.....54		250	31 25
Jules Greenhood.....57		500	62 50
Jules Greenhood.....58		500	62 50
Frederick Madge.....62		150	18 75

And in accordance with law and an order of the Board of Trustees, made on the 21st day of May, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at publicauction, by John Middleton & Son, at No. 310 Montgomery street, San Francisco, California, on the sixteenth day of July, 1872, at the hour of one o'clock, P. M. of said day, to pay said delinquent assessments thereon, together with cost of advertising and expenses of sale. F. MADGE, Secretary.

Office, No. 64 Merchants' Exchange, California street, San Francisco, California. Jun29-3t

Important to Miners.

FREY'S IMPROVEMENT ON

Evans' Under Current and Sluices,

For Saving Fine Gold and Floating Quicksilver.

For particulars address
WATERS & CO., Assayers, Agents,
NO. 54 J STREET, SACRAMENTO.
16v24-3m

"Clear as Crystal."

PEBBLES ARE MADE from Rock Crystal cut in slices and ground convex, concave or periscopic, for Spectacles. In Europo and in the Eastern Statee they are superceding glass.

Among the advantages they have over glass are, that being susceptible of the HIGHEST POLISH, they transmit more rays of light, nothing having more transparency.

They are COOLER to the Eyes—a very important gain.

They are much harder than glass, and DO NOT SCRATCH.

The best quality of Crystal is found in Scotland and the Brazils, and is manufactured into lonses by the best workmen in England and France, for

Thomas Houseworth & Co.,

OPTICIANS,

No. 9 Montgomery street, Lick House,

Where they can be obtained, already fitted, in frames, or may be fitted to order.

Persons sending their Spectacles can have Pebbles inserted of the same grade as their glasses.

Illustrated Circular for style of frames sent to any address free.

☞ Pebbles sold as such by us, are Warranted.
15v3awbp3m

From 3 to 30 Horse Power. ALL SIZES Hoadley's PORTABLE Engines Sole Agents TREADWELL & Co

"THE HOADLEY" is the Perfection of the Portable Engine. For sale, with or without wheels, at Machinery Depot of TREADWELL & CO., Market, head of Front street, San Francisco. 14v24-eowbp

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ESTABLISHED 1851.

PACIFIC IRON WORKS,

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IRA P. RANKIN, A. P. BRAYTON,
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Steam Engines and Boilers,

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Mining Machinery of Every Description,

And all other classes of work generally done at first-class establishments, manufactured by us at the lowest prices, and of the best quality.

☞ Particular attention paid to Jobbing Work and Repairs.

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18v20-3m

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Foundry and Iron Works.

HINCKLEY & CO.,
MANUFACTURERS OF

STEAM ENGINES,

Quartz, Flour and Saw Mills,

Huyes' Improved Steam Pump, Brudle's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

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GEORGE T. PRACY,
MACHINE WORKS,
109 and 111 Mission Street,
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These Works have lately been increased, by additional Tools, and we are now able to turn out any kind of work, equal to and cheaper than any establishment in the State; that is to say:—

STEAM ENGINES,
Flour and Saw Mills,
QUARTZ MACHINERY
Printing Presses,

AND MACHINERY MADE OF EVERY DESCRIPTION.

Improved Safety Store Hoists,

Fitted with Ontting's Patent Cams, unequaled for safety, convenience and cheapness. This Hoist can be built for about half the price of any other in use. To be seen at HAWLEY & CO.'S.

ALSO, MANUFACTURER AND SOLE AGENT FOR
Pracy's Celebrated Governor.

TURNING LATHES, Etc., constantly on hand.
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WILLIAMS, ROOT & NEILSON,
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CROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR
WILCOX'S PATENT WATER LIFTERS.
Dunbar's Patent Self-Adjusting Steam Piston
PACKING, for new and old Cylinders.
And all kinds of Mining Machinery.
Front Street, between N and O streets,
SACRAMENTO CITY

PACIFIC
Rolling Mill Company,
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Established for the Manufacture of
RAILROAD AND OTHER IRON
—AND—
Every Variety of Shafting,
Embracing ALL SIZES of
Steamboat Shafts, Cranks, Piston and Connecting Rods, Car and Locomotive Axles and Frames
—ALSO—
HAMMERED IRON
Of every description and size.

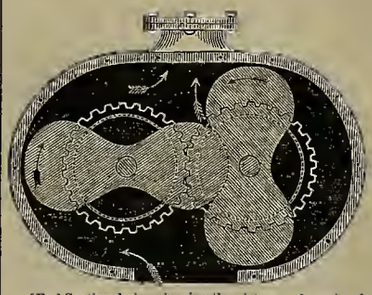
☞ Orders addressed to PACIFIC ROLLING MILL COMPANY Post Office, San Francisco, Cal., will receive prompt attention
☞ The highest price paid for Scrap Iron 9v14m

ROOT'S PATENT FORCE BLAST ROTARY BLOWER,

MANUFACTURED AT THE

GLOBE IRON WORKS,

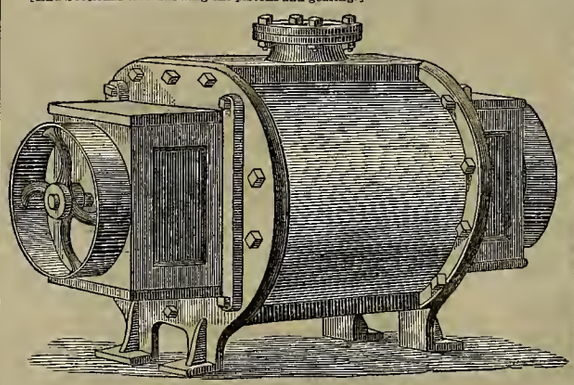
Stockton, Cal.



[End Sectional view showing the pistons and gearing.]

Awarded the First Premium at the Paris Exposition.—Patented November 1, 1864; July 24, 1866; and October 9, 1866.

Adapted for Smelting, Foundry, Mining and Steamships. Requires 50 Per Cent. less power than any Blower now in use.



One of these Blowers may he seen at W. T. Garratt & Co.'s Brass Foundry, San Francisco; Gould & Curry and Savage S. M. Co.'s, Nevada; and at C. P. R. R. Co.'s Works, Sacramento; and other places on this coast.

CAUTION.—Purchasers will find it to their advantage to apply direct to the Stockton Agency, as certain parties, not authorized to manufacture the Blower, have put in the market machines of inferior construction, which do not answer all the requirements of the genuine article. Quartz, Saw and Grist Mill, Iron, Stationary and Steamboat Engines, Horse-Power and Pumps, of all Sizes.

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BARTOL'S
STEAM TRAP.
Surface Condensers.
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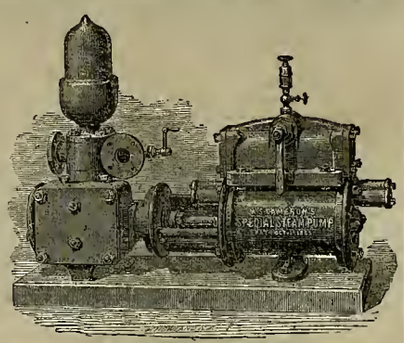

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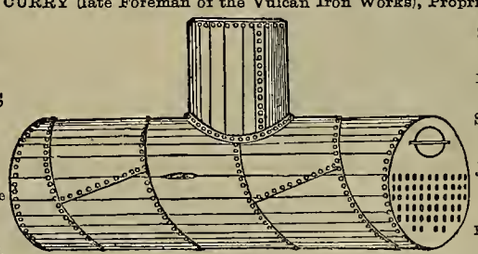
High and Low Pressure
BOILERS
of all descriptions.
SOLE
Manufacturers of the
CELEBRATED
SPIRAL BOILER.



Sheet Iron Work of every DESCRIPTION done at the Shortest Notice.
All kinds of
JOBBING
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Promptly Attended to.

22v22-3m

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Iron and Locomotive Works.

INCORPORATED.....APRIL 30, 1868.
CAPITAL.....$1,000,000

LOCATION OF WORKS:
Corner of Beale and Howard Streets,
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Manufacturers of Steam Engines, Quartz and Flour Mill Machinery, Steam Boilers (Marine, Locomotive and Stationary), Marine Engines (High and Low Pressure). All kinds of light and heavy Castings at lowest prices. Cams and Tappets, with chilled faces, guaranteed 40 per cent. more durable than ordinary iron.

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James D. Walker.

WM. H. TAYLOR.....President.
C. E. McLANE.....Vice President.
JOSEPH MOORE.....Superintendent.
LEWIS R. MEAD.....Secretary.
24v17-qy

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IRON CASTINGS of all descriptions at short notice.
NOTICE.—Particular attention paid to the making of Superior Shoes and Dies. 3v24-3m

Miners' Foundry and Machine Works,
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First Street, bet. Howard and Folsom, SAN FRANCISCO.
Machinery and Castings of all kinds.

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Quartz and Amalgamating Machinery,
SAW AND GRIST MILLS,
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Repairs upon all kinds of machinery promptly made and at moderate charges. Having unrivalled facilities, we are prepared to make to order, at short notice, everything required in our line.

Specimens of our work may he seen in all the mining regions on this coast.
6v24-3m PRESCOTT, SCHEIDEL & CO.

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ALL KINDS of Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch
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Marine, Locomotive and Stationary Engines Quartz Crushing and Amalgamating Machines, Mill Irons and Brass and Iron Castings, of every description, made to order.

Steamboat Repairing, Boiler Making, Turning and Finishing,
EXECUTED WITH DISPATCH.

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A complete set of Machinery of our own design and patent for extracting oil from Castor Bean, dispensing with Hair Cloth. Also Machinery for Flax Seed Oil, Mustard Seed Oil, and Sun Flower Seed Oil.

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28 Fremont street.....SAN FRANCISCO.
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Manufacturers of all kinds of Architectural and Ornamental Iron Work,
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Agricultural Work and all kinds of Blacksmithing and Jobbing done with promptness and at reasonable prices. Orders from the country promptly executed.
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MANUFACTURERS OF ALL KINDS OF
Machine Bolts, Bridge Bolts, and Ship or Band Bolts.
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THOMPSON BROTHERS,
EUREKA FOUNDRY,

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LIGHT AND HEAVY CASTINGS,
of every description, manufactured 24v16qr

Machinery.

Varney's Patent Amalgamator.

These Machines Stand Unrivaled.

For rapidity pulverizing and amalgamating ores, they have no equal. No effort has been, or will he spared, to have them constructed in the most perfect manner and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the apperture and between the grinding surfaces.—Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Setlers made on the same principle excel all others They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill-men are invited to examine these pans and setlers for themselves, at the office, 229 Fremont Street, San Francisco.

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For Railroad, Car, and Agricultural Shops, Etc., Etc.

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J. A. FAY & CO.,

14v24-6m Cincinnati, Ohio.

Notice is hereby given, that the copartnership heretofore existing between A. J. Severance, Charles W. Randall and J. Gns. Burt, under the firm name of "Severance, Holt & Co.," is this day dissolved by mutual consent. A. J. Severance, having purchased all the interest of his late partners, will continue the business of manufacturing and selling Diamond Drills, as before, under the style of A. J. Severance & Co.

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Office, 315 California street. A. J. SEVERANCE, CHAS. H. RANDALL, J. OUS. BURT.

22-v23-tf

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16v24tf

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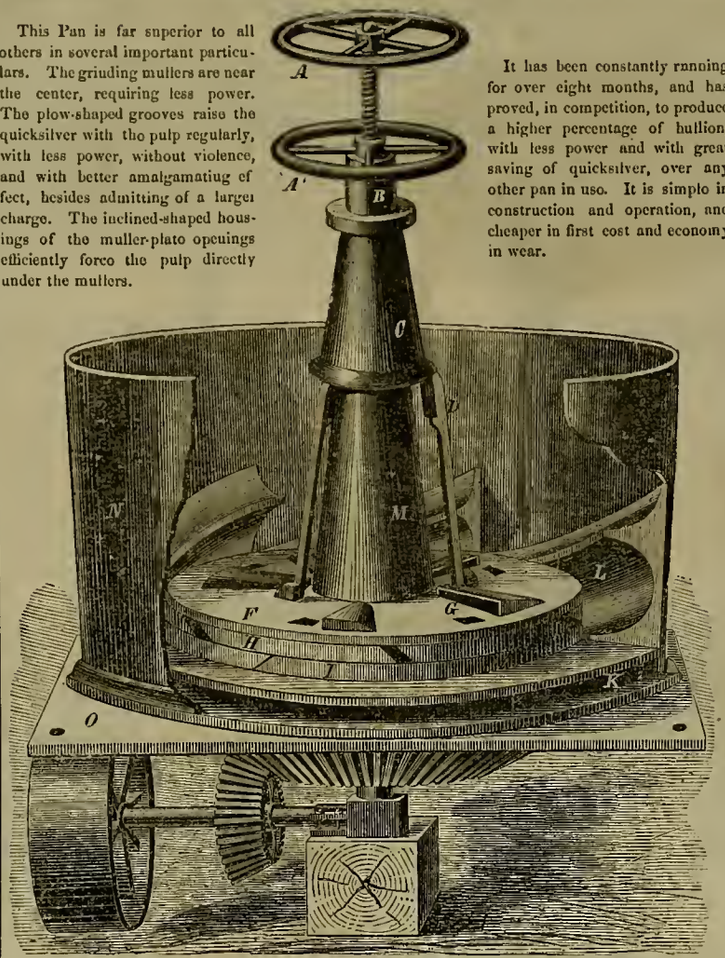
This Pan is far superior to all others in several important particulars. The grinding mullers are near the center, requiring less power. The plow-shaped grooves raise the quicksilver with the pulp regularly, with less power, without violence, and with better amalgamating effect, besides admitting of a larger charge. The inclined-shaped housings of the muller-plate openings efficiently force the pulp directly under the mullers.



It has been constantly running for over eight months, and has proved, in competition, to produce a higher percentage of bullion, with less power and with great saving of quicksilver, over any other pan in use. It is simple in construction and operation, and cheaper in first cost and economy in wear.

Manufactured at the Golden State Iron Works (Co-operative). 19 First street, S. F.

Where it can be examined and further particulars be learned; or persons may apply to the inventor and patentee, Mr. C. C. STEVENSON, at the Douglas Mine, Gold Hill, State of Nevada, where the Pans have long been in constant operation. 15v20-1mr, 1amtf

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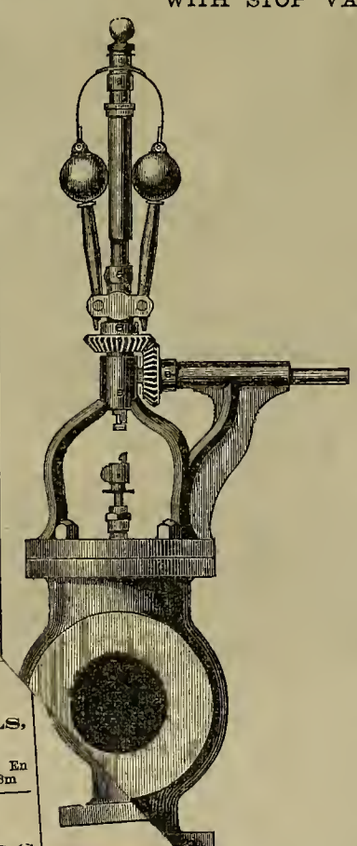
Improved Lamont Steam Engine Regulator,

WITH STOP VALVE ATTACHED.



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4v16-3m

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Our first issue for May consists of 24 pages, embracing FORTY-FIVE COLUMNS of important reading matter—mostly original and by first-class writers. Sample copies, post paid, 10 cts. Yearly subscription, in advance, $1. Subscribers to the MINING AND SCIENTIFIC PRESS or the PACIFIC RURAL PRESS will be supplied at half price.

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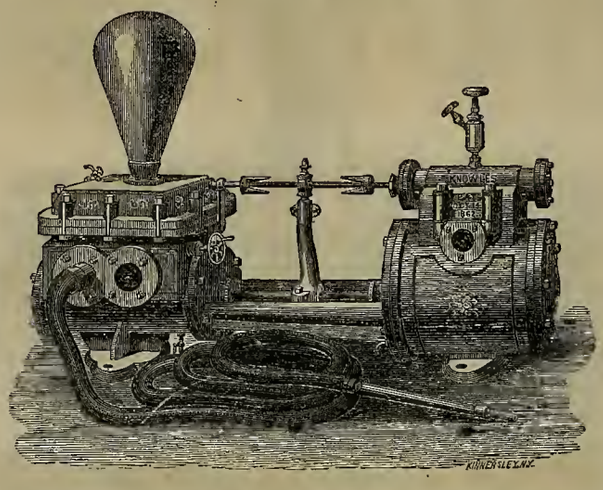
Extract from Official Report of Mechanics' Institute Fair of San Francisco, 1871.

"In the foregoing trials it appears that the most efficient Pump on exhibition is the KNOWLES. The workmanship on this Pump is also very good. We would therefore recommend that this Pump receive a Silver Medal, (Diploma awarded). Signed by the Committee:

G. W. DICKIE, H. B. ANGELL,
CHAS. R. STEIGER, W. EPPELSHEIMER, MELVILLE ATWOOD."

v113-awbp



It has no Cranks or Fly-Wheel, and has no dead points where it will stop, consequently it is always ready to start without using a starting-bar, and does not require hand-work to get it past the center. Will always start when the steam cylinder is filled with cold water of condensation.

The trial of Steam Pumps at the Eighth Industrial Fair in San Francisco, by a Committee of Five of the most thoroughly practical mechanics on this coast, showed the Knowles Pump to lose but 11½ per cent., while others lost as high as 40 per cent., showing great difference in economy.

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BLAKE'S PATENT STEAM PUMP.

From the Report of the Committee on Steam Pumps, at the Seventh Industrial Exhibition of the Mechanics' Institute, San Francisco

BLAKE'S STEAM PUMP.—This Pump yielded the best results as to the quantity of water discharged as compared with its measured capacity. The valves are of brass, and well arranged. The steam valves are well arranged for operating the pumps, either fast or slow.

We recommend that a Medal be awarded to it, as THE BEST STEAM PUMP. [Awarded a SILVER MEDAL, the first premium.] (Signed) JAS. SPIERS, WM. H. BIRCH.

From the Report of the Committee on Steam Pumps, at the Eighth (or *last*) Industrial Exhibition of the Mechanics' Institute, San Francisco:

BLAKE'S MINING PUMP.—This is an excellent Pump, well made, and gives a high per cent. of duty. We recommend a Diploma for this Pump. (Signed by the Committee.)

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[No other Steam Pump received other than a Diploma or honorable mention at the LAST Mechanics' Exhibition, *all other assertions to the contrary notwithstanding*. Hooker's Hand Pump was the *only* Pump of any kind whatsoever, that received a MEDAL and FIRST PREMIUM (highest award to pumps) at the *last* Exhibition, for which we are also selling agents.—*See official Report of the above Committee.*]

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Monday, April 29th, 1872.
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7.00 A. M. Overland Express Train for Sacramento, Marysville, Red Bluff, Colfax, Reno, Ogden and Omaha.

3.00 P. M. San Jose Passenger Train, stopping at all way Stations.

4.00 P. M.* Passenger Train for Stockton, Merced and Sacramento.

6.30 P. M. Overland Emigrant Train, Through Freight and Accommodation.

7.30 A. M. Steamer New World (from Broadway Wharf). Connecting at Vallejo with Trains of California Pacific Railroad.

4.00 P. M.* Sacramento Steamer (from Broadway Wharf). Connecting at Vallejo with trains of California Pacific Railroad.

2.00 P. M.* Stesmer Antelope, from Broadway Wharf, connecting at Donahue with Trains of S. F. and North Pacific Railroad.

8.00 A. M. Excursion Boat (Sundays only) from Broadway Wharf, connecting with Special Trains for points, reaching S. F. & N. P. R. R. for Cloverdale and intermediate points, returning to San Francisco by 7 P. M.

FRANCISCO, 7 00
OAKLAND BRANCH.—LEAVE SAN 4 00, 5 15, 6 30, 8 00, 8 10, 9 2-, 10 10 and 11 20 a. m., 12 10, 1 5- to Oakland only), 9.20 and *11 30 p. m. (9 20, 11 20 and 00 and 11 00 a. m., 1 30,
LEAVE BROOKLYN, *5 30, 6 40, 7
2 40, 4 55, 6 10, 7.40 and 10 10 p. m.), 9 10, 10 00, and 11 10 a.
LEAVE OAKLAND, *5 40, 6 50, 00 and 10 20 p. m.
m., 12 00, 1 40, 2 50, 3 50, 5 05, AVE SAN FRANCISCO, 7 20, 9 00,
ALAMEDA BRANCH , and 7 00 p. m. (7 20, 11 15, and
and 11 15 a. m., 1 30, 4 00
5 20 to Fruit Vale only), 7 00 and 10 45 a. m., and 3 30 p. m.
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MINING AND SCIENTIFIC PRESS.

An Illustrated Journal of Mining, Popular Science and Progressive Industry.

BY DEWEY & CO., Patent Solicitors.

SAN FRANCISCO, SATURDAY, JULY 13, 1872.

VOLUME XXV. Number 2.

Portable Drilling Machines.

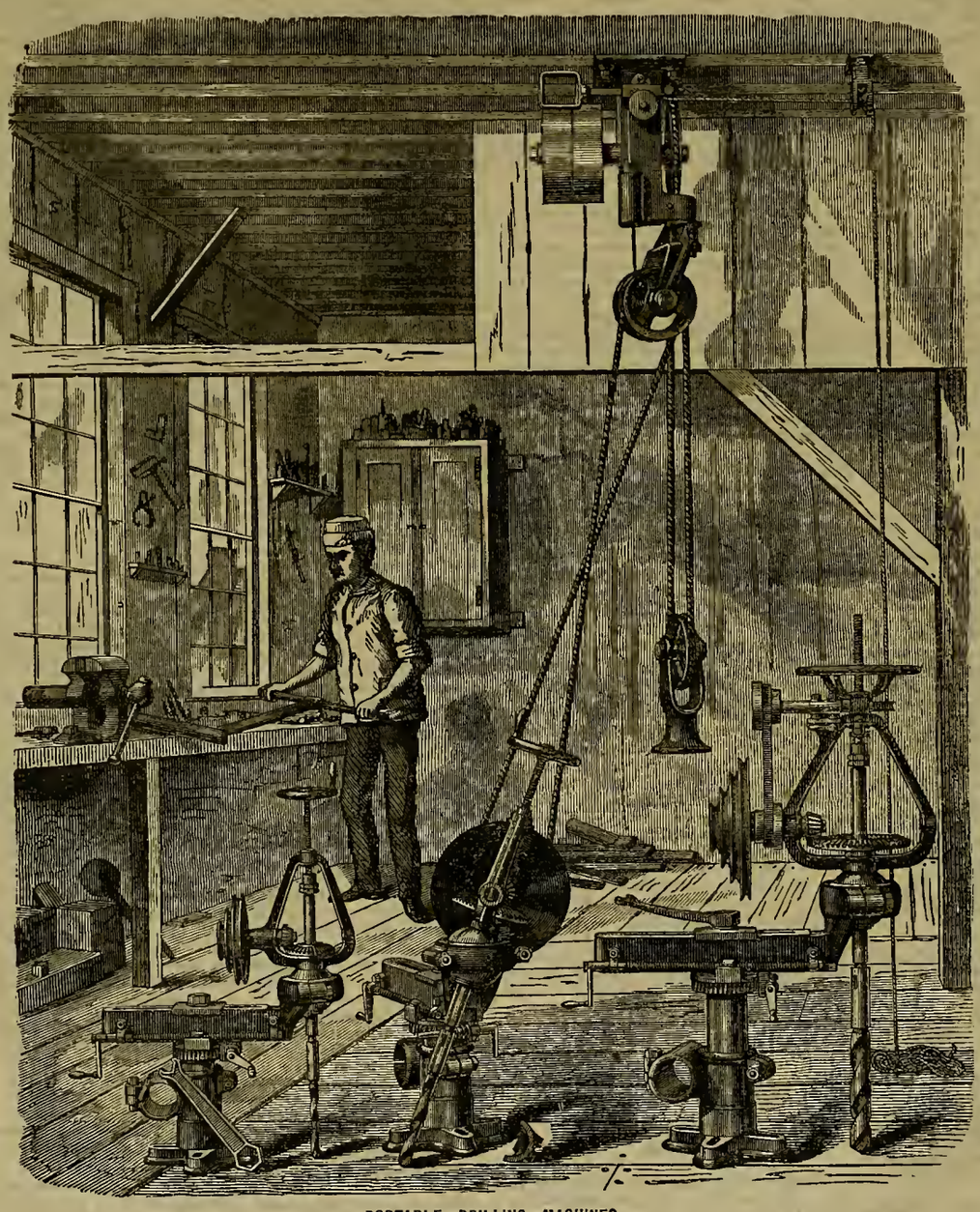
In all machine construction, much time and labor are wasted in drilling holes by hand, for the want of a practical machine driven by power, which would do the work. Our illustration represents three sizes of portable drilling machines, manufactured by Thorne and De Haven, of Philadelphia, which fulfill the conditions required of a tool for this purpose. They can be bolted to the work to be drilled, as easily as a ratchet brace can be rigged up for hand drilling, and can be driven by power in any position, at any distance, and in any direction from the driving apparatus.

Tarred rope is used for transmitting the power, and is found to be preferable in every respect to a round leather belt.

The operation as described by the *Scientific American*, is as follows: The power is transmitted, to the fast and loose pulleys on the countershaft, by means of a flat belt from the line shaft, in the usual way. On the other end of the countershaft is a grooved pulley, which gives motion to the rope which drives the drilling machine. The pulling side of this rope passes under an idler pulley held in a frame which rotates on a hollow stud, through which the rope passes. The rotation of this frame permits the rope to be led in any direction to the drill. A weighted idler is hung on the slack side of the belt, maintaining the tension and permitting the distance of the drilling machine to be varied at will. A weight of only 25 pounds hung there will prevent the rope from slipping on the pulleys when drilling a two and a half inch hole, in the solid, with an ordinary feed. When the rise and fall of this weighted idler does not give sufficient distance, additional lengths of rope can be inserted by means of the couplings used.

All the features of the machine are shown in the engraving. The hight of the post can be altered to suit different lengths of drills and chucks used in the spindle. The radial arm is traveled by a screw and rotated, on the post, by a worm and tangent wheel, giving great accuracy of adjustment and permitting this adjustment without the necessity of removing the rope from the cone pulley. The frame carrying the spindle, gears and cone pulley can be rotated so as to bring this pulley in line for the rope, in whatever position the machine may be. By removing a collar from the bottom of this frame, as shown, the spindle can be set to an angle with the base of the machine, in any direction. By holding the post in the clamp bearing on the side of the base, the machine will drill parallel to the base.

Both the driving apparatus and the drilling machine have been patented in this country and abroad. Any further information can be had by addressing Thorne & De Haven, 23d and Cherry streets, Philadelphia, Pa., or J. Austin & Co., general agents, 168 Fulton street, New York.



PORTABLE DRILLING MACHINES.

The surveying party which left San Diego two weeks ago have located fifteen miles of the San Diego and Texas road.

Arizona and the Apaches.

"More Apache outrages in Arizona" is a heading which we see in the papers of this coast about as frequently as that of "Railroads," etc. How long is this state of things to last, asks the unenlightened citizen to whom the ways and means of Commissions and Departments are unknown. Are these Indian thieves and murderers to bid defiance to a nation which considers itself the strongest in the world and which would go to war to protect the rights of a single American citizen on a foreign soil, while it permits the slaughter of hundreds within its own borders by a vacillating, weak policy.

The question may be asked, and with some reason perhaps, is anybody making any money out of the present state of affairs, for they have certainly continued as they are for a much longer time than is either pleasant or profitable to the common people. Still we may take the charitable view that it is a case of misdirected energy on the part of a few fanatics to reclaim these Indians, on the principle of somebody's theory but nobody's practice. And while these systems are being tried, the red devils pursue the even tenor of their way in their usual bloodthirsty spirit.

It is time that the pleasant little fiction of a "peace policy," which is held to by those who strive to gloss over and smooth down the realities of the case in Arizona, was done away with. Stringent means are all that will ever be successful, as any intelligent man, at all familiar with the Apaches or Arizona, knows full well. These Indians are not South Sea Islanders or natives of Borioboola-Gha, to be converted and made peaceable by the present of a hymn-book or beads; they are the ordinary home-made savage, not softened by distance, but the growth of American soil, and possessing all the vindictiveness and ferocity which characterizes their whole race. This "Peace Commissioner" system has become a nuisance; the people are tired of it and the more we know about it the more we want to improve our education by forgetting all about it.

Vincent Collyer's stupid policy was to have been perfected by General Howard, who with much better sense than his predecessor, comes back with the opinion that everybody who knew anything about the question, formed long ago, that the best way to subdue these Indians is to let them feel our power. General Howard saw it was no use to reason with the demons in human form; moral suasion was out of the question. He counselled the Government to let General Crook take them in hand a few months and we venture to say that the latter gentleman will do more in two months to "persuade" them to keep the peace than all the commissioners and red-tape enthusiasts ever heard of could do in ten years. General Howard says that no man can do anything well who is bound hand and foot by a multitude of specific orders, which may or may not apply to the situation. We are anxious to see this out-of-the-way Territory have a chance to show its worth, which under the present state of affairs it cannot do. All success to General Crook.

CORRESPONDENCE.

Meteorology of San Joaquin Valley.

EDITORS PRESS:—Observetions on temperature and rain in thie part of San Joaquin Valley, for the PRESS, are now completed for the first half of tbe current year, with the followiug

Rssults:

1872.	Average Temperature.				Highest Temp.	Lowest Temp.	Rain. Inches.
	7 A.M.	2 P.M.	9 P.M.	Mo Mean			
January....	40.20	52.30	46 15	46.21	61	27	2.38
February..	44.68	59.14	48.69	50.16	67	34	2.42
March.....	46.16	63.49	50.40	53.38	70	36	1.45
April.....	48.21	66.40	50.80	55 13	77	36	0.97
May.....	56.45	78.39	58.65	64.49	90	40	0.00
June.....	64.57	86.86	65.25	72.23	110	52	0.18

June has been marked by a few deys of excessive heet. On the 21st, at 2 P. M., the mercury in the ehade stood at 106°; on tbe 22d, 110°; the 23d, 104°. But let none of your readers for tbis reeaon dread tbe extreme heet of a Sen Joaquin Valley summer, even in June. These three were tbe only days in the moutb wben the temperature was above 100. Tbe higheet on the 24th was 86, and the greatest beat the remaining eix days ranged from 74 to 88 degrees. At 9 P. M. on tbe 27th, tbe thermometer etood at 58, or a difference of 52 degrees from the hotteet bour of the 22d. Yet we bear of no one wbo experienced any bad effects from thie remarkable renge of temperature in five deys. Sucb a

Heated Term

Usually comes but once eech snmmer, and laets only a few days. It generally occurs within two weeks after the summer solstice. A reason for this cau be seen in tbe fact tbat on June 21st, and a sbort time before and after that date, tbe eun's rays are more neerly perpendiculer to the surface of our valley than at any other period of the year. Its heat ie then naturally moet intense to us. But ae the sun lingera for eome time near the same point in the heavens, thie cauees the heet to *accumulate*, if one may be allowed to so express it. Consequently, our warmest weather is likely to occur witbin a short time after the aolstice.

In keeping with this principle, our greatest heat for eeveral years past has been as follows:

In '69, June 26th, 100 degrees; 27tb, 106; 28tb, 104; July 1st, 107. In '70, July 1st, 107; 2d, 110; 3d, 102; 4th, 106. In '71, June 29tb, 107.

In tbe present instence, it ceme just as

Old Sol Paused

In mid-heavens, wben he turned back from bis fartheet point north, and gazed upon the bonntiful crops with which bis genial influencee heve this year blessed our valley.

Well might his enthusiasm bave grown warm aa he looked for the last time before turning southward, upon our ripe and waving grain fields, and the huge stacks of wbeet and berley rapidly going up in our grain districts now ecattered from Kern river to Mt. Shasta, and at intervals filling all the space between the Sierrae end the Coaet Range. But if his enthusiasm alwaye waxes eo warm as he gazes on thie glorious sight, once a yeer is quite often enough for such hot, burning glances.

Though the beat of the 22d was as great as any we have experienced here for four years, the latter pert of June bas been quite cool. Indeed, parts of our morninge and evenings have been almost too cool to be pleasant. But theae cool nights bring us the most refresbing sleep, and etrengthen us to beer the heat of the day witbout prostration.

Onr intenee beet cannot last long at any one time, for by one of Nature's great laws of compensation, it is its own corrective. When our velley air ie eo intensely heated, it becomee very rare, and risee rapidly to a great hight. Then the cold, dense, heavy air from the mountains on eacb side of us, descende to fill thie comparative vecuum, and our air ie chilled again and purified.

It enablee the Pacific Oceen, elso, to contribute to our comfort and health. For its cooler air rushee as a brisk sea-breeze into our valley through the Golden Gate, as well es over the passes aud creste of the Coast Range. This is proved by the speciel prevalence of strong northwest winds, eoon efter all sucb heated terme. In thie way,

Our Mountains and Oceans are our Ventilators.

These are some of tbe rare advanteges of our climate—are eome of the correctivee wbich meke our inland valleys inhebitable by enabling our people to endure snch high degreee of heat, amounting in the sun even to 140° Fahrenheit, and yet enjoy the moet perfect health, and do as much hard work, perhaps, as any other people in the world.

As regards rain, the 0.18 of an inch in June makee tbe entire amount, measured at thie point, for the eeaeon, 15.92 inches. If to this amount we were allowed to add the additional rain which fell from ten to twenty milee east of us, it would probably swell the entire rainfall for thie diatrict of San Joequin valley to more then seventeen inchee.

It is probable that could we take the averege of the rainfall measured et Sacrameuto, Stockton, Grayson, and here, the peet aeeson, it would amount about to the average annual rainfall at Sacramento since 1849, that is, nineteen inchee. But not knowing the full amount that bas fallen at each of those points, we cennot give it exectly. Will not some one of your readers favor ue with the exact amount which has been measured at each of tboee points, now that we can expect no more rain until October. Our mutual observatione on the amount of rain for the season of '71–'72, are now ended, and it is only by change of our thoughts and conclusions, tbet we may bope to accomplish the most useful results.

J. W. A. W.

Turlock, July 1st, 1872.

Bullion Product for 1871.

The following is the estimate of the Commissioner of Mining Statistics of the Bullion product for 1871 as compared with the two preceding years:

	1869.	1870.	1871.
Arizona.....	$ 1,000,000	$ 800,000	$ 800,000
California....	22,500,000	25,000,000	20,000,000
Colorado.....	4,000,000	3,675,000	4,663,000
Idaho.....	7,000,000	6,000,000	5,000,000
Montana.....	9,000,000	9,100,000	8,050,000
Nevada.....	14,000,000	16,000,000	22,500,000
New Mexico..	500,000	500,000	500,000
Oregon and Washington	3,000,000	3,000,000	2,500,000
Wyoming.....		100,000	100,000
Utah.....		1,300,000	2,300,000
Other sources	500,000	525,000	250,000
Total.....	$61,5000,000	$66,000,000	$66,663,000

The only other estimate we have seen makes the prodnct $58,284,029, including British Columbia, but excluding Wyoming, New Mexico and the East. Tbat estimate is hased on the express returns, with an allowance for undervalnation and private shipments of 100 per cent. in Arizona, and 20 per cent. in California, Idaho and Montana. The amount thus obtained for Arizona is less than half the actual product; that for California is prohably correct, and has heen adonted in round numhers in the ahove estimate. Idaho and Montana, as everyhody knows who has traveled there, are not under the same conditions as California, in the ehipment of hullion, and consequently there is much more undervaluation and sending of precions metals through the U. S. mails and by private hands in these territories than in that State, where the communications are easier and the express and insnrance rates lower. The estimate to which we have referred allows $1,000,000 for shipments of ores and hase hullion from Utah, whereas the value of ores shipped from that territory during the year was ahout $1,620,900, and the value of the hase hullion $316,150 (the weights carried by rail heing 10,806 tons of the former, and 2,378 tons of the latter) to say nothing of about $500,000, the value of the lead. Again, Colorado is set down in the estimate referred to, at $3,046,917; whereas the careful statement already puhlished in onr columns shows the product of that Territory to have been $4,663,000.

Every item in the Commissioner's estimate (except that of Idaho) reets on satisfactory evidence, of which the express shipments form a part, hut not the whole. The smart statisticans of San Francisco are invited to try their hands at the method they followed so hrilliantly last year, of adding coinage to exports, by way of determining the product. The total gold and silver coinage of 1871, wes $24,070,323, and the exports of hullion, $26,233,912, the sum heing $50,304,235, or eigbt millione less than the estimate which we can positively prove to he from six to eight millions too low. It is true, that they employ in their calculations, not the coinage, hut the domestic deposits for coinage; but this heing a atill emaller amount, only makes the matter worse. The Commissioner's report, now in the hands of the Congressional printer, discusses the snhject more at length. We reprodnce his results merely, as of general interest.—*Engineering and Mining Journal.*

Mining.

The following were read hefore *The Institute of Mining Engineers*, at their late sessions in New York:

Johu A. Chnrch of New York read a paper on "Economical Results in the Treatment of Gold and Silver ores by Fusion." In thie paper the results attained in the works at Lend, in Austria, were compared with those obtained by the mill process in Colorado. The ores are the same, heing sulphides of iron, copper, lead and zinc in a rock which is mainly siliceous. The Austrian ores are much poorer than ours, containing only ¾ of an ounce of gold and 1¼ ounces of silver to the ton of 2,000 ponnds. Their value is therefore ahout $10.13 a ton. After describing tbe process nsed, which is merely the ordinary fusion of pyritiferons ores with lead, the writer said that in one fusion 73 per cent. of the silver and 90 per cent. of the gold is ohtained, while subsequent fusions hring the yield up to 96 per cent. of the silver and 99 por cent. of the gold. These are the results of 14 years' practice. Beside the precious metals, there is ahont 5 per cent. of copper in the ore, and this is ohtained in a matte. The cost is in materials, 4¼ daye' lahor, 80 hushels of charcoal (about 800 ponnds), three-quarters of a cord of wood and 10 pounds of lead. Estimating these quantities at the Colorado prices, the cost of treatment there would be $20 to $22 a ton. The richer class of Colorado ore contains on an average 3 ounces of gold and 8¼ ounces of silver to the ton, worth ahout $70. Treated hy this process there would he ahout $40 a ton for mining expenses and profit, hesides all the copper, which is a much hetter showing than the mills have yet made, The common ore of the territory is worth about $26 a ton, in gold and silver. The mills extract only abont $11 of this, or when the tailings are sold $19 a ton at the highest, at a cost which eqnals about the yield. Treated hy concentration and smelting this ore would cost ahont $20 a ton to work, and leave a profit of about $4 a ton, which would give excellent dividends, as the amount of ore raised is very large. This profit does not include the value of the copper in the matte. A great deal is said about the fancied impossihility of treating ordinary Western ores by smelting, hnt when this method is placed in good hands and receives one tenth the attention and persistent effort which milling has had, we may he sure that methods which have long heen euccessful elsewhere will not fail here.

The Great Blue Gravel Company.

This company was incorporated a short time ago with a capital of $5,000,000. The central location of the works is at Pinkham Hill, some two and a half miles from the United States ranch of Peyton Powell, some sixteen miles from here, on the Forest Hill divide. The company have bonded the following gravel mining tracts of land: These claims are known as the Rongh and Ready claims of Wiley & Co., the Big Channel Company's claims, the Wiley & Seifer claims and the Spring Garden claims of H. S. Bryan; making from 900 to 1,000 acres, and extending along the gravel channel of an old dead river some two miles, which is ahout 1,500 feet hetween the rim rocks, as determined hy actual prospecting, for a full mile and a half. Many tunnels have penetrated the channel, and found good paying gravel, but they were all too high to drain the hasin or permit the small companies to fathom the hottom or determine the depth and value of the deposit to and on the bed-rock. It is the firm helief of old miners that this channel, as defined by the rim rock which has heen cut and traced for tbe above distance, is the hed of what Hittel calls the Big Blue, one of the dead rivers of California. Indeed, at one point on this ground a shaft has been sunk 160 feet deep, through pay streake of gravel, encountering driftwood that showed plainly that it is the hed of some old river of greater magnitude than any of the living streams in these mountains of to-day. All this ground the company propose to drain hy tbe aid of hoisting works and pumps, propelled hy a powerful engiue, or at least to run an incline shaft to the hottom from the end of the tunnel at Pinkham Hill, and determine the depth and character of the deposit down to the hed-rock. The machinery and eugine is nearly completed, at the Miners' Foundry, in San Francieco, and will he on the ground and at work in a few weeks. Wm. Higby is President and Charles Dewey, Treasurer, both of San Francisco where the stock is chiefly owned, and Peyton Powell, of this county, is Superintendent. We take a deep interest in this enterprise, as ehonld all our people, and will try to keep onr readers posted on the developments as the work progresses. If it should prove a success it will be almost to a certainty the pioneer of still vaster developments of the kind on that divide.—*Auburn Herald.*

THE State Mineralogist of Wisconsin says that if the extensive ore heds in the vicinity of Black River Falls ebould he worked, enough iron could he manufactured in that region to eupply the wants of the United States for a thousand years to come.

Stamp Duties Abolished.

Tbe amendments to the Internal Revenue Act during the lest eession of Congress abolish nearly all the stamp dutiee after the 1st of October next. The tex of two ceute on checks, drefts, and ordere is still reteined, but the following instruments

No longer Require Stamps.

Coutrects for insurance against accidental injuries. Affidavite.

All agreements or contracts or renewal of the same.

Appraieements, of value or damages, or for any other purpoee.

Aseignments, of a lease, mortgage, policy of inenrance, or anything else.

Bills of exchenge, foreign, inland, letters of credit, or anything of tbat kind now taxed by stamps.

Bills of leding end receipts, in the United Statee or for anywhere else.

Bills of eale, of any kind.

Bonds of indemnification, of any kind.

Bond of administrator or guardian, or auything that bas the name of bond on it and now taxed by etemp.

Brokers' notee.

Certificetes of measurement of anything.

Certificates, of etock, profits, damege, deposit, or any other kind of certificate now taxed by stamp.

Charter or its renewal or a charter party of any kind.

All contrects or agreements.

Conveyances and any part of tbe work of conveying deede.

Endorsement of any negotiable or not negotiable instrument.

Entry, for consumption, warehousing, or withdrawal.

Gaugers' returns.

Insurence policies, contracts, tickets, renewale, etc., (life, merine, inlend and fire.)

Leaee. All througb the lease list is aboliebed.

Legal documents. Writ or other process, confeasion of judgment, cognovit, appeals, warrante, etc., letters of administration, testamentary, etc.

Manifest at Custom House, or anywbere else, or for auy purpose.

Mortgage, of eny kind.

Passage ticket, to any place in the world.

Pawnere' checks.

Power of attorney for any purpose.

Probate of will, of any kind.

Promieeory note for anything.

Protest of any kind.

Quit claim deed.

Receipt. Now generally exempt, and if inclnded in present law in any case, will be hereafter exempt.

Sheriffs' returns.

Trust deed.

Warehouse receipt.

Warrant of attorney.

Weigbers' return, of auy character.

Silver Zone District.

The new and very rich discoveries of silver made in the Silver Zone district situated twenty due miles south of Toano, a station on the line of the Central Pacific Railroad is creating great excitement wherever known. This district is in the eastern portion of Elko county, in this State. Major Roht. M. Goldman, one of the original discoverers of this vast deposit of silver ore is very enthusiastic in his opinions of the merits of that district. His ohject in coming to this portion of the State is to induce capitalists to visit the district and eee and examine the mines for themselves. He hrought with him several specimens of rock from different ledges on the lode, and left a few here to he assayed at the Auhurn mill. He firmly believes that the assays will he from $200 to $5,000 per ton, and these specimens are mostly croppings from the top of the ledges. The major portion he took with him to Virginia to show to practical miners and capitalists there. The Silver Zone, Wilson, Currier and Goldman, Poor Man's, Star of the West, Gov. Bradley and Delmonico are the names of the most prominent ledges that have thus far heen located. Five springs in the immediate vicinity furnish drinking water in abundance. If the report of the wonderful richness of this district as given by the Mejor is correct, and we helieve it is, there will be a tremendous excitement in that seotion ere long.—*Reno State Journal.*

ENGLISH RAILS.—The United States are gradnelly monopolizing the supply of Englisb rails. During the firet four months of this year, the importetion of rails from Great Britain to thie country was 180,193 tons, being an increase over the eame period in 1871, 44,772 tons, while the exporte to the Englisb posseesions and the wbole world besides only amounted to 99,068 tons; showing that the United States are taking abont two-thirds of all the rails exported from Great Britain.

A narrow gauge railroad, 147 miles in length, is being constrncted from St. Louis to Cario.

Scientific Progress.

Recording Musical Notes.

Each of the many vibrations that have concurred in the production of a musical note can be recorded so as to be visible to a moderately large audience, by the use of no other apparatus than a piece of chalk and an ordinary blackboard.

The peculiarly shrill, disagreeable sound often heard when a slate pencil or piece of chalk is drawn rapidly over a slate, is well known. It occurs when the contact between the pencil and the slate is not continuous. Each time the pencil touches the slate a slight tap is produced, and these taps, following each other rapidly, link themselves into a sound more or less musical. They may be legibly recorded as follows:—

An ordinary chalk crayon is held loosely in the hand near one end, and inclined so that the acute angle made by the other end with the surface of a blackboard is about 30°. If now the crayon be pushed in the direction of the obtuse angle, it will be set into rapid vibrations, and, striking against the board at nearly equal intervals, will produce a musical note. At each contact a legible mark is make on the board. By giving the chalk a uniform velocity, the pitch of the sound is kept quite constant, and the exact number of vibrations corresponding to any particular note, can be readily ascertained by counting the marks impressed on the board in a given time.

A very little practice will enable one to produce these effects quite readily. By altering the inclination and pressure, the pitch of the note can be varied at will, and the class or audience enabled to see the cause of the variations in notes of different pitch. In many cases, by a close inspection of the marks, it will be seen that each of them has been formed by two or more separate marks, one of which is generally more prominent than the others. This corresponds to the fundamental tone of the sound, the others to the overtones, and thus we have a visible proof of the cause of the difference in quality observable in certain notes of the same pitch. By considerable practice, the variations in the pitch of the notes can be obtained so readily that a tune may even be evoked from the board, which after the performance will contain a physical analysis of the individual notes.

Star Depths.—The mind of man utterly fails to realize the immensity of space, and no one unaccustomed to the use of the telescope can have any adequate idea of the difference presented by the heavens when viewed by the naked eye, even upon a clear night, and the scene which is disclosed to the eye and mind of the astronomer. How difficult it is to realize that each star in the solemn depths of the universe is a sun like our sun, but separated one from each other and our own by distances almost beyond the power of man to compute!

Only about 3,000 stars can be distinctly seen and counted by the naked eye, while an ordinary telescope reveals the presence of something like 350,000. Herschel'e great 18-in. instrument, it ie estimated, shows 180,000,000, while the great Rosse telescope, by its vast penetrating power, is supposed to open up to our vieion not less than 700,000,000! And yet when the whole heavens is swept by this telescope, we have only penetrated a distance into space from our standpoint on this globe, which, when compared to the immensity beyond, is no more than the space occupied by the room where we write or read is to the immensity of depth penetrated by the last mentioned instrument!

Future Eclipses of the Sun.—Mr. Robert T. Paine communicates to *Silliman's Journal* a list of eclipses visible in the United States during the remainder of this century. The first central eclipse will be that of September 29, 1875, which will be annular in part of the State of New York and in four of the New England States. The duration of the ring on the central line will be three minutes thirty-nine seconds. At Boston it will be only two minutes twenty-nine seconds. The belt of country over which the annular eclipse will extend will be 110 miles wide. Within it are situated the observatories of Hamilton College, Albany, Harvard University, Amherst College, and Dartmouth College. The first total eclipse will be that of July 29, 1878, when the shadow of the moon will pass over British Columbia, Montana, Colorado, Texas and Cuba. At Denver, Colorado, the eclipse will be total nearly three minutes.

Determination of Hight of Auroras.—Dr. J. G. Galle, director of the observatory at Breslau, celebrated as being the first to recognize the planet Neptune in the telescope, has lately given a new method of determinging the hight of the aurora. It is founded upon the hypothesis that the rays which form the auroral crown are parallel to the magnet pole. The deviation from apparent parallelism he considers dne to parallax, and thus calculates the distance of the rays. From a number of observations made by himself and Dr. Reimann he finds that the direction of the rays in the aurora of February 4, deviated from the magnetic zenith by from 3° 6′ to 10° 2′. He thus finds for the different rays hights varying from 150 to 280 miles.

Reversal of Spectrum Lines of Metallic Vapors.

While photographing the most actinic ray in the magnesium spectrum—a triple band situated between H and L in the ultra-violet—Cornu observed that, on increasing the intensity of the induction spark, not only was a longer exposure required, but the band became a quintuple one, the two least refrangible rays being doubled. The author having obtained this effect in the visible spectrum also, attributed it to a reversal of these doubled lines, produced by an atmosphere of incandescent metallic vapor surrounding the path of the spark. Indeed, by covering one-half the slit of the spectroscope with the metallic spark from a weak coil, and the other with the spark from a powerful coil, it is possible to see the rays superposed, the bright and the reversed line being continuous. For the positive pole Cornu uses a carbon disk in which are cavities for the reception of the metal. The negative carbon is lowered until the spark passes, and then raised until the arc is 4 or 5 millimeters long. An image of this spark is formed on the slit by means of a lens, the spectrum, in the case of magnesium, showing the triple green ray *b* with great sharpness. On lowering now the upper carbon, the bands widen, become ill-defined, and soon a fine black line appears on the least refrangible of them. If the lowering of the carbon be continued, the second and at last the third are reversed also. In this way the author has succeeded in reversing rays in the spectra of sodium, thallium, lead, silver, aluminum, magnesium, cadmium, zinc and copper; the facility of reversal being in the order given. The result was also obtained with sodium and lithium chlorides. Applying this discovery to the sun, the author concludes: (1) that an exceedingly thin stratum of vapor suffices for the reversal; one, the thickness which could not possibly be seen from the earth; and (2) that it is by no means necessary to suppose a continuous atmosphere, even of this thinness, around the sun; the absorption may be purely local, produced spontaneously by exterior cooling around each incandescent point—*Comptes Rendus.*

Germination—Its Relation to Light.—The theory of the germination of plants, which has been heretofore admitted requires that the germinating seed be excluded from direct sunlight. Late experiments appear to establish the fact that, while exclusion from the luminous rays of the solar spectrum is necessary to the healthy germination of seeds, yet the chemical or actinic rays are indispensable to the process. These penetrate much deeper into the soil than do the luminous rays. The exclusion of the chemical rays, and not the absence of oxygen alone, is assumed to be the cause of seeds failing to grow when buried too deeply in the earth. Will our agricultural colleges settle this question by careful experiments? Let us have all that can be known of the mysteries of plant life.

Appropriation for Astronomical Purposes. The General Appropriation Act passed at the last session of Congress sets aside $75,000 for the establishment of an astronomical base, and the continuance of military and geographical surveys and explorations west of the 100th meridian of longitude. These surveys and explorations are under the charge of Lieutenant George M. Wheeler, who headed the expedition that explored a line last year from Elko to the Mexican Boundary. He was to start from Washington about a week ago to continue his work. Much is expected from his explorations, and many inquiries have been made for printed copies of his last report, but the Government printing office has not yet turned them out.

Anomalous Production of Ozone.—Prof. H. H. Crofts, of Toronto, has repeatedly found ozone produced during the crystallization of iodic acid. The evolution of ozone does not commence until crystals are formed, and even when the first few form, no ozone has been noticed. But when the crystallization has set in fully, the evolution of ozone is remarkable, obvious to the sense of smell and reacting strongly on iodized starch paper. The Professor is unable to give an explanation of the phenomenon.

Change of Habit.—*Loranthus macranthus* of New Zealand, parasitic there upon trees of *Rutaceæ* and *Violaceæ*, is deserting these in favor of trees introduced by the European settlers, such as hawthorn, plum, peach, and especially laburnum, which was introduced as lately as 1859. Its flowers are abundantly visited by the European honey-bee.—*Garden.*

Petroleum in San Domingo.—Prof. Gabb finds a locality, the only one in the Dominican Republic, of bituminous products on the island of Santo Domingo. The spot "reminds him strikingly of the California petroleum springs, not less in the existance of oil, pitch and gas, than in the usual broken-down steam engine and fragments of artesian well tools lying scattered about."

Copper in Cocoa.—Careful chemical analyses show that cocoa and chocolate always contain a small percentage of copper. The husks of the cocoa have been found to contain as high as 0.025 per cent. of copper, while the kernel of the bean only contained 0.004. Samples of chocolate contained 0.0125 of copper.

Mechanical Progress.

Improved Iron Processes.

Scarcely a month passes without the announcement of some alleged or real improvement in the methods of smelting iron, converting iron into steel, or working up iron into the various forms called for in the consumption of that important article.

A new and cheap alloy of iron, called Sterling Metal, lately produced, is reported to be harder than cast-steel, and, if so, will come into use for edge tools. The process of converting pig iron into wrought iron, in a puddling furnace worked by machinery, is coming into favor, saving much hand labor. The conversion of cast iron into steel by puddling, at one operation, is also becoming important. The slag of iron foundries, heretofore valueless, is now pulverized and mixed with lime, to make bricks, artificial stone, and ornamental articles of many kinds. In an Iron smelting furnace lately tried at Hudson, New York, the smoke passes out not at the top, as in the ordinary furnaces, but through flues nine feet below the top, and it is said that there is a saving of twenty-five per cent. in the quantity of coal required to make a ton of pig iron. Nearly every periodical devoted to the industrial arts tells of late progress of inventions in the working of iron.

Krigar's Cupola Furnace.—Henry Krigar, of Berlin, constructs his cupola so that the lower part of the earth is not below the crucible, but by its side, and connected with it by a slanting canal, which is about three inches high, six to eight inches long, and as wide as the cupola. This arrangement prevents any coke or half melted iron from falling down in the hearth, which is only accessible to melted iron and slag, and forms for them a kind of sump or receiver, which in no way interferes with the regular working of the two upper parts of the cupola. This very simple construction has proved highly successful, and its great advantages are a saving of fuel, a uniformly hot and liquid iron, and an increased yield per diem, as the regular smelting operation is never interrupted. Krigar's cupola can, therefore, be recommended not only to foundries, but also to Bessemer works and to such forges as use the Dank's puddling furnace with liquid iron, as a uniform heat and quality of each charge are essential for their success.—*Engineering.*

Advantage of Labor-Saving Machinery.—In no way has the beneficial effect of labor-saving machines in improving the condition of workmen been better exemplified than by the application of the sewing machine to the manufacture of shoes. The workmen of Lynn, Massachusetts, who in 1862 were earning 10 dollars a week without the assistance of the leather sewing machine, are now, it is reported, earning 50 dollars a week with the aid of this useful apparatus. The inventor, who in 1862 was threatened with mob violence, is now considered by the workmen as their greatest benefactor. Within the last ten years the town of Lynn has doubled in population and taxable property, and it is estimated that 44,000,000 dollars have been saved to the whole country by the invention of the sewing-machine as apparatus as applied to the manufacture of articles of leather.

The Different Methods of Making Steel.—Mr. Thomas M. Drown gives the following classification of the different methods of making steel: I. Crude steel: 1. From the ore direct, by reduction and carbouization. Ore steel 2. From pig-iron by decarburization. Pig-iron steel. *(a)* By means of gaseous oxidizing agents (air, steam, etc.) Example: Bessemer process. *(b)* By means of solid, oxidizing agents (ore, saltpetre, etc.) Ex: puddling process, Heaton process, etc. 3. From wrought iron by carburization. Wrought iron, steel. *(a)* By fusion with pig-iron. Ex: Martin-process. *(b)* By fusion with coal or carbonaceous matter. Ex: Mushet's process, Indian process. *(c)* By heating in charcoal, without fusion. Ex: Cementation process. *(d)* By heating in atmosphere of carburetted hydrogen, without fusion. Ex: Macintosh process. II. Fine Steel: 1. By fagottiug crude steel. Shear steel. 2. By remelting crude steel. Cast steel.

An Alloy to Unite Iron and Brass.—C. Mene communicates the fact that an alloy, composed of 3 parts of tin, 39.5 copper and 7.5 parts of zinc, is very well adapted for joining brass or copper to iron and steel. The author suggests likewise the propriety of increasing the proportion of zinc in the mixture to 10 parts, since the heat of the smelting operation volatilizes enough of it to bring it down to the amount named.

Stretching of Chains.—Professor Trowbridge, of Yale College, has stated that at the Novelty works, N. Y., he once made a chain a thousand feet long, to be used for pulling a load of ten tons up an incline five hundred feet long and one hundred feet high. In one year he took out, little by little, sixteen feet of slack caused by stretching. The chain got stretched out in time, though, and then did not alter.

Mechanical Progress.—The surprising advances made by the arts at the present time—advances which are made at a rate far exceeding that of former times—is readily accounted for by the reflex action which each invention has upon others. Taking the steam engine as an example, it will readily be seen that if the most perfect drawing of one of our modern steam engines had been presented to the mechanic of the seventeenth century it would not have enabled them to construct one like it. The planing machine, the slide-lathe, the power punch, the shears, and numerous other machines had to be invented before the modern steam engine could become a possibility. To them the boring out of a true cylinder, six feet in diameter and eight feet long, would have been an utter impossibility. Our modern steamships, locomotives and factories depend for their success not only upon the invention of steam engines and special machines, but upon the ability of our machine shops to construct these engines and machines after they have been invented.

Mammoth Car.—Among the mechanical novelties to be seen at the Grand Central Depot, in New York, is a steam railway car 70 ft. wide, which travels on a track of corresponding width. This great vehicle is made in the form of a low platform car, and the track on which it runs is provided with four rails, extending from Fourth Avenue to Madison Avenue. The car is used for the lateral transfer of passenger cars from the main tracks of the Hudson River, Harlem and New Haven Railways to the various side tracks, thus avoiding the use of turntables. The car is propelled by steam, the engine and boiler being contained within a sheet-iron house carried on one side of the machine. The cars to be transferred are run upon the great car; steam is then turned on and the huge machine trots off with its burden with as much ease as a horse draws a buggy. The machine is supported on eight wheels, arranged on independent axles. There are in addition four driving wheels arranged upon one axle.

Car Starter—William M. Stratton and William E. Stratton, of West Troy, N. Y., have recently patented an improvement in apparatus for storing up, in a spring or springs, the power expended in arresting the motion of the car, to be used in setting it in motion again, and it consists in having the drum, which is employed to wind up the tension cord of the spring, made with such devices and arranged in such a manner that it may be locked and held after being detached from the gearing connected with the axle to wind it up, so that the car may be allow to run awhile before the power of the spring is applied; thus making the apparatus capable of retaining the power stored up in the spring while the car is going down a descending grade and using it on an ascending grade, the car running free between the grades. The invention also consists in certain novel devices, for thus detaching, holding, and locking the winding drum.

The Baltimore Tunnel.—Among the important tunneling operations now in progress, is the railroad tunnel now being constructed under the city of Baltimore. The necessity of such a work must be apparent to every one who has had occasion to pass from one railroad terminus to the other on the opposite side of that city, by the slow horse-car conveyance now in use there. This tunnel will be 1¼ miles in length and is being pushed forward as rapidly as the nature of the work will admit. The work of excavation is being carried on at the rate of about 100 feet per day, at eleven different points.

The tunnel for the most part, passes under the streets. The excavation goes on from the surface; permanent side walls are constructed, the excavation arched over, and the road way or other earth area replaced. Over 1,800 feet had been completed and arched over, up to the middle of June.

A Pressure Gauge for Guns.—The principal suggested by Tresca's experiments on the flow of solids has been applied in practice for determining the pressure produced in the bore of large guns. A cylindrical hole, bored into the gun, is filled by a block of lead, supported behind by a steel block, through which is a small cylindrical hole. When pressure acts upon the lead, a portion of it is forced into the hole in the steel block. By estimating the volume of lead found in the cavity after a discharge, a means of measuring the pressure exerted within the gun is given.

The Danks' Furnace.—The Cincinnati Railway Iron Works, where nine of the Danks' puddlers are in use, have abandoned the melting of pig metal in the furnace itself, and now melt in a blast furnace, from whence the metal is conveyed to the puddling machines. By this means it is claimed that a saving of 50 per cent. can be made in time, enabling them to dispose of two heats per hour in each furnace, running 500-lb. blooms. By thorough acquaintance with the furnace it is found that light iron can be made almost as readily as rails.

Boston is likely to be the first city in the East to invest in a narrow-gauge railway. It proposes a line to run from the city to Revere and Lynn beaches.

MINING SUMMARY.

THE following is mostly condensed from journals published in the interior, in proximity to the mines mentioned

California.

ALPINE COUNTY.

Alpine *Chronicle*, June 29: GLOBE.—The shaft having been sunk 50 ft., as far as present pumping power will permit. Drifting was resumed this week, and some good copper ore taken out.

EXCHEQUER MILL.—Plans are being prepared for the enlargemsnt and remodeling of this mill. A turbine is to he added.

SCHENECTADY.—The connection hetwcen the upper and lower tunnel was made this wsek; thns facilitating getting ont the ore.

HOISTING WORKS.—The hoisting works for the Exchequer and I X L mines will arrive in about 3 weeks per rail from New York.

AMADOR COUNTY.

AMADOR.—Amador *Dispatch*, July 6: The new hoisting works are progressing finely, and the fire in the shaft is thought to be extinguished.

KENNEDY.—The Kennedy after a run of 28 days cleaned up $10,000. The rock is becomiug richer aud more abundant as the mine is developed.

TOO BIG.—Last week we stated that the hydraulic claims of Rice & Co., Upper Rancheria had yielded $9,000 for the winter's work. This we have since learned is not the fact; that while the claim yielded fair returns, it did not rsach near the figures stated.

CALAVERAS COUNTY.

OHIO CONS. CO.—Calaveras *Chronicle*, July 6: This Co. at West Point are driving one of the finest tunnels in the Co., through hard granite, to cross cut the leads in the hill.

The property is composed of 3 parallel veins varying from 10 inohes to 3 ft. in width. The walls of the ledges are distinctly defined in all of them.

UPPER COUNTY ITEMS.—The Woodhouse, helow Sandy Gulch, has nearly 400 tons of ore on its dumps, worth $15 psr ton. The vsin is from 4 to 6 ft. wide and can he traced for milss. A 10-stamp mill will be erected this season. Running tnnnel ... Steam hoisting worke are going up on the Sanderson....Petticoat stoping high grade ore, and extsnding levels....Gamhle & Co. had a heavy clean-up recently at the rate of over $20 per ton....J. Herzer is now crushing a large quantity of very handsome stone....Wolverine has commenced stoping. The owners intend to replace the portahle engine on the main shaft hy a powerful stationary engine, and start sinking forthwith....Chas. Hœrchner & Co. have out considerahle of that rich ore....The Josephine, hetween the Forks, has becn bonded for $6,000.... Frank Williams crushed 20 tons of ore, yielding $40 per ton....A. M. Harris worked 50 lbe. of sulphurets from the vioinity of the Rattlesnake, producing 72 cents per pound....J. H. Reed & Co. are sinking a fine shaft on the former French Lead; down about 25 ft....Bartolo crushed a tsst lot which oontained at lsast 20 per cent. of pure granite; $60 per ton, 15 tons. The vein in the Bartolo shaft is widening; hanging wall, soft....Blazing Star is improving wouderfully by sinking. Shaft 100 ft. Walls about 6 ft. apart and pay ore nearly 4 ft. wide. The ore is worth $125 per ton....A. S. F. Co. bave started a large tunnel at the old Forrest mill, 6 miles ahove West Point, to prospect a lava ridge.

RICH QUARTZ.—On Tuesday we were shown some very rich specimens of quartz from a ledge recently discovered in the Whisky Slide dist. The rock shown us was among the richest we ever saw. Hopper and Harper, are the owners of the mine, which is located on Jeeus Maria creek near Horse Thief Bar. A shaft 45 ft. deep has heen sunk on the ledge, which varies from 1 to 5 ft. in thickness. A tunnel is also being run into the hill, following the lead, which will he 200 ft. helow the surface when driven ahead a short distance.

GOOD YIELD.—Twelve tons of quartz from Haupt & McBath's mine, Musquito Gulch, netted $60 per ton. The rock was from a prospecting shaft which has been eunk only ahout 30 ft.

PETTICOAT.—The main ehaft is to be sunk 200 ft. deeper, making 550 ft. in all.

THE new mill on the Prussian hill mine blew its whistle for the first time last Monday. Crushiug has commenced and the maohinery works to a charm.

LLOYD'S FIVE-STAMPER.—Calaveras *Citizen*, July 6: This mill has been stopped awhile to enahle workmen to replace the old stsmps hy heavier ones.

THE Capitol is down nearly 60 ft.

CONTRA COSTA.

BLACK DIAMOND SHAFT.—Contra Costa *Gazette*, July 6: The shaft recently commenced by the Black Diamond Co. at Nortonville, is some 200 yards north of the range of the openings of the Mt. Hope and Black Diamond inclines. The shaft is 11 by 22 ft. and is expected to strike the coal vein at perpendicular depth of 450 to 500 ft. from the surfaoe.

EL DORADO COUNTY.

GOOD YIELD. — Placerville *Democrat*, July 6: The St. Lawrence mine for June—22 days' work—cleaned up 31 lbs. of gold.

INYO COUNTY.

BULLION.—Inyo *Independent*, June 29: On the 20th inst. Hiskey & Walker shipped from the Deep Spring mill $3,700—from Lida ore.

GOT TO WORK.—Supt. Wingard has finally got to work on the Silver Sprout.

MARIPOSA COUNTY.

POOL MINE Mariposa *Gazette*, July 5: Forty tons of rock from this mine, near Hornitos, were crushed at the Gaines mill a few days ago, and yielded $40 per ton.

NEVADA COUNTY.

TOWN TALK.—Grass Valley *Union*, July 3: This mine was cleaned np last Saturday after a 4-weeke rnn. The result was $3,000. The expenses, all told, were $1,200, leaving a profit of $1,800.

NUGGET.—Last Sunday Wm. Wallace found a nngget of gold and quartz worth nearly $1,000. It was from the Baltic Co.'s ground on Squirrel creek.

SAN DIEGO COUNTY.

BULLION.—San Diego *Union*, July 4: Bullion amounting to $3,030 was shipped to S. F. yesterday.

ITEMS.—The Kiug boys are busy packing ore to the Redman mill from the Golden Chariot. They will have crushed about 100 tons, from which they will ohtain at least $25,000. With this amount they will put up a 10-stamp mill, and in future do their own crushing.

The mill of DeFrees & Moor is running steadily, and will soon make a rich clesnup.

The Van Wert is condncted by Taylor & Co., who have a lease of the mine. Some very rich rock was strnck a few days ago in the new shaft.

At Banner Dist. the mines being worked are the Golden Chariot, Ready Relief, Big Blue, Antelope, Madden and Kentuok. King & Co., of the Golden Chariot, have a lsrge quantity of very rich ore on their dump.

Bailey & Co., of the Ready Relief, cleaned up a few days ago. The rock yielded $300 per ton.

Yesterday I paid a visit to the Stonewall. This is the mammoth lead of Southern California. In the level where the men are working, taking out rock, the lead measures 26 ft. in width, all of which pays alike, the gold being evenly distrihuted through the rock. The foundation is being graded and the timhers placed in position for the new mill, which is to be 50 hy 100 ft. The engine is 40-horse power. They design putting up a new battery with 10 stamps.

SIERRA COUNTY.

HIGH COMMISSION.—Downieville *Messenger*, June 29: The Falk Bros. have agreed to huild a mill to crush the High Commission rock for one-quarter of the mine.

TUOLUMNE COUNTY.

GOLDEN GATE.—Sonora *Independent*, Jnly 6: On Wednesday we were shown rock from this vein, ohtained at a depth of 45 ft. which prospsots over $250 per ton in free gold. Three shafts have bseu put down in a distance of 200 ft.—one 10, one 14 and one 45 ft.—all prospecting rich. In the last the rock grows hetter, and the vein is 4½ ft. wide, the vein ahove varying from 3½ to 5½ ft. in width.

Nevada.

EUREKA DISTRICT.

BULLION.—Eureka *Sentinel*, July 3: W. F. & Co. yesterday shipped one bar valued at $1,538, produced at the Lemon mill.

EUREKA S. M. & S. Co.—The above Co. has heen organized to operate in thie dist. The old Buttercup property has been redeemed and goes into the new concern. Operations are to he commenced at once on a comprehensive scale.

RESUMED.—During the past week work has been resumed on the Ida, Mayflower, H. Cady and old Put.

PHENIX.—A finer hody of ore than ever found hefore in this mine has heen developed on the 300-ft. level in the last few days. The deposit is immense, and the ore of extraordinary high grade. The fnrnace started up last Monday.

HOME TICKET.—This mine is heing vigorously worked. The Walter shaft adjoining the original Home Ticket location on the east, is down 95 ft., disclosing a fine 6-ft. ledge of splendid ore.

SILVER WEST FURNACE.—Work on Capt. Taylor's Silver West furnsce is progressing satisfactorily. It will he ready for active operations inside of 4 weeks.

RICHMOND.—The hoisting works are completed and ready for use.

LANDER CONS.—Work will be started up in about 10 days.

ADAMS HILL.—The new steam hoisting works went into operation yesterday, and worked like a charm.

MINERAL HILL.—The Austin Co. has resumed the working of ite mine, and has in consideration the immediate hnilding of a mill or the purchaee of one from the Mineral Hill Co.

OUR MINES.—The Slow and Sure Mine, on Prospect Mt., in the new inoline, is developing a fine vein of quartz.

The Welsh King was being prospected for a few days during the past week, and quantities of galena and gray carhonate were discovered in the openings made.

The Dolphin is another mine hsing opened on Prospect Mt., which showed almost immediately a fine vein of ore.

HUMBOLDT.

BULLION.—Unionville *Silver State*, July 6th: Amount shipped from Arizona since our last issue, was $11,682.

CLIFFLAND.—Work is about to be again prosecuted on this ledge.

BRADLEY.—The shaft on the mine is 55 ft. deep, and the ledge at that depth looks well,

ELY DISTRICT.

BULLION.—Ely *Record*, Jnne 30th: W., F. & Co., shipped since June 23d, hullion valucd at $106,601.76.

PIOCHE.—The Bowery mill started up on ore from this mine on Friday, and will he kept steadily running for some time. On the 24th inst. the Sup. shipped $11,172.26, and on Friday last 28th, $6,804 49 was shipped, a total in 4 days of $17,976.75. The stopes throughout the mine are looking well and yielding the nsual amount of ore. On dump at present about 150 tons of fine ore, and 100 tons also on hand at the Bowery mill.

LOUISE.—Anna Dickinson shaft down 75 ft. and still sinking. Raising some very fine ore and ledge improving. The Goodspeed shaft is down 76 ft., a contract having heen completed on the same. The vein showe 3 ft. in width, and in hottom carries 18 inches of good milling ore. The shaft is down about 40 ft., with the ledge showing well in the hottom. The shaft will be sunk from this point on an incline following the ledge, which stands at an angle of about 50°.

SUNBEAM. — On the 22d inst., a large hody of fine ore was found in the ledge, averaging 2 ft. in width of solid ore, which shows an average in assays of $180 in silver and $30 in gold—total $210.

CHIEF OF THE HILLS. — Ventilation throughout the mines is perfect. Pushing drifts ahead as usual. On the lower level, in east drift, a large hody of fine ore has heen opened up and shows over 2 ft. in width. A ten-stamp mill has heen ordersd, and is expected to arrive in about 90 days.

HARPER.—Contract on sinking shaft 50 ft. has heen completed, and are running a drift southwest from bottom to strike the ledge, passed throngh in sinking.

NEWARK.—Shut down the workings below on the 29th and have discharged all the men employed except a sufficient number to do the work required in the timbering of the shaft.

RAYMOND & ELY.—Work on Burke and Creole shafts continues as usnal, some good ore being taken from the latter. The Lightner shaft yields well, stopes and drifts ehow heavy bodiee of ore in all parts. Still shipping more ore to mill daily than can be crushed hy the 50 stampe.

ALPS.—Shaft down 140 ft., and sinking coutinuee as usnal, slow progress heing made.

SETTING SUN.—West drift is 50 ft. from shaft, and looking well in the face.

MOCKING BIRD.—The ehaft is down over 30 ft. The ledge is etrong, regular and well defined. Considerahle lead is found in the vein, which is a very good prospect in this district.

BOWERY.—Work continnes as nsual in the old works. The mill is in complete running order, and started np on Friday on ore from the Pioche. The furnace is nearly completed.

STIRLING.—A new contract has been let to eink the ehaft 50 ft. from the present 150-ft. level. Ae soon as this is completed a drift will run acroee the ledge.

EXCELSIOR.—Stopes continue to yield well and ore improves in quantity and quality as opened upon. Opening of the mine, by means of winzes and drifts is being pushed ahead rapidly. At present abont 400 tons of fine milling ore on dump.

HIGHLAND DIST.—Most of the claims in that ssction have suspended work, although preparations are heing made to start up again on the principal ones in the early part of the coming month.

CONDOR.—No. 1 shaft is much harder than it has been for some time past. The chloride streak in the bottom, mentioned bsfore, continues to widsn daily, and assays from the bottom show an increased per cent. of silver; down 148 ft. No. 2 shaft continues hard aud slow progress is made in sinking. Down 33 ft. and constantly improving.

MEADOW VALLEY.—Mine looking well in all parts, and stopes yielding well. Work on Summit shaft progresses favorably and the huilding is almost completed. Shipping usual quantity of ore to mill, with a great improvement noticeable in the quality of that taken from No. 3 shaft.

AMERIOAN FLAG.—Mine is looking well in all portions, and stopes yielding abuudantly. Lower level shows good ore in the drift and good, wide ledge throughout. Hoisting machinery on the way is expected daily.

AZTEC.—Shaft 75 ft. in depth, and shows a well defined ledge from 18 to 24 inches in width on the bottom. Assays during the past week from ore show $372.01 per ton. A third shift will be put to work on the first prox., and developments of an important character will douhtless soon be made.

GREY EAGLE.—Temporarily suspended work, pending orders from S. F.

CHAPMAN.—Continue raising ore steadily, and are increasing the amount daily. Stoping going ahead, and a constant improvement in the quantity and quality in the ore extracted is noticeable since our last.

SAN JOSE.—Work progressing favorably on this clsim and quality of ore constantly improving. Incline is 115 ft. deep, with working prospects hetter than ever.

AMAZON.—For the past wsek the quality of the ore has heen constantly improving aod shows average assays of $98.90 per ton, with a ledge from 2½ to 3 ft. in width.

WAEHINGTON & CREOLE.—Work on the drifts continue with good progress being made. Face of both drifts looking well, with promising indications.

VICTOR.—Situated west of the Settiug Sun. Sinking of the shaft progresses favorably and ledge shows 4 ft. wido in the bottom.

WASHOE.

LOOAL SUMMARY. — Gold Hill *News*, July 6th: IMPERIAL-EMPIRE. — The east drift at the 1,500 ft. level is in 72 ft., and the face shows only clay, quartz and some porphyry. The 1,650 ft. level drift has only penetrated the vein ahout 25 ft., and finds more quartz and hetter general indications than in the level above. At the 1,500 ft. level no signs of the east wall are visihle, and there should not he for some distance yet. The incline is dowu 110 ft. helow the lowest level, and another station will soon be opened.

BELCHER.—Daily yield 230 tons. The ore hreaste at the 1,000 ft. lewel are looking and yielding better than ever. Some immensely rich gold ore is found in streaks and hunches in this level. The force of the south drift at this level is still in very fine ore. The hreasts and stopes at the 1,100 ft. level, look and yisld as well as ever. The west drift from the main south drift at this level has reached the point of intsrsection with the main inclins, but it will take 4 or 5 weeks yet before the incline can be completed.

OPHIR.—Work in all the departments is progressing finely. The shaft is down 90 ft. below the 1,300 ft. level and sinking 3 ft. per day. The north drift of the 1,100 ft. level is pnshed with vigor.

SENATOR.—This claim lying east of the Hale & Norcross, has a shaft 260 ft. deep, with a drift west from it 150 ft. developing a good streak of good quality of ore from 10 to 15 ft. wide, which assays well.

CROWN POINT.—Daily yield about 500 tone. The water in the lower part of the mine is draining out slowly, but constantly, the pumpe working well. Considerable improvement is noticeahle in the 1,200 ft. level.

VIRGINIA.—The main south drift at the 500 ft. level ie driving ahead with fair prospects. In the north portion of this level preparations are heing made to get at a hody of good ore known to exist there.

YELLOW JACKET—Daily yield 25 tons of ore from the old workings. The 1,540 ft. etation is heing opened in order to proepect the ledge at that point. Considera-

blo water eweeps through from the Crown Point lower lovel, which is not as low as the lowest depth attained in the Yellow Jacket by 200 ft.

Hale & Norcross. — Daily yield 50 tons, mostly from the lower mine. The winzo connection is at last completed between the 1,400 and 1,500 ft. levels, giving good ventilation. The main incline is being sunk deeper for a new level.

Gould & Curry.—Main incline down 90 ft. below the tenth or 1,500 ft. level and good progress being made. The east drift at the 1,500 ft. level is in 175 ft., and the face only shows hard, barren porphyry and a little quartz and clay occasionally. Prospecting in other drifts at that level goes on well as usual.

Kentucky.—Daily yield between 50 and 60 tons from the old sections which are looking unusually well, with ore enough in sight for several months.

Savage.—Daily yield 200 tons; average value $28 per ton. Incline down about 75 ft. below the 1,500 ft level and progressing deeper at a satisfactory rate. This level is still being vigorously prospected with good hope of better developments.

Buckeye.—Daily yield 25 tons. The ore breasts are all looking first rate. The work of sinking the main incline is already commenced.

Silver Hill. The new hoisting works machinery is about all completed and in readiness to start up.

Chollar-Potosi—Daily yield 200 tons of $40, all from the old workings. The west Blue Wing shows well. The repairs to the main shaft are being driven ahead energetically.

Sierra Nevada.--Daily yield about 30 tons. A good streak of ore 3 or 4 ft. wide is worked in the lower part of the mine, which is yielding very well.

Overman.—Shaft 80 ft. below the 1,000 ft. level. Drift west at that level in 370 ft., with more promising indications the further in the drift is pushed.

Woonville.—The last run of 80 tons from this mine, yielded nearly $3,000, or over $36 to the ton. The ore body in the tunnel is looking finely.

Knickerbocker.—New shaft down 365 ft. Rock somewhat softer, allowing of better progress. Machinery and everything working well.

Sutro Tunnel.—Entire length 2,950 ft. Rock hard, but blasts well. Shafts along the line driving downward at a satisfactory rate.

Succor.—New shaft down 156 ft. Considerable water is encountered which interferes very materially with sinking.

Occidental.—Main drift still boing run north at the rate of from 3 to 5 ft. per day. Prospects good.

Jacon Little. — This mine on Cedar Hill is turning ont some extra fine ore, rich in both gold and silver.

WHITE PINE.

Treasore Hill Mines—South Aurora. White Pine *News*, June 29: The Diamond drill in the Scatterthwaite tunnel is doing good work.

Beecher Cons, M. & M. Co.—Working a force of 45 men; extracting 30 tons of ore per day. The Manhattan mill is running on ore from this mine, which is turning out fully equal to expectatione.

Original Hidden Treasure.—About 70 men are employed. The old dumps are being assorted and the ore shipped to mill. The Wheeler tunnel is pushed ahead with good speed. The ore in the open cut shows an improvement in grade. The Big Smoky mill is running steadily and giving good results.

East Sheboygan.—The principal work done since last report, waa in the north workings, breasting out west across the ledge between the Exchange and Regent drifts. The ore obtained is of good grade.

Copper Glance.—Rapid progress ia made in the north shaft by the contractors. A contract was let on the 26th, to rnn the lower drift ahead 105 ft., to connect the main and north shafts.

Sunbeam.—The ore body has improved in the shaft.

Eberhardt.—The usual force of men is at work breasting out in the chamber West of the Keystone shaft.

North Aurora.—The ore in the South chamber is showing finely, and holds out an even grade.

San Juan del Rio.—The shaft is going down rapidly in the ore body of the back ledge.

Silver Hill Mines.—Owyhee.—The grade of tho ore in the bottom of the shaft is higher than on the surfaco croppings.

Silver Plate.—Flowers, Colton & Co., are pushing work ahead, breaating out.

Western Slope of White Pine Mt.—The Trench, Caroline and several other mines are in full blast. The first-olass ore is shipped to Reno by the Trench Co. Bstches of the Caroline have been worked at the Eureka and Hamilton mills recently, which paid largely over expenses. A lot of third-olass ore from the latter-named mine waa worked at the Big Smoky mill, which yielded $300 to the ton. There is a report that the Monte Cristo mill will soon start up.

Outside Dists.—Robinson Dist.—This promising Dist., is fast filling np with prospectors, and capitalists are coming to the aid of the bone and sinew of the population. The furnace of the Canton M. & M. Co. is nearly completed, and will soon be in full blast.

Mills.—International. —Running 60 stamps on ore from the Eberhardt & Aurora Co's mines.

Swansea.—Running on ore from the Mammoth mine.

Manhattan.—Running steadily on ore from the Beecher Con. M. & M. Co.'s mines.

Big Smoky.—The full number of stamps is running on O. H. Treasuro ore, and working full np to tho expectation of the Supt. of the mill.

Arizona.

Mines and Mining—Mohave Co.—Prescott *Miner*, June 22: On Williams' Fork, the Planet and other copper mines are being worked with profit.

Yuma Co.—Ore from the Castle Dome Dist. is constantly being shipped to S. F.

Mariposa Co.—Mining is at a stand still, owing to the present breaking up of the camps in Panal Dist. by Apaches.

Yavapai Co.—The miners of the several Dists. around Prescott are more hopeful than ever, but the Indians are more hostile than ever, so that not much, in the way of mining and prospecting, is being done.

The Tiger, Beuton, Del Pasco, Benjamin, Canadian and Cornucopis lodes are being developed to the entire satisfaction of all who have seen them.

Ten pounds of Benjamin, recently worked, yielded $5 in silver.

A piece of ore from the Crescent lode, in Walnut Grove Dist., recently assayed in S. F., yielded at the rate of $1,000 per ton in silver. The lode is wide and the ore easily smelted.

The Vulture mine, near Wickenburg, is being operated upon and the mill is running, as usual.

Colorado.

Started.—Colorado *Miner*, June 27: The Stewart Amalgamation Works at Georgetown have started up. There are upwards of 600 tons of ore at the mill, and more coming every day. The capacity of the mill will be about 20 tons per day, or about 5,000 tons per year.

Arey Works.—The Arey works have started up. The crushing mill can crush and sample 30 tons per day.

Caribou.—Cor. Central *Register*, June 26: Dr. Monro and Fred Albright, have made a new discovery on the Caribou Hill, and name it M. M. Pomeroy. It shows a fine crevice, and looks exceedingly well for the depth.

Parker, Werley & Co., are sinking on a vein called the Horace Greeley, on Caribou Hill. It shows a large vein, with but little mineral.

David Hanna is hoisting a quantity of fine ore from a new discovery on Idaho Hill. It is down only 15 ft., and looks equally as well as the Silver Point, at that depth.

The Wide Awake lode, on Caribou Hill, is being worked with very promising results.

A. D. Breed is proving up the west end of the Caribou lode.

Breed & Cutter's mill at middle Boulder, started up yesterday, and will doubtless run constantly all summer. There is a large supply of ore at the mill, and the mines of that region are being actively worked.

Items.—Central *Herald*, June 26: Roberts & Co. are raising from the claim they operate on the Kansas, about 2 1-2 corda of 10-oz. ore daily. The ore taken out very recently from this part of this famous lode is looking better and yielding more largely from this mine for some time past. Four or five other claims on the Kansas are being successfully operated.

On the Kent Co., Bennett & Co., Nichols & Co., are mining with fair success.

Quails & Co., on the Centre, are raising ore which runs under the stamp from 5 to 14 ozs.

Capt. Phillips and Co. are sinking two shafts on the Jones' lode in Nevada, and taking out ore which yields 14 ozs. in the stamp mill.

Mr. Hawley, proprietor of the Gardner lode on Quartz hill, commenced mining operations on that mine yesterday.

From the Rhoderick Dhu, Mr. Scudder is taking out considerable quantities of fair milling ore, and some first-class smelting ore.

Some parties are just commencing work on some of the old mines about Nevada, and the prospects are favorable for the raising of increased quantities of ore in this dist.

Montana.

Moose Creek.—Deer Lodge, *New North West*, June 28: Parks & Dickey, who own and are developing the Dixie lead on Gold Hill, Moose Creek, are running 3 arastras, crushing 4 tons of ore per day, yielding $12 to $20 per ton. The lead is developing well, showing a crevice of 4½ to 5 ft., decomposed quartz, requiring no blasting; 3 men take out 8 tons per day. Marcean & Lapoint have 3 arastras running on Canadian ore, and are getting good pay. Falkner & Reynolds, and Dodge & Co., are placer mining on Moose, and making good wages.

Henderson Gulch.—Deer Lodge, *Independent*, June 29: The placer mines in Henderson gulch are paying as well, if not better than for several years. The Buckeye boys, Smith Bros., on Smart's Bar, made one clean up of $1,750 a few days ago; Ferguson & Co. have cleand up over $3,000 so far this season. O'Connor & Mastison, on Elkhorn Bar, made one run of $2,134; Hendersen & McAndrews, one of $1,100; Tom Smith & Co., one of $1,500; Terrill, Walwork & Co., one of $700, Carlton, Burus & Co. have made several large runs, and the Haley Bros. have been doing well. McDermott & Hennessy will make their first clean up this week, and a large one is expected. At present there are about 32 white men and 150 Chinamen at work on the gulch and bars.

Winchel, Hornbuckle & Co. have just started up their hydraulic diggings on Flint Creek Bar.

Carr, Farnham, & Co., on Maginnis gulch are drifting in the bed of the stream. They carry their flume up through the drain tunnel to the bed rock, a distance of 600 ft., and are thus enabled to work the entire year.

Utah.

Bullion.—Salt Lake *Tribune*, July 2: Durant & Cutting shipped during June, 840,000 lbs. east and west, making 7,600 bars. The value exceeded $100,000. Of this amount, 360,000 lbs. were shipped by the Winnemuck; 33,000 lbs. by the Flagstaff; 76,000 from the Saturn; 66,000 from the Utah. They expect to double the amount this month.

Ophir.—Correspondence same: The Cliff, on Ophir hill, shows a fine body of ore, and is being extensively worked. Large forces are on the Nsbob and Rip Van Winkle,—results—dumps stacked with tons of the metal. The mines in Dry Cañon are looking fine. The Mona, on Snow Storm Hill, has yielded some fine rock, within the past week. An average of ore, sold to the Ophir Smelting works, yielded 70 per cent lead and $700 in silver.

More of it.—The Highland Chief, in Little Cottonwood, is said to have opened out hugely within the last few days. It is stripped for 100 ft. on the surface, showing a well defined and continuous vein of ore, the lowest grade assaying $191, and the highest $300.

Reed & Benson.—This mine, is developing favorably. At a depth of 132 ft. a vein of ore 15 ft. wide, has been reached. The Co. has about 1,000 tons of ore on their dumps.

Bingham Canon.—Valuable discoveries are being made almost weekly in this dist. Prospectors have succeeded in getting on to a richer belt of mineral than heretofore, and some very fine mines are being developed. A very rich gold quartz lead was recently located by some fortunate parties which assays from $37.50 to over $326.00 in gold. One of the finest discoveries in the country was made the other day near one of Bingham's lofty peaks. The Agues, shows at 10 ft. from the surface an 18-inch vein of rich galena and chloride ore assaying from $165 to $700 in silver, and 12 to 18 inches milling ore besides.

New Incorporations.

The Silver West Consolidated M. Co—July 3. Location : State of Nevada. Capital stock, $5,000,000, divided into 40,000 shares. Trustees—Thomas J. Taylor, John Pershbaker and John W. Brummagim.

The Josephine Consolidated S. M. Co.—July 9. Location: Philadelphia M. District, Nye county, Nevada. Capital, $2,500,000, divided into 25,000 shares. Trustees—F. F. Coffin, V. Fernbach, James Stuart, J. W. Gashwiler and George Hearst.

Golden Rule S. M. Co.—July 10. Location: Ophir District, Utah. Capital, $2,000,000, divided into 20,000 shares. Trustees—John Malone, J. P. Sanders, Felix Uri, Henry E. Mayer and M. Wertheimer.

The Gold Canon Consolidated M. Co. filed a certificate of increase of capital stock on the 10th inst. from $700,000 to $3,500,000.

Meetings and Elections.

The Newark Mining Company elected the following Trustees on the 8th inst.: J. S. Wall, S. Heydenfeldt, J. A. Garniss, A. Young and W. Blanding.

The Utah Mining Company met on the 9th inst. and elected A. K. P. Harmon, C. B. Land and John Skae as Trustees.

The Altona, No. 1, Gravel Mining Company, of Grass Valley, have elected the following Trustees: Wm. K. Squires (President;) Peter Brandow (Superintendent,) David F. Dodge, Rufua Shoemaker, and David Wilder (Secretar.)

The Chollar Potosi Mining Company, at the recent annual meeting held on the 8th inst., re-elected the following officers: Trustees: A. K. P. Harmon (President;) J. D. Fry, Alpheus Bull, William Norris, H. C. Kibbe, James Freeborn, and James H. Dobinson; Secretary, W. E. Dean; Superintendent, I. L. Requa.

The Norman Mining Co., have elected the following Trustees: W. G. Wayman (President), Benjaman Dore, M. D. Plummer, J. M. Thompsou and E. J. Moore. W. H. Watson was continued as Secretary.

The Overman Mining Co. met on the 11th inst, and elected the following Trustees: Geo. W. Bever (President), R. F. Morrow, (Vice-President, A. K. Harmon, M. I. McDonald and Hiram Tubbs. Thos. J. Owens was re-elected Secretary.

Mining Shareholders' Directory—Meetings, Assessments and Dividends.

[Compiled weekly from advertisements in the Mining and Scientific Press and other S. F. journals.]

ASSESSMENTS.

NAME, LOCATION, AMOUNT AND DATE OF ASSESSMENT.	DAY DELINQUENT.	DAY OF SALE.
Alpa M.Co., Ely Dist, Nev., June 18, 50c.	July 26	Aug 19
Arizona&Utah M.Co., Nev , June 4, 50c,	July 10	July 31
Bellevue, Placer Co., Cal., June 20, 50c,	July 29	Aug. 19
Cherokee Flat B.G. Co., Cal. June 8, $1,	July 10	July27
Corona Cons., Eureka Dis, June 25, 10c,	July 31	Aug.22*
Crown Point Ravine M.Co.,Mono 3, $5..	June 20	July 29
Dancy, Lyon Co., Nev., July 3, 75c.	Aug. 6	Aug. 26
DefianceM.Co.,GrassValley, June 3, 50c,	July 5	July 22
Diamond S.M Co., White Pine, June 29,15c,	Aug 1	Aug 20
Eagle Quicksilver. May 8, $40.	July 11	July 15*
EckendornM.Co.,CalaverasCo..	June 8,$3,	July 12	July28
Empire, Gold Hill, July 10, 50c.	Aug. 13	Sept. 2
Excelsior M. & M., Nev., June 20, $2..	July 27	Aug. 19*
Exchequer Gold Hill, June 26, $3.	July 31	Aug. 22
Francis, Mariposa Co., June 18, $1.	July 20,	August 13
Gen.Lee S. M.Co., W. Pine,Ap'l 27,10c.	June 26	July 16
Golden Chariot, Idaho, June 22, $2.20..	July 28	Aug. 17
Dutch Flat B. G. Co.,Cal.,June 11, $1.25,	July 16	Aug 6
Howard Hill M. Co.,G.Valley, June 4, $5,	July 5	July 20
Hudson G. M. Co., Cal., June 18, 10c..	July 27	Aug. 17*
Hunu & Hunt, Ely Dist., May 29, 50 cts.	July 5	July 26
Ida Elmore M. Co., Idaho, May 24, $3..	June 29	July 27
Ingomar M. Co., Ely Dist., June 5, 25c	July 15	August 9
JacobLittleM.Co.,Virginia,Nev.May 30,$5,	July 1	July31
Justice M. Co. Storey Co. Nev., $1.	June 24	July 15
Kentuck M.Co.,Gold Hill,Nev.,June 12, $1c,	Ju 16	Aug 5
Knickerbocker, Nev., May 30, $1.	July 3	July 23
Lemon M. & M. Co , Nev., May 29, $1.	July 6	Aug 10
Louise S. M. Co., Nev., July 3, 10c.	Aug. 10,	Sept. 7*
Lyons & Wheeler, Arizona, May 18,10c.	June 24	July 15*
Mammoth S.M.Co.,White Pine,June 27,10c,	Aug1	Aug 27
Minnesota M. Co., I. T., May 12, $1.50.	June 22	July 20
Newark M.Co.,Ely Dist.Nev.,June 12, 50c,	July 22	Aug 17
Newton BootbCons.M.Co.,Nev.June 6,30c	July 12	Aug5
New York Con., Gold Hill, June 21, 50c.	June 22	Aug 9
Noonday S. M. Co., WhitePine, July 2, 25c.	Aug 5	Aug 26
Norman G. M. Co., Cal., June 27, 5c.	Aug. 1	Aug. 22*
Obio Cons. M. Co. Cal., May 21. 10c.	June 20	July 20
Overman M.Co.,Gold Hill,Nev.,June 5,$4,	July 18	Aug 7
Pacific Borax Co., Nev., July 5, 15c.	Aug. 6	Aug. 30
Pacific Ramie Co., June 11, 20c.	July 13	Aug. 9*
Pennsylvania, White Pine, June 14, 40c,	July 22	Au 13
Phenix S. M. Co., Eureka, July 6, $1.	Aug. 12	Sept. 2
Potomac S.M Co.,Nye Co.,Nev,June 6,50c	July 15	Aug19
Rowby, Gold Hill, June 3, 50c.	July 6	July 27
Senator S. M. Co., Nev., July 6, 25c.	Aug. 10	Aug. 30
Southern Gold Hill, Nev , June 24, 25c,	Aug 3	Aug 26
Spring Mountain Tunnel, July 9, 30c..	Aug 16	Sept. 7*
Star Cons., Eureka Dist., June 20, 25c,	July 29,	August 20
St. Louis M. Co., Placer Co., July 1. $1..	Aug. 6	Aug. 27
St.Patrick M.Co.,Placer Co.,Cal.,June 19,$3,	Ju 27	Aug19
Tecumseh, Gopher Dist., Juns 26, 10c.	July 31	Aug. 22*
Union G. M. Co., Cal., May 20, $2.50.	June 22	July 9*
Union G. M. Co., Cal., June 25, $1.	July 29	Aug. 19*
Wash. Creole M. Co.,Nev.,May 13,75c.	June 20	July 17
William Penn Cons., Nev. July 3, 10c.	Aug. 5	Sept. 2*
Winnemucca Chief, Nev., June 19, 15c.	July 30	Aug. 20*
Woodland M. Co., Cal., May 21, 12½c.	June 25	July 16*

MEETINGS TO BE HELD.

Baltimore American M. Co.....Annual Meeting, July 16
Calaveras G. M. Co.....Annual Meeting, July 22
Eastport, Coose Bay, Coal M. Co., Annual Meeting, July 15
Julian G. M. Co.....Annual Meeting, July 13
Kentucky G. & S. M. Co.....Annual Meeting, June 29
Mammoth Grove M. Co.....Annual Meeting, July 22
Pauper M. Co.....Annual Meeting, July 18
Pioton M. Co.....Annual Meeting, July 22
Savage M. Co.....Annual Meeting, July 18
Stanford S. M. Co.....Annual Meeting, July 22
Tecumseh G., S. & C. M. Co...Annual Meeting, July 18
Tyler Mining Company.....Annual Meeting, July 22*
William Penn Cons. Co.....Annual Meeting, July 15*
Woodland G. M. Co.....Annual Meeting, July 17

LATEST DIVIDENDS—(Within Three Months).

Belcher M. Co., $30.....Payable July 5
Black Diamond Coal Co., ½ per cent...Payable June 28
Crown Point G. & S. M. Co., $3.....Payable July 5
Eastport, Coose Bay, Coal M. Co., $5.00..Payable June 11
Keystone Quartz Mining Co., 50c.....Payable July 10
Keystone M. Co., $7.50.....Payable April 10
Meadow Valley M. Co., $1.00.....Payable June 20
North Star G. M. Co., $7.....Payable April 9
Piocbe S. M. Co., $1.....Payable July 5
Raymond & Ely M. Co., $7.....Payable July 5
San Francisco Savings Union.....Payable July 10*
Savings and Loan Society, 9 per cent...Payable July 15*

—*Advertised in this journal.

A Treatise on Railway Curves and Locations. By E. W. Beans, C. E. Henry Cary Baird, Industrial Publisher, 406 Walnut street, Philadelphia.

The above is the title of a small edition of a work very useful to Railway Engineers, and one which appears to contain considerable matter entirely new, and which will greatly assist the locating engineer, and facilitate his labors. The work is illustrated with numerous diagrams, and contains demonstrations and tables, showing how engineers may save themselves many laborious calculations and much expense for their employers. The last chapter or proposition, is devoted to grading hills and unequal surfaces for turnpikes, plank roads, etc. Price, $1.50, sent by mail, free of postage, to any part of the United States.

Weights and Measures.

As recognized by the laws of the United States.

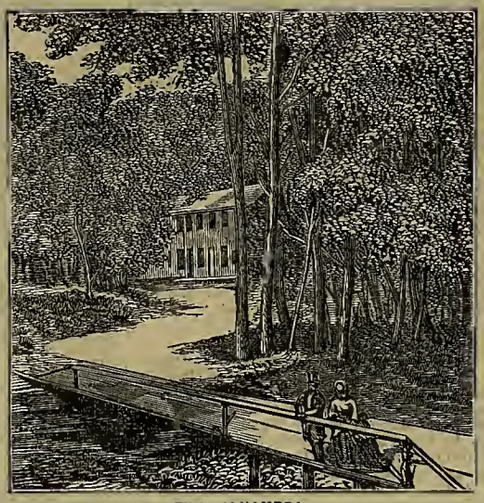
Bushel.	Pounds.	Bushel.	Pounds.
Wheat	60	Blue Grass Seed	44
Shelled Corn	56	Buckwboat	52
Corn in the ear	70	Dried Peaches	33
Rye	56	Dried Apples	26
Oats	32	Onions	57
Barley	47	Salt	50
Irish Potatoes	60	Stone Coal	80
Sweet Potatoes	55	Malt	38
White Beans	60	Bran	20
Castor Beans	46	Plastering Hair	8
Clover Seed	60	Turnips	55
Timotby Seed	45	Unslacked Lime	30
Flax Seed	56	Cornmeal	48
Hemp Seed	44	Fine Salt	55
Millett Seed	50	Hungarian Grass Seed	50
Peas	60	Ground Peas	24

A box 24 by 15 inches, 22 deep, contains 1 barrel.
A box 16 by 16½ inches, 8 deep, contains 1 bushel.
A box 8 by 8¾ inches, 8 deep, contains 1 peck.
A box 4 by 4 inches, 4½ deep, contains ½ peck.
A box 4 by 4 inches, 2 2-10 deep, contains 1 quart.

The standard bushel of the United States contains 2150.4 cubic inches. The "Imperial bushel" is about 68 cubic inches. Any box or measure, the contents of which are equal to 2150.4 cubic inches, will hold a bushel of grain. In measuring fruit, vegetables, coal and other substances, one-fifth must be added. In other words, a peck measure five times even full makes one bushel. The usual practice is to "heap the measure."

White Sulphur Springs.

When summer, which ie anxiously awaited in moet other climes, comes to the citizens of San Francisco, it is the signal for those who can afford the time and money, to wend their way to eome of the numeroue watering places to get rid of the hot mornings and etill more dieagreeable, windy, duety aud foggy afternoone. The majority of the Eastern cities have their heated terme, when to be in town is to he out of the world for the aristocratic portion of the community; but here in the metropolis of the Pacific Coast we rather seek a warmer climate for a change and at the same time ehun the winds and are enabled to enjoy a hot day in some rural retreat far from the hum and bnstle of the city. Fortunately, Californians can have almost any climate they d sire and at any time of the year, without going out of the borders of their own State; and to a stranger this variety seeme somewhat remarkable, especially when so great a change can be seen in a comparatively short distance.



THE ALHAMBRA.

The watering places are in their glory at this time of the year and the conntry is filled with city visitors in pureuit of pleasure, change and recreation. Among theee places of resort, the White Sulphur Springs of Napa County hold a prominent position both on account of their being eaey to get to from San Francisco and the beautiful scenery, fine climate and the reputation of the watere. Our correspondent, "L. P. Mc.," who has recently made a trip in that direction, hae furnished us with a few notes to accompany the illustrations given herewith.

How to Get There.

The Springs are situated in Napa County, eighteen miles distant from the Conuty seat in a romantic cañon, fifty seven miles from San Francisco. They are two miles west from St. Helena, at which point a stage line communicates with the Springs. The tourist takes the eteamboat at Broadway Wharf either at 7.30 A. M., or 4. P. M., and is landed at Vallejo in an hour and a half or two houre, where he takes the cars for St. Helena *via.* Napa; fare, $3. From St. Helena by stage or hack over a short bnt beautifnl road to the Springs, two miles; fare, 50 cents. Auother drive to the Springs from St. Helena, may be taken by what is known as the Avenue, which goes direct south one mile; then west one mile; then north one mile; and then a little northwest half a mile, meeting the main road. This road is frequently taken by private teams on accouut of the beauty of the route. The last 2½ miles runs through a wooded country heantifully studded with residences and vineyards, and the avenue is entirely shaded by the thick foliage overhanging it. The fine recidences of Dr. G. B. Crane, G. Backue, John Lewelling, and a number of other places in course of construction are passed on the way.

The Hotel and Cottages.

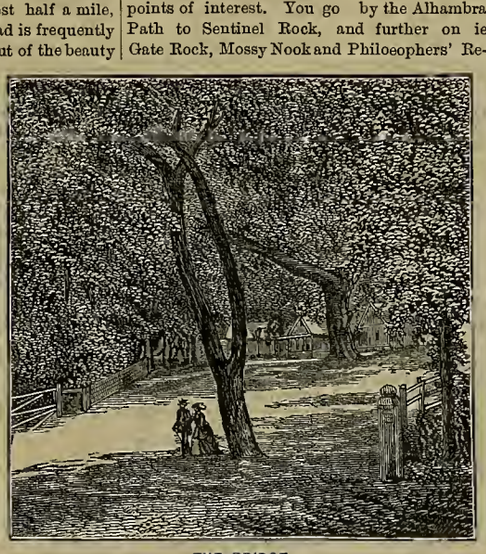
The cut shown in the centre of the page is a faithful representation of the hotel, which ie kept by Mr. S. Alstrom, and which afforde all the comforts to be found inside of San Francisco. The table ie well kept, the rooms airy, aud the beds clean and inviting. There are pleasant walks and shady retreats. A numher of cottages and buildings serve to make quite a pretty little picture of rural scenery. The charges here are reasonable, and one may either live in the maiu hotel or in a cottage as he desires. The accompanying cuts represent a few of these cottages, which eerve to show the beauty of the situation of the Springs aud arrangemeut of the accommodations.

The Surroundings

Of the place are all that could be wished for by any one seeking for a quiet retreat, a pleasant climate and beautifnl scenery. The hills around are covered with foliage and invite one to a walk to enjoy the shade in midday, or in the evening to lie under the spreading branches aud dream away the "cares that infeet the day." From the top of Columbine Hill, the manzauita path leads to Madroña Hill, 800 feet above the hotel. A little further on to the right this ridge raises 50 feet more and is called Prospect Hill. From this point, as its name implies, a splendid view is obtained. On the south side there are a numher of points of interest. You go by the Alhambra Path to Sentinel Rock, and further on ie Gate Rock, Mossy Nook and Philoeophers' Retreat. At a place on the ridge, 946 feet above the hotel, another fine view presents itself, and one can see from here the mountaine in the distance, the Sonoma Valley, and even San Francisco.

THE VANDEWATER COTTAGE.

THE HOTEL.



THE BRIDGE.

Analysis of ths Waters.

The waters are said to be beneficial in cases of rheumatism and numerous other afflictions which flesh is heir to. There are nine of the springs, the water from which, like most medicinal and mineral waters ie unpleasant to the taste, but a short sojourn at the place accustoms one to their use so that he really enjoys the flavor. We give herewith the anyalysis of the waters, which was recently made by Prof. John Le Conte, of the State Uuiverity.

All of the springs contain esseutially the same ingredients in the variable proportions. The low sp. gravity of the waters of the springs, as well as the results of analysis, indicate the presence of comparativcly small amouuts of saline materials. They are, therefore, peculiarly sulphnrous waters, belonging to the light class. The quantity of sulphur in the waters for all medical puposes, being fully equal in strength to some of the most celebrated sulphur waters of Europe and this couutry; those of Aix in Savoy; of Bagneres in France; of Harrowgate in England; of Moffat in Scotland; of Sharon in New York; of the White Sulphur Spriugs in Virginia, and others.

Most of the sulphurous waters of Great Britain are cold, but the greater numher of the most famoue springs on the continent of Enrope are either hot or warm. The temperature of Spring No. 1 (97¼° F.) ie nearly the same as that of the celebrated springs of Baden Baden near Vienna. The notable difference in the temperature of the several springs depends, probably, upon the greater or less abundance of the flow of water. It will be noticed that those furnishing the largest supply of water, as Nos. 1, 2 and 6, have the higheet temperatures. If a large quantity of water could be diverted into any one of the springs, the tempcrature would, probably, rise up to blood heat.

The department of mineral waters containing free sulphuretted hydrogen is of some interest in relation to their use. The characterietic odor of such watere is well known. They are ueually clear when first takeu from the spring; but when kept in a vessel containing air, sulphur eeparates in the course of eight hours or more, the fluid turning turhid, or depositing a whitish precipitate, whilst the smell of sulphuretted hydrogen becomes fainter. After longer exposure the continued action of the air generally oxidizes the separated sulphur, converting it into sulphnrous acid, which dissolves, leaving the water again clear, as at first.

Quantitative Analysis of Waters.

	Spring. No. 2.	*Spring. No. 6.*	*Spring No. 7.*
Temperature of Water of Spring in August, 1871	32° (C) 89°.6 F	30° (C) 86° (F)	21° (C) 69°.8 F
Specifio Gravity of Water	1.00026	1.00040	1.00038

One Wine Gallon, or 231 Cubic Inches, Contain :

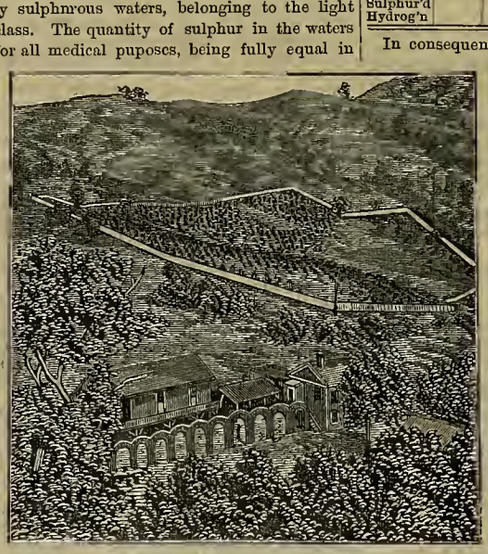
SOLIDS.	*Grains.*	*Grains.*	*Grains.*
Carbonate of Lime	1.25	2.44	6.56
Carbonate of Magnesia	0.62	0.56	4.36
Sulphate of Soda	8.26	11.33	12.84
Chloride of Sodium (common Salt)	21.72	23.41	14.23
Chloride of Calcium	1.32	0.86	0.78
Chloride of Magnesium	0.87	2.22	0.65
Sulphides of Sodium & Calcium	2.65	1.85	1.62
Total	36.69	42.67	40.04

GASES.	*Cubic Inches.*	*Cubic Inches.*	*Cubic Inches.*
Sulphuretted Hydrogen	6.15	4.25	*Trace.*

Qualitative Analysis of Other Springs.

	Spring. No. 1.	*Spring. No. 3.*	*Spring. No. 4.*	*Spring. No. 6.*	*Spring. No. 8.*	*Spring. No. 9.*
Tem. in Aug. '71	36°.25 c 97°.25 f	26°.5 C 79°.7 F	24° C 76°.2 F	24°.8 C 76°.64 f	18° C 64°.4 F	20° C 68° F
Spec. grav of Water.	1.00010	1.00012	1.00023	1.00038	1.00018	1.00023
Spring Contains.						
Car. Lime						
Car. Mag.						
Sul. Soda.						
Chlo. Sod.						
Chlo. Cal.						
Chlo. Mag						
Sul. Soda and Cal..						
Sulphur'd Hydrog'n		*Trace.*			*Trace.*	*Trace.*

In consequence of the changee induced by the action of the air, in order to secure the full benefit of snlphur waters, it is essential that they be taken at the spring or very soon after withdrawal from the fountain. In slow-running springs, as numhers 3, 7, 8 and 9, ncarly all the sulphuretted hydrogen seems to be removed by the action of the air; the sulphur of this gas being replaced by sulphuric acid.



THE LAUNDRY AND VINEYARD.

Gold ann Coal in India.—The Rangoon (E. I.) *Gazette*, of the 9th of April, publiehes the following brief but important announcement: General Pollock has remitted to Calcutta several specimens of gold-bearing quartz found in the neighborhood of Candahar. Mineralogists consider that the strata must contain the precious metal in rich proportion and considerahle quantity. Coal mining operations are heing energetically pushed on in the Nizam's dominions. The results up to date are said to he satisfactory.

Julian District.—New machinery for putting five more etamps into the mill of the Stonewall mine, has recently been shipped to Julian City, San Diego conuty. The mine helongs to A. P. Frary, and is one of the most promising in the lower country.

Useful Information.

Paradoxes.

Water thrown into a red-hot metallic vessel does not boil, as we should expect, but quietly gathers itself together, forming a more or less perfect sphere, and in that condition floats about gracefully on the hot surface as it slowly evaporates away. If at the same time a very evaporizable substance, as liquid sulphurous acid is thrown in, the water may actually be frozen in the red-hot vessel.

Water boiled in a glass flask until the upper part of the vessel is entirely filled with steam, and then dexterously corked before air can gain admission and placed in cold water, recommences to boil. The boiling is produced by cold instead of heat, and the experiment is known as the culinary paradox.

If steam from water boiling at 212° is passed into a solution of a salt in water, the temperature of the salt solution steadily rises, passing 212°, reaches the boiling point of the solution, and finally the latter also boils at a temperature as high and even higher than 250°, according to its nature. There we have the extraordinary result of obtaining a higher temperature, say 250°, from a lower one, viz., 212°.

If there is anything in nature that possesses a positive character it is light. Yet the physicist may so reflect the light from a given source as to cause it to destroy itself and produce darkness. In like manner two sounds may be made to interfere with each other and either produce silence or increased intensity of sound, at the will of the operator.

How Pencil Leads are Made.—Graphite, clay and water are the materials used. The finest graphite, after being finely ground, is mixed with a peculiar blue clay, found only in Bavaria, and the whole kneaded with water to the consistency of putty. This mess is placed in a strong cylindrical iron vessel, in the bottom of which is a hole of the diameter of the lead desired. A plunger forces the mixture out through this small opening, which is received on metallic sheets, which, when filled, are placed in an oven for baking. The softness or hardness of the pencil depends upon the degree of hardness to which the baking is carried. The leads are afterwards broken up into the sizes required. Nine different sizes of leads are made, and numbered from 1 to 9. The trade is mostly supplied from manufactories in Philadelphia.

Durable Soap Bubbles.—To obtain soap-bubbles that will show the changing colors of the rainbow, the directions are as follows: Take half a pint of water that has been boiled and become cold, and put into it a quarter of an ounce of Castile soap, cut up fine. Put this into a pint bottle, and set it in hot water in a saucepan, on the fire; there let it remain an hour or so, now and then give it a good shaking till the soap is dissolved. Let the fluid stand quiet for the impurities and coloring matter of the soap to settle; then pour off the fluid and add to it three or four ounces of glycerine and your soap-bubble solution is ready. In an ordinary way you may blow the bubbles easy with a tobacco pipe, but if you wish to attain scientific perfection, you had better employ a glass pipe. By adding a larger quantity of glycerine you may make these bubbles so strong that you can play battledore with them.

A Pretty Experiment.—It is well known that a light ball, as of cork, may be sustained for some time near the summit of a vertical jet of water, when such jet is steadily maintained. The experiment becomes more striking when a vertical blast of air, issuing from a large bellows is substituted for the water; as in this case there is no apparent support for the ball, which comports itself in a very amusing manner in mid air.

When a strong blast cannot be obtained, if a slender wire, about four times the length of the diameter of the ball, be passed through its center so as to have one-fourth its length projecting from one end, and one-half from the other, the balancing is more readily obtained, as any considerable change in the relative positions of the center of gravity and the point of support is prevented by the movement of the rod.

To Make Mucilage.—An excellent quality of mucilage can be made of gum Arabic and water. No other ingredients are necessary. It will be thick and sticky or thin and watery, according to the proportions of gum and water. If not thick enough, add more gum; if too thick for convenient use, add more water. The second quality of gum (usually five cents per ounce) answers as well as the first quality, although it is not quite as clear. The difficulty with the purchased article of mucilage is that there is a deficiency of gum—water being more profitable to sell than gum.

The rattle of the rattlesnake is for the purpose of imitating the sound of the Cicala and other insects that form the food of many birds, and so attract the latter within the reach of the serpent; so says Professor Shaler.

Coal vs. Man Power.—The combustion of 300 pounds of coal under a steam boiler will produce a power equal to the mechanical force exerted by a man for an entire year.

Paint for Metallic Roofs.—In selecting a paint that is to be applied to metallic roofs, we should have regard not only to the preservative qualities of the paint, but to its relations to heat and light. Those who have had experience in the matter, know that the lead paints (white lead, red lead, etc.) do not form a good covering for metals. Indeed, in many cases they have been found to promote the corrosion of the metal to which they have been applied. This probably arises from the fact that when ordinary lead paints are mixed with oil, the oil forms a chemical compound with the oxide of lead, and the carbonic acid of the carbonate of lead is set free. We should expect, therefore, that the nascent carbonic acid would act upon such metals as iron, zinc, etc., and we must remember that ordinary tin plate consists chiefly of iron.

Lead paints are therefore to be avoided as being corrosive, and so are some greens and blues, as they contain copper in a form which readily yields its acid to iron or zinc. Our only safety, therefore, lies in the use of earthy or ochreous paints, and of these we should select those that are of a rather light color. Pure white or even very light colors are objectionable from the fact that a white roof has a very disagreeable appearance; while on the other hand a black roof will become so hot that the paint will blister and peel off.

Neutral grays are not only least obtrusive, but least powerfully acted on by the sun's rays, and should therefore be selected.

Cement for an Aquarium.—One of the correspondents of the *Rural New-Yorker* inquired recently concerning a cement for an aquarium, and is advised to use red lead putty. There is, however, a cement known as "aquarium cement," which adheres so firmly to glass and iron that there is no possibility of breaking it off. It forms a perfectly water-tight joint, and it does not taint the water as many lead cements are apt to do. To prepare it take equal measures of fine sharp sand, plaster of Paris and litharge; mix them well together and make them into a stiff putty with boiled linseed oil. Apply in the same manner you as would any other putty, and allow two or three days to dry. As regards the materials, any clean, fine and sharp sand will answer.

Cement prepared as above is exceedingly useful for more purposes than making aquaria. For stopping leaks around chimneys, and for many other uses that will readily suggest themselves, it is invaluable.

How to Fasten Rubber to Wood and Metal.—As rubber plates and rings are now-a-days used almost exclusively for making connections between steam and other pipes and apparatus, much annoyance is often experienced by the impossibility or imperfection of an air-tight connection. This is obviated entirely by employing a cement which fastens alike well to the rubber and to the metal or wood. Such cement is prepared by a solution of shellac in ammonia. This is best made by soaking pulverized gum shellac in ten times its weight of strong ammonia, when a slimy mass is obtained, which in three to four weeks will become liquid without the use of hot water. This softens the rubber, and becomes, after volatilization of the ammonia, hard and impermeable to gases and fluids. *American Artizan.*

The Watery Depth.—Water has been proved to be more compressible than some solids. Its density increasing, therefore, as the depth increases, there is a theoretical depth a which water would become as dense as, say, iron, and at which, therefore, iron would cease to sink. Practically, however, it is probable that there is no depth in the ocean to which any known solid that sinks at the surface will not descend.

One of the most marked of organic differences between the sexes is that of muscular action. No one who carefully watches the muscular acts of women will fail to perceive a tendency to do them with a sort of rush, with a superabundance and sudden exertion of force, rather than by the gradual application of the precise amount by which the end in view can be secured.

Softening Old Putty.—In removing old broken panes from a window, it is generally very difficult to get off the dry, hard putty, that sticks around the glass, and its frame. To obviate this, dip a small brush in nitric or muriatic acid, and go over the putty with it. Let it rest a while, and it will soon become so soft that you can remove it with ease.

To Protect Walks from Weeds.—Take one gallon of gas-tar and about half a pound of air-slacked lime, boil and incorporate them well together, then apply the mixture with a common long-handled whitewash brush. This will dry in a few hours if put on boiling hot, and will kill off all the young weeds and prevent their growth.

The Microscope reveals to us the fact that the surface of our bodies is covered with scales like a fish; a single grain of sand would cover 150 of these scales, and yet a scale covers 500 pores. Through these narrow openings the sweat forces itself like water through a sieve.

Hint for Mechanics.—Ed. Skinner Middleton, New York, says by rubbing chalk on a square the lines and figures are filled up, and can be much more plainly read. This is especially useful for near-sighted persons.

Good Health.

Apples Very Wholesome.

Many persons do not value apples sufficiently as an important article of diet. Besides containing a large amount of sugar, mucilage, and other nutritive matter, this fruit contains vegetable acids, aromatic qualities, etc., which act powerfully in the capacity of refrigerants, tonics, and antiseptics, and when freely used at the season of mellow ripeness prevent debility, indigestion, and avert, without doubt, many of the "ills which flesh is heir to." The operators of Cornwall, England, consider ripe apples nearly as nourishing as bread, and far more so than potatoes. In the year 1810—which was a year of much scarcity—apples, instead of being converted into cider, were sold to the poor, and the laborers asserted that they "could stand their work" on baked apples without meat; whereas a potato diet required either meat or some other substantial nutriment. The French and Germans use apples extensively, as do the inhabitants of all European nations. The laborers depend upon them as an article of food, and frequently make a dinner of sliced apples and bread. There is no fruit cooked in as many different ways in our country as apples, nor is there any fruit whose value, as an article of nutriment, is so great.

An old gentleman recently stated to us that every fall he used to have a severe sickness, but since he bought, during the season, a barrel of good apples, for himself alone, and ate the whole barrel in two or three months, he had every year saved himself from this sickness without wanting a doctor.

Liebig on Apples.

Justus Liebig, the great chemist, thinks that the importance of apples as food has not been sufficiently estimated or understood. He says: "Besides contributing a large proportion of sugar, mucilage and other nutritious compounds in the form of food, they contain such a fine combination of vegetable acids, extractive substances and aromatic principles as to act powerfully in the capacity of refrigerants, tonics and antiseptics; and when freely used at the season of ripeness, by rural laborers and others, probably maintain and strengthen the power of productive labor."

Take Care of Your Health.—Few people realize what health is worth until they lose it. It is easier to prevent disease than to cure it. The character of our farming is undergoing changes. We are using more machinery, keeping better stock, raising choicer varieties of fruit, grains, potatoes, roots and grasses; are buying more or making better manure. Now, all this requires *brains*. We are aware that there is a great deal of nonsense written on this subject. But it is undoubtedly a fact that a man cannot long use his brains as an intelligent, enterprising American farmer is now compelled to do, and work and worry at the same time, without abundance of nutritious food. If he undertakes to do it on fat pork, potatoes, bread, and cake, his health will certainly give way. The American farmer of today needs and must have more fresh meat. Better patronize the butcher than the doctor; better sell fewer eggs and buy less medicine. We have heard a farmer say: "Food that is good enough for my men is good enough for me." He may have been right. But the farmer who *thinks* and works too, needs better food and cooking than he who merely works with his hands.—*American Agriculturist.*

Use of Fruit.—Instead of standing in fear of a generous consumption of ripe fruit, one should regard it as decidedly conducive to health. The very disease commonly assumed to have their origin in the free use of all kinds of berries, apples, peaches, cherries, pears and melons, have been quite as prevalent, if not equally destructive, in seasons of scarcity. There are so many erroneous notions entertained of the bad effect of fruit, that it is quite time a counteracting impression should be promulgated, having its foundation in common sense, and based on the common observation of the intelligent. No one ever lived longer, or freer from the attacks of disease, by discarding the delicious fruits of our country. On the contrary, they are very essential to the preservation of health, and are therefore given to us at the time when the condition of the body, operated upon by deteriorating causes not always comprehended, acquires their grateful, renovating influences. Unripe fruit may cause illness, but fresh, ripe fruit is always healthful.—*Country Gentleman.*

Embalming Among the Egyptians.—Dr. Benjamin W. Richardson, in a lecture upon the science and art of embalming the dead, remarks that three different methods were practiced among the Egyptians. First, embalming proper, by the introduction into the body of certain odorous essences or antiseptics, aided by after-immersion in saline solutions; second preservation by simple extraction of water from the tissues; third, by the injection of preservative solutions into the blood-vessels. He remarks that the first of these methods includes the true Egyptian and Greco-Egyptian process of preservation, as detailed at full length by Herodotus, and consisted essentially in eviscerating the body and employing aromatic preservatives, and in exposure to a solution of common salt, possibly with the addition of some soda.

Friction.—One of the most gentle and useful kinds of exercise, is friction of the body, either by the naked hand, a piece of flannel, or what is still better, a flesh brush. This was in great esteem among the ancients, and is at present among the East Indies. The whole body may be subjected to this mild operation, but chiefly the belly, the spine, or backbone, and the arms and legs. Friction clears the skin, resolves stagnating humors, promotes perspiration, strengthens the fibers, and increases the warmth and energy of the whole body. In rheumatism, gout, palsy, and green sickness, it is an excellent remedy. To the sedentary, the hypochondriac, and persons troubled with indigestion, who have not leisure to take sufficient exercise, daily friction cannot be too strongly recommended as a substitute for other means, in order to dissolve the thick humors which may be forming by stagnation, and to strengthen the vessels. But, in rubbing the bowels the operation ought to be performed in a circular direction, as being most favorable to the course of the intestines, and their natural action. It should be performed in the morning, on an empty stomach, or, rather, in bed, before getting up, and continued at least, for some minutes at a time.

Warm Bath in Insanity and in Burns.—Dr. Wilkins in his *report* to the California Legislature, on Insanity, refers to the warm bath as a favorite treatment in Italy and in some parts of Holland and France. He often saw a dozen patients in one bath-room with their heads alone in sight, the bathing tub being covered except a hole for the head. There they usually remain from one to three hours, in some instances from six to eight hours, and occasionally for days at a time. Dr. Gudden, of Zurich, kept a man thus immersed for five days, on account of excitement connected with bed-sores. The patient is reported to have slept well during a portion of the time, and to have been cured of the sores. No exhaustion or ill consequence followed. A case is related of a man scalded by steam, and not insane, who was placed by Hebra in a tepid bath and kept there for three weeks, until a new cuticle had formed over the entire surface. This patient recovered without inconvenience. The water was kept at a temperature most agreeable to the patient. Thus employed it is said to relieve effectually the extreme pain from the burns.

Xylol in Small-Pox.—A good deal of interest has been excited by the published success of xylol dimethylbenzol, one of the many products of the distillation of coal-tar as a remedy for the small-pox, for which it has been applied for a considerable time in Berlin by Dr. Zeulzer. The experiments are stated to have proved very satisfactory, and its use in one of the principal hospitals of Berlin is becoming very extended. The dose of this substance for an adult is from ten to fifteen drops, and from three to five for children, every few hours. No injurious effect has hitherto been noted, even when given in considerably greater quantity. It is applied from the earliest period of the disease till the complete drying up of the pustules. The best method of administering the xylol is in capsules, which are now furnished, containing three, eight, and twelve drops, although it can be given drop by drop in wine or water. Toluol appears to have no effect.

Eat Fruit—Fruit vs. Liquor.—The late David Thomas often made the remark that within the circle of all his acquaintances, he did not know a person who was decidedly fond of good fruit, who became an intemperate man. He considered the two tastes as distinct and antagonistic. There is undoubtedly much truth in this remark. It appears that there is a natural demand in the system for fruit, and this demand not being always met, many are tempted to fill this vacancy by drinking alcoholic liquors. One of the best things we can do, therefore, while we urge the positive influence of temperance principles, and the prevention of an intemperate appetite by abstaining entirely from the sipping of liquor, we may endeavor, by the extended culture of fruit in all its kinds—so as to extend the circle of supply throughout the year—to assist this benevolent exertion by lessening or decreasing the temptation to supply its lack above stated.

A Novel Small-Pox Theory.—A German physician has lately started the theory that the fearful disease known as small-pox originates from an excess of albuminous matter in the blood, and that this is to be prevented by the administration of common salt. The habits of children in indulging too freely in sweetmeats he considers one great cause of this undue development of albumen, and coffee and tea, if highly sugared, tend also to excite it in adults. An organic acid such as lemon juice, he considers the best means of freeing the blood, when clogged with too much albumen, and he alleges that by taking these simple remedies in the way of precaution, he has for upwards of twelve years past, frequented or taken up his abode in the most pestilential small-pox hospitals of Europe and South America with entire impunity.

Poison Oak.—Somebody recommends as an antidote for poison oak a salve made of equal parts of butter, salt, and saleratus; and that a person who expects to be exposed to the poison oak, should take a small box of this salve with him, and slightly anoint the hands and face. This will oftentimes prevent the poison taking effect; but if it has taken effect the salve is a sure and speedy cure.

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Illustrations and Reports of Mining Enterprises Wanted.—Drawings or photographs of mining works that are of general interest to our readers are solicited for publication in this journal. Official reports of Companies, and description of mines of importance, of special interest, are also desired. Sketches of any new method and discoveries will be very acceptable.

San Francisco:

Saturday Morning, July 13, 1872.

Gold and Legal Tender Rates.

San Francisco, Wednesday, July 10, 1872.—Legal Tenders buying, 88¼; selling, 88¾. Gold in New York to-day, 113¼.

Table of Contents.

ILLUSTRATIONS.—Portable Drilling Machines, 17. White Sulphur Springs, 22. Coast and Interior Surface Geology, 25.

EDITORIALS.—Arizona and the Apachee, 17. Silicon Steel; Determinative Mineralogy, 24. Silk—Now for Information; Chollar Potosi M. Co., 25.

CORRESPONDENCE.—Meteorology of San Joaquin Valley, 19.

SCIENTIFIC PROGRESS.—Recording Musical Notes; Star Depths; Future Eclipses of the Sun; Determination of Hight of Auroras; Reversal of Spectrum Lines of Metallic Vapors; Germination Appropriation for Astronomical Purposes; Petroleum in San Domingo; Copper in Cocoa, 19.

MECHANICAL PROGRESS.—Improved Iron Processes; Krigar's Cupola Furnace; Advantage of Labor-Saving Machinery; The Different Methods of Making Steel; Mechanical Progress; Mammoth Car; Car Starter; The Baltimore Tunnel; A Pressure Gauge for Guns; The Dank's Furnace, 19.

MINING SUMMARY.—Reports from mines in various States, Countiee and Districts; Mining Shareholders' Directory, 21-22. Stock Reports, and Markets, 28. New Incorporations; Meeting and Electione, 21. Extensive Mining Sale, 25.

USEFUL INFORMATION.—Paradoxes; How Pencil Leads are Made; Durable Soap Bubbles; A Pretty Experiment; To Make Mucilage; Paint for Metallic Roofs; Cement for an Aquarium; How to Fasten Rubber to Wood and Metal; Softening Old Putty, 23.

GOOD HEALTH.—Apples Very Wholesome; Take Care of Your Health; Use of Fruit; Embalming among the Egyptians; Friction; Warm Bath in Insanity; Xylol in Small-Pox; Eat Fruit—Fruit vs. Liquor; A Novel Small-Pox Theory; Poison Oak, 23.

DOMESTIC ECONOMY.—Are Tin Fruit Cans Injurious; Put Up Your Jam While Hot; Cooking Eggs; Okra or Gombo; Fresh Vegetables and Sweet Salads; Use White Cheese; The Poetry of the Table; Selected Receipts, 26.

MISCELLANEOUS.—Bullion Product for 1871; Mining; The Great Blue Gravel Company; Stamp Duties Abolished; Silver Zone District, 18. Notices to Correspondence, 24. Patents and Inventions, 28.

Notices to Correspondents.

We have received several letters from different parts of the country asking about a cement suitable for mending waterproof boots. The substance known as the "Miners' Rubber Cement" is very effective and answers the purpose perfectly. We have seen it tried in a manner that left no doubt of its efficacy. The trouble has been that parties using it have not followed the directions, and some fault has been found. The vulcanized matter must be first thoroughly removed by washing with turpentine or scraping with a knife. The boots should be dry, and paper inserted to answer the purpose of a last. The patches should be made neatly, the cement applied and the parts rubbed well together. Then place three or four thicknesses of paper on the outside of the patches and bind them on for, from 12 to 24 hours; remove the twine and paper and expose to the air until perfectly dry. By following these directions, which are very simple, the patch will exclude the water perfectly. When the flask containing the cement is not in use it should be kept tightly corked. The parties manufacturing the article in this city were burnt out on the 4th of July, and not knowing where they will locate as yet, we can give no address.

Extension of Blake's Quartz Crusher Patent.—This patent, it will be seen, under the heading of Patents and Inventions, has been extended for seven years.

On File.—"Notes of travel in Lander and Elko counties, Nevada." "The Alpine *Miner* and Metallurgist."

New Process of Manufacturing Steel—"Silicon Steel."

The rapidly increasing demand for cheap steel and iron, and the large returns which await any important improvement in their manufacture has proved a most powerful incentive to inventors to do their utmost in devising means for the more economical and perfect manufacture of these indispensible products. Millions of money have been spent in such endeavors, and the records of the Patent Office show about 3,000 patents on file which claim improvements in this direction. But with few exceptions all these alleged improvements have proved impracticable when submitted to proper test. The famous and well-known Bessemer process, however, has been found to be of great value, and the more recent and comparatively new Danks' process, promises almost, if not equally satisfactory results in another direction. And now we have still another applicant for public favor, in the "Nes Silicon Process," which, according to its promoters, promises results of the highest importance to the commmercial world.

The Bessemer process is attended with a heavy drawback, inasmuch as it is founded, in the fact that all iron submitted thereto must first be deprived of *all* its carbon, and then a certain known percentage added by the introduction into the melted mass of a given quantity of a peculiar and quite expensive compound (Franklenite or Spiegeleisen) rich in carbon. Although this process is much cheaper than the old Swedish blistering method, still it is attended with great cost, and an immense outlay of capital at the start for machinery, etc.

The Nes Silicon process, on the contrary, is said to be extremely simple, and must be so if the details of the process, and consequent results are correctly given by the owners of the patents. This process consists simply in melting common pig iron in an ordinary puddling furnace, and mixing therewith a certain quantity of a very cheap compound known as "silicon ore," (an oxide of iron,) the product being a very superior steel. The philosophy of the process, as claimed, is that the ore serves as a purifier of the iron—the carbon, sulphur, and phosphorus uniting with a portion of the silicon, and passing off in slag, while the balance forms a uniform combination with the iron, which is thus transformed into "silicon steel."

This steel is claimed to be quite a new product—differing both in its composition and behavior from any steel heretofore produced. It contains less carbon and more silicon than any other.

Its properties are claimed to be superior to either the Bessemer, the ordinary blistered, or common cast steel. While ordinary steel is deteriorated by frequent heating, in the loss of carbon, the "silicon steel" is not injured by such loss, by reason of the presence of silicon, which resists the ordinary action of fire, and to which that steel is said to chiefly owe its superiority. It can be welded to itself or to iron in a most perfect manner, and without the use of any flux—a great advantage in many of the purposes to which steel and iron are put, and especially in the manufacture of steel-headed nails. In fact it is claimed that all steel rails can be made about as cheap by this process as iron ones.

It is claimed that the tensile and breaking strength of "silicon steel" rails is much greater than rails made from Bessemer steel. According to published reports, while the Beesemer rail breaks under two or three blows of a steam hammer, the same size of "silicon rail" will often stand 100 blows from the hammer, and then bend before breaking. It is also claimed that this steel "never rusts, but always shines like silver"(?).

The term "Nes" is from the name of the discoverer, Dr. Chas. M. Nes, of York, Pa. Much interest seems to have attached to this discovery which was made some two or three years ago, and a large establishment for making steel, and steel rails, has been put up at Rome, N. Y., by the company which owns the patent for the express purpose of showing the practical working and value of the process, and where iron masters from all parts of the world are freely invited to come and satisfy themselves with regard to the value of the discovery.

The company consider themselves amply secured from infringement by the several patents which have been taken out to cover the various parts and portions of the invention, and the devices and use of the ore by which it has been made valuable.

All the various processes pertaining to the invention can be seen and studied at the above named works, and the exact cost of the manufactura and the machinery and appliances therefor carefully calculated. It is said that steel can be made by this process in one hour, with a certainty of uniformity throughout, and which will work soft and fine, and temper and harden well at a very low heat.

We have thus given, at considerable length, what is set forth by the proprietors of this process, as to the character and value of this alleged "new product." We have not seen any of the steel, nor any scientific testimony as to the correctness of what is claimed, as to the chemistry of the process, although the company's circular contains a number of certificates from different persons who have used their steel, as to its character and value for the various purposes to which the parties have subjected it. The manner in which the company has sought to introduce their steel to the world appears to be open and above board. All are asked to come and see and judge for themselves. If what is claimed is true, the invention is a valuable one and marks another important step in the direction of that great desideratum—a cheap and good steel. We shall watch further developments with interest.

Determinative Mineralogy.

[Concluded from issue of June 29.]

Before this can be fully understood, the properties of minerals should be carefully studied, not only *read* over, but the reactions described, impressed upon the mind by experiment; and it would be well to fully realize the statement made in the commencement of this article, that "a true mineral species is homogeneous," that is to say, the smallest fragment must be the same in composition as the whole mass; any other form of mineral substance is a *mixture* of minerals, and any attempt to determine it by the tables referred to, would result in failure. Many mistakes are made by not giving this fact due consideration.

If a mineral is *crystallized* and a perfect crystal selected for study, it is nearly certain to be a pure species.

Before commencing the study of a specimen, it will be well to examine it carefully with a good magnifying glass, the use of which will often reveal the composite character of what to the unassisted eye may seem to be homogeneous.

Take the following five common minerals to illustrate their more simple properties: galena, crystallized quartz, coal, common salt, red chalk.

Each of these minerals will be found to possess properties peculiar to itself, and by which it may with certainty be distinguished from the others, yet they will be seen to have other properties in common.

Galena

Has a metallic "lustre" which is not the case with the others; if reduced to a powder, each particle will be found to be cubical in shape.

This peculiarity will convey to the mind the idea of *cleavage*. If heated before the blowpipe it first decrepitates and then melts *(fusibility)* and gives off an *odor* of sulphur; if the heat is continued—especially if carbonate of soda is added—a bead of white metal appears *(reduction)* a portion of which volatilizes, coating the charcoal yellow *(incrustation)*. If the bead is hammered it will be found to be *malleable*, which distinguishes the mineral from certain others possessing metallic lustre and which in a like manner give white metallic beads before the blowpipe; galena will also be found to be so much heavier (specific gravity) than the other minerals as to attract attention also to that peculiarity. An examination of the

Quartz

Will show that it is harder than the others; that it is infusible alone before the blowpipe, but melts and forms a transparent bead when strongly heated with carbonate of soda on charcoal, or in a loop of platinum wire, and that a small fragment swims undissolved when similarly treated with microcosmic salt, retaining its perfect form. The undissolved silica is called the "silicious skeleton." If the

Coal

Is heated on platinum foil it burns away, leaving a small ash. This peculiarity distinguishes it from the other examples. When heated in a closed glass tube, it swells and gives off water, which may be shown to be acid; empyreumatic fumes escape from the open end of the tube combined with a gas which is inflammable.

Salt

Dissolves in water, which none of the others do. Its solubility gives it *taste*. Boiled with sulphuric acid, suffocating fumes of chlorine are given off. It generally but not always decrepitates when heated.

Red Chalk

Soils the hands, gives a deep red *streak* when rubbed on white paper or porcelain, adheres to the tongue and absorbs water. When heated before the blowpipe it becomes darker colored and is then attracted by the magnet, which was not the case before.

If these few minerals were the only ones found in nature, the science of mineralogy would be very simple. After investigation, neither could be taken for the other, but there are more than 600 species known to science, none of which are exactly alike; some resemble each other, but a careful study will reveal a difference in every case.

The true scientific determination of minerals is based on chemical analysis, but all the known species may be identified by a system of testing now in common use among mineralogists.

It is usual to make a series of experiments, which soon become quite familiar. By these simple tests some general idea of the specimen under examination is quickly obtained.

A systematic study of the specimen is then commenced, reference being made to a tabulated list of mineral species.

Dana gives the best table of this kind in his work on mineralogy, 4th edition, 1865. Chapman, Kohel, Mitchell, and others give similar ones, based however on the same general principles.

The specimen under examination is carefully inspected, and any peculiarity of appearance is noted. It is then successively tested for hardness, specific gravity, behavior in glass tubes, both open and closed; experiments are made to ascertain if it gives incrustation, or fumes when heated on charcoal. If it imparts color to borax bead in reducing or oxidizing flame; if it colors blowpipe flame; if a metallic bead can be reduced from it before the blowpipe; if so, is the metal red, yellow, or white; and is it malleable or brittle; when the bead is melted on charcoal, does it form a coating either white or colored? These are the preliminary tests alluded to before; notes must be made of the reactions on a convenient piece of paper.

Reference now being made to the tables, the systematic classification of the mineral commences.

Suppose the mineral to be devoid of taste, and to be insoluble in water. In this case it must be sought among the "Insoluble Minerals," which in the tabulated list are placed by themselves. Observe if its luster is metallic; if so, it would be useless to look for it in the *non-metallic* subdivision. It obviously belongs to the great subdivision of insoluble minerals having metallic luster.

Rub the specimen on a piece of roughened porcelain, or cut it with a knife; if the streak is metallic, it does not belong to the large class which do not give a metallic streak.

The streak being found to be metallic, an experiment is made to determine if the mineral is malleable; if so, the species can be readily identified, for this constitutes but a small group. If not, it is heated on charcoal to ascertain if it gives off fumes (a reference to the preliminary notes will give the result of this experiment). If fumes are evolved, a description of the species is sought in another group. If not, still another group must be consulted.

The above is the general method of determining minerals. The minute details can only be learned by much practice and careful study.

Commencement Day.—The Commencement exercises of the University at Oakland, will take place on Wednesday next, the 17th inst.

The re-union of the Associated Alumni of the Pacific Coast will follow immediately after the commencement exercises. This gathering will be represented as usual, by the talent, learning and refinement of the coast, and the proceedings will have an interest unsurpassed by that of any other re-union held in this State.

The University oration will be pronounced by Wm. A. Scott, D. D., and the poem by E. R. Still, M. A.

The Alumni oration and poem will be delivered at 3:30 P. M. The orator of the occasion is Colonel W. H. L. Barnes, A. M.; the poet, Thomas Newcomb, Esq. These exercises will be followed by a business meeting of the Association.

The usual evening festivities will begin at 5:30 P. M., at the hall on Sixth street. The Alumni and their wives, with invited guests, are entitled to seats at the table.

Coast and Interior Surface Geology.

Amos Bowman continued, (before the Academy of Sciences, partially reported last week) that the Pliocene sea lines so plainly marked on all the highest hills of the peninsula of San Francisco, are not wanting of obvious continuation into the interior.

Towards establishing their immediate relations with the Sacramento and San Joaquin valleys, Mr. Bowman drew the annexed diagram, being a view west from the highest hill of the Pleasanton Gravel Range in Livermore Valley, Alameda county. The importance of establishing as near as possible, from any and all sources, the exact altitude on the flanks of the Sierra Nevada, of the Pliocene sea into which flowed the ancient rivers of California's gold mining pride and greatness, need hardly be alluded to, for the relations of fluviatile forces and conditions to the existing sea, plainly constitute the elements, the *alpha* and *omega* of their dynamical history.

All the higher hills of Napa and Solano valleys hold forth abundant testimony of the character of those of Livermore valley and Pass, the geographical situation of which may make their testimony suffice. Their accessibility from the city too, with those on the San José R. R., will enable anyone to study and verify for himself the correctness of the following facts and conclusions.

The view from the summit of the Pleasanton Gravel Range in any direction of the compass, is rich in suggestive things, both scenially and geologically. Diablo looms up in noble grandeur to the north, enhanced in its sunny blue altitude by the level perspectives of the intervening valley, and a range of Pliocene hills. Evdivide to Suisun bay, the surplus or drainage waters of Livermore bay united their forces at Alameda cañon. That abrupt gorge has been cut since the Pliocene. It affords us a pretty good integer of the time involved in these recent changes, so interesting to us, by the 300 feet of erosion shown, at this proximity to the ocean and ocean level of the present.

The hand level applied by Mr. Bowman to the top of Alameda cañon and Dublin water shed from points between the two, proved the slight beginnings that determined the outlet in favor of Mission sag. The most simple of natural processes, illustrates in this case a popular paradox in geology: how rivers will sometimes flow directly across, over, or through a mountain range of the hardest rock, when they might have taken a level and easy road.

While on the peninsula of San Francisco these lines generally are shown by fossiliferous evidence to have a close relationship to the Pliocene, the evidence of the Pliocene age of those in the diagram is mainly their proximity to the former, and continuousness of levels. But at Big Slide, above alluded to, the whole of the Livermore Gravel Range is seen to rest conformably upon rocks containing plentifully, fossils of Miocene age. The top of the gravel range on which the observer of the sketch is supposed to stand, rises—be it understood—to the level of the dotted line, and the San Francisco Pliocene. *In nuce*: a Post Pliocene uplift of 900 feet, accompanied by departure of the sea, the latter giving grades of vantage for Post Pliocene erosion.

While on the ocean peninsula the Pliocene detrius is chiefly very hard rock; here, in Livermore Bay, it is mainly unconsolidated gravel at various altitudes, the consequent marks of system in the hills.

The gravels originated in the very long coast range longitudinal valleys of the Valle and Mocho creeks, coming into Livermore Valley from the S. and E.—one of them 60 miles long—where the older hills are largely composed, as Dr. Blake remarked, of easily disintegrated conglomerates.

On the San Joaquin side of the Livermore Pass, near Midway station to S. W., a similar terrace formation has been outlined on the maps of the Geological Survey, showing that the Pliocene Gulf levels rose at that point over the flattened hill tops of the R. R. summit at Altamont.

What relation had the sea to the gold mining gravels of Cal. ? is an important question on which the foregoing facts may throw some light. From Piety Hill gold mining district in Shasta Co., situated West of Sacramento river near the head of the valley, to Tulare Lake, the Pliocene Gulf received from the rivers everywhere along its margin, deposits of gravel, forming subaqueous shallows and washes. Marysville and Wheatland Knolls, and Poverty ridge at Sacramento, etc., are of this character. Remnants of considerable hills, or broad sloping plains along the footbills, of this age and character, have been traced and in a degree mapped. Why these deposits are mined for gold in some places, and not in others, is no great mystery. The distribution of the gold bearing slate formation as shown on the Geol. Survey map, tells the reason at a glance. The Klamath river mining basins and Gold Bluff gravels only extend this history to the North and West.

Prof. Davidson stated that at Pt. San Pedro there were sea terraces in the hills as high as 1,500 feet above the ocean; also that there are several sets of terraces at lower altitudes which can be traced by voyagers on the Southern coast steamers, and with great inctness, all the way from San Francisco to the Mexican boundary.

FIG. 3. VIEW WEST FROM PLEASANTON HILLS, LIVERMORE VALLEY (EMBRACING 16 MILES).

erything in the shape of hill, mountain and valley, groups itself into forms suggestive of relations to other hills, or terraced valleys. The long reeching subaqueous plains, now the straight topped highest hills, having been sliced up into several parallel ranges by the erosions, 500 ft. deep of the Valle and Mocho, give to the excursionist a spice of experiencing himself in a novel and peculiar situation. Oak knolls and oats are merely the season's clothing. Again and again he is reminded by glimpses of vast slides in the flanks of the gravel hills, that this is only another hydraulic mining country. Walls of broken gravel 400 feet perpendicular, like that so prominently in sight beyond the Arroyo Valle near Popes', a few miles east, overtop the tallest of the Sierra hydraulic banks. Go to it and he will wonder, in the silent solitude, what race of extinct Titans formerly existed and mined here, and ask himself what could they have been mining for, or deemed worth sluicing for other than gold?

The diagram shows a series of lines on the inside of the Alameda County hills, just opposite San Francisco bay and peninsula. The dotted line and first range of hills to the right of Sunol station, being in continuation of the terraced valleys of Llegunas to the south, and the remarkable flat topped summits stretching beyond Haywards pass to the north, present to the eye similar slight shovings and sagginge out of level (probably still in progress) to those observed in the section of San Francisco peninsula.

The change of level here since the Pliocene, in the ten miles from Mission sag to Decota hulge, must have been 100 feet, or as much as 10 feet to the mile, being perfectly regular. When the Mission sag had got so low at Alameda cañon as to form an outlet, more easily eroded, being shorter than the natural and longer one over Dublin plain and San Ramon and sand. The dotted line itself indicates the situation of washed beaches, and the highest of a series of porchlike bench formations, from the levels of which, in successive stages, Rohher's Cañon was eroded. These porches afforded the marauders from whose exploits the cañon derived its name, well known in connection with the history of Alameda county six or eight years ago, the most favorable points of outlook for pursuers, and easy escape over the summit, and down some of the converging cañons upon the opposite side of the Alameda range. One of these cahalleros being forced to take flight, struck to the eastward across the Pleasanton Gravel Range, and up the Arroyo Valle, as others of the gang had done before him, direct to the Big Slide, which is a natural fortress. The sheriff's pursuing party found this too strong and dangerous to attack, and between the labyrinth of towers and barrancas of the outlet the robber effected his escape.

Livermore valley was, in the Pliocence Tertiary, a part of the Gulf of California, which in outline and geologically, was a counterpart of San Francisco Bay. At its broad mouth were situated the islands of Tamalpais and Diablo, and other minor ones; and to north and south, the peninsular points of St. Helena and Mt. Lewis; and San Mateo Redwoods if the latter were not insular. The lines and physical features determining these facts are more definitely laid down in maps and papers in the office of the State Geological Survey.

The enormous Pleasanton and Livermore Gravel Ranges 500 to 600 feet in thickness are subaqueous deposits. In that they differ from the ancient river gravels of the Sierra Nevada, though they belong to the same period. Their bedding, scenic outlines and material, etc., establish these points. From the railroad in Livermore Valley anywhere, one may discern,

Chollar Potosi Mining Company.

The annual meeting of the Chollar Potosi Mining Company was held on the 8th inst., resulting in the re-election of the old officers. The Superintendent's report shows 37,789 tons of ore extracted during the year ending May 31st. The amount milled was 35,930 tons, averaging $26.17 per ton. During the previous year 84,681 tons were extracted, and in 1869-70 56,636 tons were taken out. The cost of extracting the ore during the past year was $2.38 per ton; reduction, including smelting and assaying $12.16; prospecting, repairs, dead work, etc. $4.19; total cost per ton $18.73; average yield $26.17; profit $7.44 per ton. The Secretary's report shows the following figures:

RECEIPTS.	
Proceeds of bullion sold	$940,120
Reclamation on mills	2,200
Sundries	2,254
Book accounts	390
Total receipts	$944,764
Cash on hand, per last statement	200,721
Total	$1,145,485
DISBURSEMENTS.	
Dividends to stockholders	$252,000
Working ores	431,179
Labor at mine	164,793
Timber and Lumber	44,480
State and Federal taxes	17,997
Hardware and Candles	10,826
Wood and Charcoal	4,907
Water account	6,600
Legal expenses	8,699
Freight expenses	3,970
General office expenses, etc	8,824
Miscellaneous	17,080
Total disbursements	$971,336
Cash at end of year	174,149
Total	$1,145,485

The company paid eight dividends during the year, seven of $1, and one of $2, or $9 per share, aggregating $252,000

Silk—Now for Information.

The people of the State have been for two or more years looking to the silk growers for information as to the nature of the industry of raising silk. And the silk growers have been looking to the California Silk Manufacturing Company to encourage their business, and to fix a paying price for their cocoons. The Silk Manufacturing Company have now been in operation for over a year, and have manufactured a large quantity of foreign and home-grown silk. Now we want some reliable information as to the value of the business for purposes of investment. This company will have its annual election meeting on the 5th of August next. Lets have some more light about the business. We want to know, not what this, that or the other one *thinks* can be made by feeding silkworms and producing cocoons; but what has this year or any other year been made in California at the business. And if there has not been a dollar made over cost of production, let us hear the truth of the matter.

And if the Silk Manufacturing Company can say just what they can pay for good California grown cocoons, let us know what it is.

EXTENSIVE MINING SALE.—The *Transcript* records a heavy sale of ditch and mining property in Placer county, by E. L. Bradley and M. S. Gardner to A. Chadbourne of this city for $375,000. The property summed up below is valuable and extensive, and is in the heart of a prosperous mining region.

The sale embraces the following property: One ditch from the North Fork of the American river, 30 miles long; three ditches from Cañon creek, one to supply the reservoir on "Hog's Back," one running to Gold Run and vicinity, one running to Dutch Flat and vicinity, connecting with reservoir at Alta; three ditches from little Bear river, one small ditch running to Elmore Hill, one to run water direct from Dutch Flat and vicinity, and one to run water to "Plug Ugly" hill, together with ten reservoirs and lakes. Also the following mining property in Dutch Flat Mining District: Yankee Co., 155 feet front by 434 feet back; New York and Wieconsin, 28 claims; Deep Shaft, 16 claims; Enterprise, 500 feet front by 600 deep; Boston, two-fifths of 20 claims; Iowe, one-fourth of 25 claims; Jehosopbat, one half of 36 claims; Waukeegan, 28 claims. Also the following in Gold Run District: Union, one-half of 600 by 900 feet; Schuylkill and Bailey, 25 claims; Gem, 385 by 1,200 feet; Gold Run, one-half of 60 claims; Gold Run Cañon, one-half of 150 by 2,000 feet; Druid, three-fifths of 16 claims; Ellison, 40 claims; Home Ticket, one-half of 26 claims; Rawley Cañon, 150 by 1,600 feet. Also the Sterrit claims, about 50 acres of mining ground in Lost Camp district. Also one section of timber land, being Section 36, Township 17 North, Range 12 East.

California Wines Endorsed.

At the banquet of the California Pioneers of Sacramento, on the 4th of July, I. N. Hoag introduced the following resolution, which was unanimously adopted:

"WHEREAS, The Committee of Arrangements have furnished for use on this occasion pure California wines, to the exclusion of all wines of a foreign brand or manufacture; and whereas, we have tried them and find them not only good but very good, therefore,

Resolved, That we, the California Pioneers of Sacramento and their friends present, unanimously indorse the action of the committee in this respect, and hope that hereafter all foreign wines will be excluded from the banquet tables of the California Pioneers throughout the State."

SMELTING.—The Phœnix furnace at Eureka, commenced smelting ore on the 9th inst. They have 1,000 tons of ore, 30,000 bushels of coal, and plenty of wood on hand.

Domestic Economy.

Are Tin Fruit Cans Injurious.

Much has been said of late with regard to the danger of metallic poisoning from eating fruit (especially very acid fruit) which has been put up in tin cans. A cotemporary says that tin hae long been justly regarded as one of the metals from the ordinary uses of which mankiud have notbing to fear. But the preseut age is characterized by ite factitious imitations. That which goes by the name of tin foil, is mostly an alloy of tin aud lead, and it is charged that many of the caps used for fruit jars, are made of zinc instead of tin. It is well known, also, that lead is used in soldering caus, aud that tbis metal ie attacked by certain orgauic acids which are contaiued in fruits. The tin of commerce is also by no mcans pure, and housekeepers will vouch that the tiu cans are often attacked by these acids, and eaten through so as to leak their fluid coutents. In the case of impuritiee in the tin used to coat tbe iron of the tin plates of commerce—when tbe caus are thus attacked, it may well be doubted whether the cumulated effects of metallic poisoniug do not sometimes result from this cause.

So far as the evideuce of the senses goes, housckeepers know that cooking tomatoes iu tin "ruins the basins" as oue good woman said; and another admitted that she commonly used up at least one basin iu a season for this purpose. How much injury tho partaker receives, wo do not kuow, but so much bas been said of the sad effects of metallic poisoning, eveu in small though long contiuued doses, that we would like to bo assured of safetv. Professor Youmans thinks it a small matter, but many medical authorities disagree with him. One of the latter says: "It ought to be known to housekeepers that acid, fatty, saline and even albuminous substauces, may occasiou colic, vomiting, etc., after having remained some time in tin vessels."

We see that the inner surface of the tin can is discolored after having been used for fruit, aud we find that the flavors of the more delicate fruits are injured when they have been kept in tin cans. Zinc is more readily oxidized than tin, and yet the caps of some of our glass caus are made of tbat metal.

If the amount of tin that may enter the system, as a result of its domestic use, is not likely to prove injurous, the questions are narrowed down to the purity of the article used, and the actual results of using the various cans prepared for our market.

Professor Edwards of the Woman's Medical College of the N. Y. Infirmary, said that the tin cane, *as prepared*, are very unsafe, that the acide dissolve the lead solder and sometimes oat through the entire plate, making the cans leak, and also that serious cases of poisoning had occurred from using their contents. If facts like these could be called out from scieutific meu, thcy would arrest public attentiou, and they might suggest to manufacturers of glass cans tbe desirability of protecting the inner surfaces of tbeir metallic caps in some way. Those with uetallic caps work so much more easily than others, that tbey will long he more or less iu demaud. Some people liue tbeir cape with stiff white paper—a small protection of course.

This snbject is of considerable importance in domestic economy of the household, and oue which should be more freely and fully discoursed by scienitfic men. Canned fruit has become a matter of almost daily use in many families, and if our familiee are eatiug a slow, metallic poison, the public ought to know it, and have the information conveyed by authority competent to judge and advise correctly.

Put Up Your Jam while Hot.—It is said that ordiuary jam—fruit and sugar which have been boiled together for eome time—keeps better if the pots into which it is poured are tied up while hot. If the paper can act as a strainer, in the eame way as cotton wool, it must be as people suppose. If one pot of Jam be allowed to cool before it is tied down, little germs will fall upou it from the air, and they will retain their vitality, because they fall upon a cool substance; they will he shut in by the paper, and will soon fall to work decomposing the fruit. If another pot, perfectly similar, be filled with a boiling hot mixture, and immediately covered over, though, of course, some of the ontside air must be shut in, any germe which are floating in it will be scalded, and in all probability destroyed, so that no decompositiou can take place.

Cooking Eggs.—Eggs broken in water are the "poached eggs" of the cook book, and a delicate way of preparing for table. Skill is however requisite to bring them unbroken on the platter. Butter your saucepan; then pour in boiliug water two inches iu depth; add a little salt; break the eggs carefully into a saucer, one at a tiue, and slip into the water; do uot crowd them; five or six at a time are snfficient for an ordinary pan. Keep the water just at boiling point. Wheu the whites are uicely set, and the yolks with a light covering that just reveal their richness, remove with a spoon to a platter, on which a few pieces of butter are laid. When all are taken up, a dash of pepper on each, and they aie ready for the table.

Okra or Gombo.

Did you ever eat okra or gombo—generally incorrectly spelled *ochra* or *gambo?* It is a West Indian plant, but almost universally used throughont the Southern States—and to some extent in the Middle Statee and in Cali fornia.

This plant belongs to tbe order of *malvaceæ*, the characteristic qualitiy of which is mncilaginoue. It is eaten green, like string-beans, the pod aud seed together. Tbe pod is about six iuches long, openiug iuto five longitudinal cells, filled with a great numher of seeds, which are sometimes roasted when ripe and used for coffee. Ite somewbat peculiar taste and excessively mucilaginous nature renders it rather distasteful at first; but an appetite for it is readily acquired. This vegetable is really more valuable for the table then generally supposed; but it must not be spoiled in the cooking.

Its nutritive qualities are quite remarkable, as it contains gum or gluten iu large quantities, which if properly administered to invalids and particularly that class suffering from consnmption in auy of its varied forms, is almost a "sheet anchor of hope," giving strength to the body, light to the eye, and color to the cheeks; which is priucipally accomplished by its easy digestion and assimilation.

In the South and throughout France, it is grown and nsed in large quautities, wbich would, if apart from other excesses, cause them to grow fat. In New Orleans and its vicinity as well as in that of Charleston, S. C., and wherever the French element has become mixed or blended with our native population it is sougbt for with an avidity truly astonishing.

The Northern people have "huckleberry feaste," catfish suppere," "clam bakes," etc., but they of the South have their okra or "gombo parties," where gombo forms a part and parcel of all the prepared dishes, beside those of it exclusively. Among the rest it ie cut fiue and cooked with stewed chicken which adds zest to the dish, to be relished by all the partakers. It is nsed freely when cut fine in vegetable soup, boiled and nsed with drawn butter, which latter dressing is improved by the addition of a small quantity of sherry or claret wine.

When used separately, by boiling, it is generally eaten whole or cut in two or three pieces; having been boiled from thirty minutes to an hour. When an appetite has been once acquired for it it becomes really a delicious dish. It is much used in vegetable soup with tomatoes, which may have added to it cabbage, potatoes, corn aud barley with a spriukle of parsley, summer savory, and a carrot or two, always using a piece of beef, which is preferred to a knuckle of veal as recommended by some.

It may also be boiled and dressed with butter, pepper and salt, with or without vinegar, or with drawn butter; or cut fine and cooked with stewed chicken, or in fact, any way or method which snggests itself.

Fresh Vegetables and Sweet Salads.

Those who value fresh vegetables and sweet salads will havo none washed in the garden. Neither the one nor the other should be washed nntil they are just ahout to be cooked or eaten. Even potatoes lose flavor quickly after being washed; so do carrots and turnips; while water will speedily become tainted in summer in contact with cauliflowere and cabbages, and thus destroy their freshness and flavor. The case is still worse with salads. If washed at all, it should be only before they are dressed, and they should be dried and dressed immediately. Nothing ruins tbe flavor of vegetables, and renders good salading uneatable, sooner than water hanging about them. If lettuces are quite cleau, they make the best salad unwashed; but if washed the operation should be done quickly, and the water instantly shaken out, and the leaves dried with a clean cloth. But, alas! how often are they cut and washed in the garden in the morning, and pitched into water into the scullery sink until wanted. What French *artiste* would be mad euough to rinse out his salad juice, and then recharge his lettuces and his eudivee with semi-putrid water?

The best practice is simply to remove all superfluous earth hy scraping or rubbing, and all rough tope or leaves by cutting. Enongh tender leaves may still be left on cauliflowers and brocoli to overlap the flowers. Salad should be sent in from the garden with most of the ontside leaves and main root on. The tender leaves are easily tainted and injured by exposure, and if the chief root is cut off sharp much of the juice oozes out at the wonnd. Where vegetables and salading have to he bought from a town greengrocer, the conditions are altogether different. Not only washing but soaking often becomes reqnisite to restore something like pristine crispness.

Use White Cheese.—The fact has been developed by a chemist at Cornell University, that every specimen of the so-called "best basket annatto," collected from eome of the finest cheese factories in Herkimer county, aud submitted for analysis by the Little Falls Farmere' Club, contained a large percentage of mineral or inorganic matter. Nearly every sample contained copper; aud tracee of arsenic, it was thought, were discovered in at least one. The presence of these poisons is certainly not calculated to render cheese "a healthy and nutritions article of food," and we are glad to learn, as we do from Mr. X. A. Willard, dairy editor of the *Rural New Yorker*, that the demand for white or uncolored cheese seems to be steadily increasing. Our authority statee that some of tbe Herkimer "fancy factories" have beeu making this kind all the season; that the sales have been at the highest rates, and he expresses the opinion that if it were not for the London trade and the requirements of certain English markets, there would be no difficnlty in banisbing all coloring material from the vats. So far as home consumption of chesse is concerued, our people would soon learn to prefer the uncolored article, aud the facts above developed in regard to aunatto may help to hasten tbie desirable consummation.

The Poetry of the Table.

In the first place, a starched and smoothly-ironed table-cloth—which, if neatly folded after every meal, will look well for several days. Then flowers and ferns in flat dishes, baskets, or small vases,—or else a tiny nosegay laid upon every napkin.

The salt must be pure aud emooth. The butter should be moulded iuto criss-crossed diamoud, shells, or globes, with the paddles made for this purpose.

A few pretty dishes will make the plainest table glow;—a small bright-colored platter for pickles, horse-radish, or jelly; aud butter-plates representing green leaves are also attractive.

A few pennies' worth of parsley or cress, mingled with small scraps of white paper daiutly clipped, will cause a plain dish to assume the air of a Freuce *entree*. A platter of hash may be ornamented with an edging of toasted or fried bred cut into points; and a dish of mutton chops ie much more impressive with the bones stacked as soldiers stack their guns, forming a pyramid in the center—each bone adorned with a frill of cnt paper. A few slices of lemon, miugled with sprigs of parsley and slices of hard-boiled eggs, form a pretty garnish to many dishes; and uothing could be more appetizing than beef, veal, muttou, or lamb made iuto mince-meat, and pressed into form in a wine-glass, then fried in pork fat, with a sprig of green placed in the top of each little cone. The basket of fruit—peaches, pears, grapes or apples, oranges aud grapes—should be tastefully arranged and trimmed with leaves and flowers. The bowl of salid shonld be ornameuted with the scarlet and orange flowers of the tropæolum, — their piquant flavor adding zest to tbe lettuce, with which they can be eateu.

Selected Receipts.

Boiled Indian Pudding.—Take sweet milk of sufficient quantity for the pudding desired; salt to the taste, and stir in Indian meal till a little milk will rise on the top by standing. If too thick it will be hard. Fill a pudding crock, and tie a cloth tightly over it. Put into boiling water sufficient to keep it covered, and boil steadily for threo hours. Fruit may be added if desired. Serve with sweetened cream. This is an old-fashioned Connecticut pudding.

Cornmeal Punning.—Two qnarts of sweet milk, one pint of cornmeal, one-half pint of beef suet or fat pork, chopped fiue, three eggs, aud a little nutmeg and salt; sweeten to your taste with sugar. Heat the milk, and while hot, stir iu the meal; after this, set it where it will cool, and then add the eggs. Bake from three to four hours in a slow oven.

Indian Meal Pudning.—Into one quart of boiling milk stir one quart of eifted fine meal; then add one quart of cold milk, two well beaten egge, one-half cup of sugar, one cup of flour, and a little salt and spice. Stir it well and pour it into a buttered dish. Bake two hours, and serve with butter.

Rice Waffles.—Oue cup of boiled rice, oue of flour, one quart of milk, one teaspoonful of butter, four eggs, a teaspoou half full of salt. Beat the white of the eggs to a stiff froth, and mix the whole very evenly. Bake in waffle-irons and butter before eaten.

Potato Cakes.—Take one dozen large potatoes, fresh boiled and mashed very fine, ¼ lb. butter, three eggs beaten, and ¼ lb. of flour, mix together with a fork (do not handle it), roll into thin cakes, and bake quickly in a hot oven.

Lemon Pie With Three Crusts.—A layer of crust, a layer of lemon, sliced fine, a little sugar, a layer of crust again, and sugar and lemon again, then the upper crust, makes a good lemon pie.

Another Way.—One cup of sngar, one cup of sweet milk, one egg, one and a half lemon, the grated peel and juice, one tablespoonful of flour; theu, after baking, the white of an egg beateu, sweetened and pnt on the top, then put in the oven and browned.

To Color Slate Color.—Boil yellow oak bark in an iron kettle till the etrength is extracted. Take out the bark, then add a very little copperas, aud you have a pretty color with no expense.

To Extract Ink from Floors.—Ink spots on floors cau be removed hy scouring them with sand wet iu oil of vitriol aud water mixed. Rinse them, wheu the ink is extracted, with strong pearl-ash water.

Brandy in Boiling Meat.—If as soon as meat is skimmed and thoroughly boiliug, two spoonfuls of brandy is added to every three pounds of meat, the meat will become tender, though it may have been very tough, and will not retain any taste of the brandy.

LEA & PERRINS'

CELEBRATED

Worcestershire Sauce.

Declared by Connoisseurs to be tbe only good Sauce.

Caution Against Fraud.

Tbe success of tbis most delicious and unrivalled Condiment having caused certain dealers to apply tbe name of "Worcestershire Sauce" to their own inferior compounds, the public is hereby informed that the only way to secure tbe genuine is to ASK FOR LEA & PERRINS' SAUCE, and see tbat their names are upon tbe wrapper, labels, stopper and bottle.

Some of the foreign markets baving been supplied with a spurious Worcestersbire sauce, upon the wrapper and labels of wbich tbe names of Lea and Perrins have been forged, L. and P. give notice that tbey bave furnisbed tbeir correspondents witb power of attorney to take instant proceedings against manufacturers and vendors of such, or any other imitations by wbich their right may be infringed.

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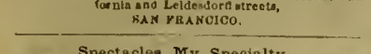
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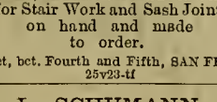
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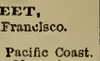
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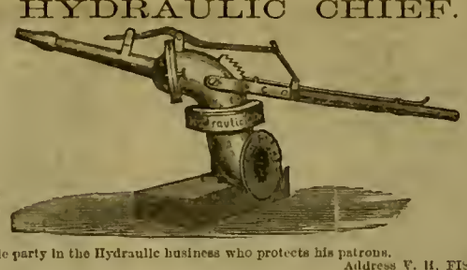
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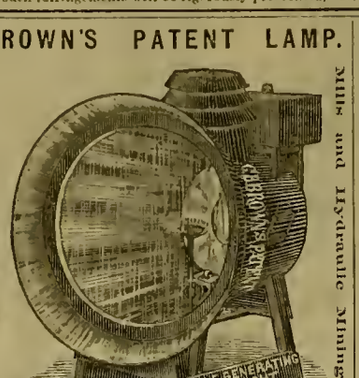

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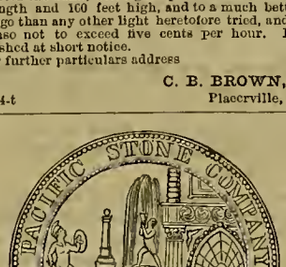

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16v20-3m JOHN F. LOHSE, Secretary.

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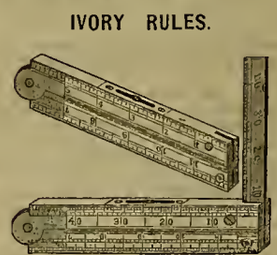
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PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[From Official Reports to DEWEY & CO., U. S. and Foreign Patent Agents, and Publishers of the Mining and Scientific Press.]

FOR THE WEEK ENDING JUNE 25TH.

MACHINE FOR SAWING STAVES.—Otto Osten, Tahoe City, Cal.

COVER FOR PEPPER-BOXES.—Henry E. Thomas, San Francisco, Cal.

CARBURETER.—Augustus F. H. Braun, S. F.

MONEY-DRAWER.—Henry Unna, San Francisco.

ICE-MACHINE.—David Boyle, San Francisco, Cal., assignor to himself and JOHN W. PEARSON, same place.

TRADE-MARK.

BEVERAGE.—Asher S. Taylor, San Francisco.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency

The Text of Interesting Decisions in Patent Cases.

COMMISSIONER'S DECISION.

ELI W. BLAKE, Extension.—[In the matter of the application of Eli Whitney Blake for the extension of Letters Patent for IMPROVEMENT IN STONE-CRUSHING MACHINES, granted June 15, 1858, and re-issued January 9, 1866.—Decided June 14, 1872.]

THE REGARD TO BE PAID BY THE OFFICE TO THE DECISIONS OF UNITED STATES COURTS—CONSTRUCTION OF CLAIMS.

The United States courts and the Supreme court of the United States having—after examination of the merits of the case and the discussion of the references relied on for opposing the extension of the Blake patent on the ground of its lack of novelty—concurred in vindicating the novelty of the said invention and the claims of the re-issue, the Commissioner of patents considers that matter disposed of, and refusee to call in question the actiou of the judges.

The construction given to a patent by the courts determines its legal character and defines its meaning.

Where a patentee has obtaiued two patents in the same line of inveution, the former containing in the rough the main principles of the machine, while the latter embraces the relatively-perfected devicee which give it working value, the Office, on applicatiou for extenciou, will have special regard to the intrinsic value of the earlier patent as the pioneer, especially when the original and the improved form are the invention of the same party.

LEGGETT, *Commissioner*.

In the origiual application the inveutiou secured by this patent is described as follows:

"My stone-breaker, so far as respects its principle or its essential characteristics, conеists of a pair of jaws, one fixed and the other movable, between which the stonee are to be broken, having their acting faces nearly in an upright position, and convergent downward, one toward the other, in euch manner that while the space between them at the top is such as to receive the stones that are to be broken, that at the bottom ie only sufficient to allow the fragments to pass when broken to the required size, and giving to the movable jaw a short and powerful vibration through a small space, say one-fourth of an inch, more or less."

January 9, 1866, the applicant obtaiued a reissue of said patent, and with the following claims:

"1. The combination, in a stone-breaking machine, of the upright convergent jaws with a revolving shaft, aud mechanism for imparting a dcfinite reciprocating movement to one of the jaws from the revolving shaft, the whole being and operating substantially as sct forth.

"2. The combination, in a stone-breaking machine, of the upright movable jaw with the revolving shaft and fly-wheel, the whole being and operating substantially as set forth.

"3 In combination with the upright converging jaws and the revolving shaft, imparting a dcfinitely limited vibration to the movable jaw, so arranging the jaws that they can be set at different distances from each other at the bottom so as to produce fragments of any desired size."

It would seem that the question of uovelty in this case need occupy but a moment's attention, as the patent has been several times before the courts and the claims fully sustained; yet the remonstrants protest in able argument that Blake's invention, as claimed, was fully anticipated, and the examiner, in his report, says:

"Touching the question of novelty, while it is not denied that a patent might have been properly granted, based npon a limited claim to the construction and combination of parts exhibited in the machine in question, attention is respectfully called to the following named cases herewith submitted, which would appear to the present examiner to substantially anticipate whatever of invention is embraced in said re-issue claims: James Hamilton, patented January 3, 1854; James Hamilton, patented May 22, 1855; Townsend Poore, patented May 12, 1857; Frederick Ohnmachts, filed August 24, 1857, and rejected."

In the case of *Blake vs. Stafford*, tried in the United States Circuit Court, district of Connecticut, September term, 1867, Judge Shipman, by the aid of learned council for aud against, makes an able and exhauetive examination of this whole matter, and after a full and careful diecusciou of each one of the referencee now cited by the examiner fully vindicates the novelty of Blake's invention and sustains the claims of the re-issue. On a motion for new trial the case wae taken to the United States Snpreme Court, and Justice Nelson reviewe and fully sustains the decision of Judge Shipman. The patent was also before Judge Drummond, in the northern district of Illinoie, Jnly term, 1871, in the case of *Blake vs. Eagle Manufacturing Company*, where the same references were urged and ably discussed and the patent snstained. Thus the patent has been three timee before the courts, and three of our most able judges have agreed in deciding that the referencеs cited by the examiner do not anticipate the applicant's inveutiou as set forth in the claims of his re-issue; and for the Commissioner to hold that these learned judges have all erred in their decisious would be an exhibition of unpardonable pedantry, notwithstanding the adverse opinion of the able examiner; hence I shall take for granted, without further discussion, that the novelty of the invention in question is satisfactorily estabhiehed.

The learned council for the remonstrants insist, however, that if the patent is extended the applicant shall be required to limit himself by disclaimer to the "jointed toggle" arrangement described in hie original applicatiou; but even this question was discussed before Jndge Drummond, who gave the invention and claim a scope sufficiently broad to cover a "rod and lever" connection, the very device the remonstrants desire to have disclaimed. If Blake is entitled to anything, it is his invention as construed by the courts, and the Office would not be justified in requiring him to limit himeelf to a narrower claim thau the courts have allowed him. I may further add that this patent, with snbstantially the same claim, has been in the Englisb courts, where it was sustained, and on this point Vice-Chancellor Wood held substantially the same as Judge Drummond.

The remonstrants also make the point that Blake's stone-crusher as described in this patent was a failure, aud that but very few of them were ever made; that the machine that has proved successful is the one constructed under his patent of 1860, and hence the 1858 patent should not be extended. It is probably true that but few machines have been constructed under this pateut, and, though having great iutrinsic value, yet, as compared with the Blake machine of 1860, it was a failure. Blake discovered the defects in the machiue of 1858 himself, and remedied those defects iu the machine which he patented iu 1860. The latter machine was only an improvement ou the former, aud embraced substautially all the elements of the former. The machine of 1858 is the basis upou which the one of 1860 is built. When the invention of 1858 becomes pnblic property the patent of 1860 becomes of little value. It has beeu the uniform practice of the Office to favor pioneer iuventions, eveu where the improvements have been made by others, and the reasoue for the practice are donbly strong where the original inventor has improved his own machine. This same objection was urged in the Lipman pencil-tip extensiou case, and was discussed in the decision of that case, publish-ed in the *Official Gazette* of April 2, 1872, to which reference is made.

It is admitted that the invention ie one of great importance and the value far beyond all that the inventor has received from it, and the proof shows that he has used dne diligence in creating and supplying the demand for it. I see no reason for believing that the extension would be detrimental to the public. The extension will be grauted.

A GILROY INVENTION.—J. S. Woolsey of this city has invented and reduced to practical perfection a portable heating machine that cannot fail in occupying a prominent place among the many useful inventions of the day. It is particularly useful in the manufacture of cheese, and also for cooking and laundry purposes, and is entirely safe from explosion. The machine is 32 inches long and 17 in diameter, contains 11 flues of 1¼ inches each in diameter, with a fire box 18 inches long and 10 inches in diameter. The safety valve is so ingeniously and yet so simply arranged that explosion is impossible. It requires but little fuel and will warm water to a boiling heat in five minutes. Every farmer, laundry and dairyman should immediately procure one. Mr. Woolsey has made application [through the MINING AND SCIENTIFIC PRESS Agency] for a patent. It may be seen at his shop on Monterey street in this city.—*Gilroy Advocate.*

A NEW BOOK ON MINING.

The Explorers', Miners' and Metallurgists' Companion: Comprising a Practical Exposition of the Various Departments of Exploration, Mining, Engineering, Assaying, and Metallurgy. The Most Practical and Comprehensive Work on Mining Subjects Extant. Comprising 640 Pages, and 81 Engravings. By J. S. Phillips, M. E. Price, bound in cloth, $10 (in coin); in leather, $12. Forwarded by mail, in cloth, $11.40, currency; in leather, $13.75. Issued and for sale by DEWEY & Co., Patent Agents and Publishers Mining and Scientific Press, S. F.

If you want pictures or fine frames, cheap, send to Sanborn, Vail & Co., 31 Kearny street, S. F. 18v24-3m

STOCK SALES FOR WEEK ENDING JULY 11—S. F. Stock and Exchange Board.

NAMES OF COMPANIES.	Feet in Mine.	Shs. in ft.	Total Shs.	FRIDAY. Shs	Prices.	SATURDAY. Shs	Prices.	MONDAY. Shs	Prices.	TUESDAY. Shs	Prices.	WEDNESD'Y Shs	Prices.	THURSDAY. Shs	Prices.
*Alpha	300	20	6000					690	30 @58	615	57 @57½	150	47 @50	150	61 @65
§American Flag	2,600	11½	30000					1720	19 @20¼	1641	21 @22½	1045	22 @25	1000	23½@24½
*Belcher	1,040	10	10400					10	1000			20	1020		
*Baltimore	1,200	20	24000					40	2¼	170	2¾	60	2¾@ 2¾	200	2½@ 2¾
§Bowery	1,000	30	30000					210	2½@ 2¾	1330	3 @ 3⅛	700	3 @ 3¼	45	3 @ 3⅛
*Buckeye			16000					10	3	110	3½@ 3⅝	180	3½	25	3½
*Chollar	2,800	10	28000					60	104 @107	135	105 @106	10	103	210	104 @105
*Caledonia	5,000	4	20000							250	48 @50	230	45 @47	720	49 @51
*Cons. Virginia	1,160	20⅜	23600					95	23 @23⅛			140	25 @26	200	25 @27
*Crown Point	1,000	16⅝	16000					390	168 @170	90	167 @170	210	168	300	168 @172
*Daney	2,000	12	24000					70	2	50	2	350	1⅞	150	1¾
‖Eureka Cons			5000					40	2	1250	27½@28⅜	30	25 @27½	850	24 @26
†Eureka	1,680	12	2000							10	16½				
*Exchequer	400	20	8000					220	11½@17	720	20 @27	350	18 @21	150	24 @25
*Eclipse	70	357	25000					20	4½@ 4⅝	720	10 @11			1255	10½@12
*Empire Mill	75	16	1200												
*Gould & Curry	1,200	4	4800					30	170 @175	40	167½@168	23	166 @170	78	175 @180
†Golden Chariot	750	1⅜	10000					20	7	130	8½@ 9	50	8½@ 8⅝	10	9
†Hale & Norcross	400	40	16000					50	71 @72	40	71¾@72½	170	69 @73	520	69 @74
§Hinh & Hant	3,800	5	20000					100	3	150	3¼				
‖Ida Elmore	1,300	17½	10000									100	14 @14½	30	14
*Imperial	184	543⅜	100000					6065	5 @ 9	4830	11 @15½	1720	10¾@11½	4875	14 @16
*Julia	2,000	15	30000												
*Justice	3,000	7	21000									250	8½@ 9¾	110	10 @11
*Kentuck	80	21	2000									10	285	85	295 @300
*Knickerbocker	1,200	20	24000					370	5 @ 5½	235	6 @ 6¼	230	6 @ 6⅜	310	6¼@ 7
‡Mammoth	1,800	20	36000					200	50c						
§Meadow Valley	24,023	2½	60000					1733	15½@16	3380	16 .18	13	17½@18	1623	17½@18
‖Mahogany	72	137½	10000							200	16	60	16		
*Ophir	1,400	12	16800					240	86 @40	1858	35 @38	1686	36 @37½	115	36 @37
†O. H. Treasure	800	26⅜	21333					85	10¼	98	10¾@11	90	10¾@11		
*Overman	1,2 0	10⅜	12800					90	80 @85	1358	78 @82½	10	75	90	74 @75
*Occidental	800	12½	10000												
§Pioche	1,000	20	20000					2070	25 @32	2910	31 @38	2230	39½@43	1315	45 @50
§Page & Panaca	2,4 0	16⅔	40000					200	1½	260	1⅞@ 2	430	2	100	2½
*Phœnix			50000					750	4	875	4 @ 4¼	900	4¼@ 4⅞	835	4½@ 4⅝
§Raymond & Ely	4,000	7½	30000					775	142 @150	595	149 @158	553	149 @153	239	153 @155
*Savage	900	20	18000					135	129 @150	135	137 @142	145	149 @142	17	139 @140
*Seg. Belcher	160	40	6400					130	87 @90	65	91 @92½	90	86 @89	90	88 @92½
*Sierra Nevada	3,000	7½	20000					65	16	110	15¾@16	60	15 @15½	95	15 @15½
*Succor	7,600	3	22800					200	4	50	4	315	4 @ 4¼		
†St. Patrick	1,800	1⅔	3000												
†South Chariot	600	30⅔	20000									10	3¼	10	9
§Wash. & Creole	200	150	30000					1700	5¼@ 6	2390	5¾@ 6⅛	270	6 @ 6⅜	40	5⅞@ 6¼
*Yellow Jacket	1,200	20	24000					150	149 @125	44	127 @132	150	126 @127	97	130 @135
*Ynle Gravel	400	25	10000					50	2			120	2 @ 2½	155	2¼

NOTES.—†—California. *—Washoe. ‡—White Pine. §—Ely District. ¶—Eureka District. ‖—Idaho. ¡—Nearly. ¿—Over

S. F. Stock and Exchange Board.

THURSDAY, JULY 11, 1872.

The sales at the Board for the week ending July 3d, amounted to $1,306,000. The largest transactions were in Imperal. The sum of $80,000 was shipped from the Pioche mine on 6th inst. The Raymond & Ely mine, from the 1st to the 5th inst., shipped $67,100; the Kentuck has shipped so far this month $8,870. The Sierra Nevada mine produced last week 300 tons of ore; and the Chollar Potosi 900 tons, aseaying $42 per ton; the Hale & Norcoss turned out 420 tons, the Savage 1,065 tons, assaying $21.98 per ton; the North Star mine produced 83 tone aud reduced 60 tons. The Buckeye ore reduced during the month of June, yielded $4,658.

The high grade ore iu the 1,000-foot level of the Belcher mine ie looking better than was expected. The developments in the Pioche are excelleut; assays from the vein development in the Imperial vary from $100 to $450 per tou.

The following dividends are announced this week: Pioche, $1; Belcher, $30; Crown Point, $3; Raymond and Ely, $7. Assessments have been levied as follows: St. Lonis, $1; Phœnix, $1; Pacific Borax, 15 cents; Senator, 25 cente; Daney, 75 cents; Empire Mill and Mining Co., 50 cents.

The latter part of this week stocks have been quite lively. The Board adjourned over from the 4th of July nntil Monday, the 8th inst., when business was resumed. Pioche and Raymond and Ely showed a marked advance on that day; Pioche selling at $37, and Raymond and Ely $147. Compared with the sales on the 3d inst., Savage advanced $10, Alpha, $9, Pioche, $12, Raymond and Ely, $7, Exchequer, $4, Ophir, $3; Segregated Belcher and Hale and Norcross, each $2. Gould and Curry declined $4.

On Tuesday the market continued active, and prices were still higher for nearly all descriptions. Alpha advanced $4 from previous morning's sales. Chollar Potosi $2, Caledonia $3, Baltimore, Hale & Norcross and Ophir, each $1. Exchequer $7.50, Meadow Valley $1.50, Overman $2.50, Pioche $3, Savage $3.50, Segregated Belcher $2.50 and Yellow Jacket $7.50; Gould & Curry declined $2.50.

On Wednesday stocks dropped a little, Belcher advancing $20, Kentuck $15, and Consolidated Virginia $2.50, while Alpha declined $17, Exchequer $7, Yellow Jacket $5, Segregated Belcher $4.50, Caledonia and Chollar Potosi $3, Imperial $2, Hale & Norcross each $1.

To-day a reaction ensned, and Ophir advanced $15, Caledonia $5, Chollar Potosi $2, Confidence $3.50, Consolidated Virginia $1, Crown Point $2, Exchequer $5, Gould & Curry $7, Segregated Belcher $4, and Yellow Jacket $5; Hale & Norcross declined $1, Overman $4, Savage $2.50 and Ophir $1.

The last reports concerning the progress of work and the latest developments in all the prominent mines on the coast, will be found in our "MINING SUMMARY."

San Francisco Metal Market.

PRICES FOR INVOICES

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, July 11, 1872.

IRON.—			
Scotch Pig Iron, ₱ ton	$80 00	@	85 00
White Pig, ₱ ton	70 00	@	75 00
Refined Bar, bad assortment, ₱ lb	— 04½	@	— —
Refined Bar, good assortment, ₱ lb	— 05	@	— —
Boiler, No. 1 to 4	— 05½	@	— —
Plate, No. 5 to 9	— 06	@	— —
Sheet, No. 10 to 13	— 07	@	— —
Sheet, No. 14 to 20	— 08	@	— —
Sheet, No. 24 to 27	— 09	@	— —
Horse Shoes	7 50	@	
Nail Rod	10		
Norway Iron	8		
Rolled Iron	5		
Other Irons for Blacksmithe, Miners, etc.	5	@	6
COPPER.—			
Sheathing, ₱ lb	— 40	@	— 45
Sheathing, Yellow	— 30	@	— 33
Sheathing, Old Yellow	— 12	@	— 12½
Composition Nails	— 28		— 30
Composition Bolts	— 28		— 30
TIN PLATES.—			
Platee, Charcoal, IX ₱ box	19 00		19 50
Plates, I C Charcoal	17 00		17 50
Roofing Plates	16 00		18 50
Banca Tin, Slabs, ₱ lb	— 50		— 55
STEEL.—English Cast, ₱ lb	— 15		— 16
Drill	15		16
Flat Bar	17		18
Plough Points	3 75		
Russia (for mould boards)	12½		
QUICKSILVER.—₱ lb	— —		— 85
LEAD.—Pig, ₱ lb	— 05¾		— 06
Sheet	— 10		— —
Pipe	— 9		— 10
Bar	— 06¾		— 07
ZINC.—Sheets, ₱ lb	— 11		— 11½
BORAX.—Refined	— 27		— 30
Borax, crude	— 5		— —

Leather Market Report.

[Corrected weekly by Dolliver & Bro., No. 109 Post st.]

SAN FRANCISCO, Thursday, July 11 1872.

SOLE LEATHER.—The Eastern market ie higher, and some tanners have advanced their pricee here. We quote as below:

City Tanned Leather, ₱ lb	26@29
Santa Cruz Leather, ₱ lb	26@29
Country Leather, ₱ lb	25@28
Stockton Leather, ₱ lb	26@29

French skins continne firm. All California skins are scarce and bring full prices.

Jodot, 8 Kil., per doz	$80 00@
Jodot, 11 to 13 Kil., per doz	70 00@ 88 00
Jodot, second choice, 11 to 15 Kil. ₱ doz	60 00@ 76 00
Lemoine, 16 to 18 Kil., ₱ doz	75 00@ 77 50
Levin, 12 and 13 Kil., per doz	68 00@ 70 00
Cornellian, 16 Kil., per doz	70 00@
Cornellian, 12 and 14 Kil., per doz	67 50@ 68 00
Ogeran Calf, ₱ doz	64 00@
Simon, 18 Kil. ₱ doz	65 00
Simon, 20 Kil. ₱ doz	68 00
Simon, Kid, ₱ doz	72 00
Robert Calf, 7 and 8 Kil	35 00@ 40 00
French Kipe, ₱ lb	1 10@ 1 30
California Kip, ₱ doz	60 00 to 80 00
French Sheep, all colors, ₱ doz	15 00
Eastern Calf for Backs, ₱ lb	1 10@ 1 25
Sheep Roane for Topping, all colors, ₱ doz	9 00@ 13 00
Sheep Roans for Linings, ₱ doz	5 50@ 10 50
California Rnssett Sheep Linings	1 75@ 5 50
Best Jodot Calf Boot Legs, ₱ pair	5 25
Good French Calf Boot Legs, ₱ pair	4 50@ 5 00
French Calf Boot Legs, ₱ pair	4 00
Harness Leather, ₱ lb	30@ 37½
Fair Bridle Leather, ₱ doz	48 00@ 72 00
Skirting Leather, ₱ lb	34@ 37½
Welt Leather, ₱ doz	30 00@ 50 00
Buff Leather, ₱ foot	18@ 21
Wax Side Leather, ₱ foot	20@ 22

MARAVILLA COCOA.—No breakfast table is complete without this delicious heverage. The *Globe* says: "Various importers and manufacturers have attempted to attain a reputation for their prepared Cocoas, but we doubt whether any thorough success had been achieved until Messrs. Taylor Brothers discovered the extraordinary qualities of 'Maravilla' Cocoa. Adapting their perfect system of preparation to this finest of all species of the Theobroma, they have produced an article which supercedes every other Cocoa in the market. Entire solubility, delicate aroma, and a rare concentration of the purest elements of nutrition, distinguish the Maravilla Cocoa above all others. For homeopaths and invalids we could not recommend a more agreeable or valuable heverage." Sold in packets only by all grocers, to whom also may he had Taylor Brothers' Original Homeopathic Cocoa and Soluble Chocolate Steam Mills —Brick Lane, London. Export Chicory Mille, Bruges, Belgium. jun29-5w

State University.—The next term of the Preparatory Department will begin April 20th, 1872.

The course of study embraces the Ancient and the Modern Languages and the higher Mathematics, and is specially adapted to the University curriculum.

Terms, $12 a term. GEORGE TAIT, Oakland. 13v3hp-tf

Mining and Other Companies.

Owing to the time necessary to mail the present large edition of the M. & S. Press, we are obliged to go to press on Thursday evening—which is the very latest hour we can receive advertisements.

Corona Consolidated Mining Company—

Location of works, Eureka District, Lander County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 25th day of June, 1872, an assessment of Ten Cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No. 409 California street, up stairs, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 31st day of July, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the 22d day of August, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. F. CRONISE, Secretary.

Office, 409 California street, San Francisco, California. Jun29-3t

Eagle Quicksilver Mining Company---Location of mines, Eagle Mining District, Santa Barbara County, California.

NOTICE.—There are delinquent upon the shares of the following named persons, on account of assessment levied on the 8th day of May, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Bush, A T	Unissued.	1	$40 00
Benton, S T	Unissued.	1	40 00
Benton, Benj	Unissued.	1	40 00
Brinkerhoff, S B	Unissued.	2	80 00
Church, Thos. R	Unissued.	1	40 00
Crane, A. M	Unissued.	1	40 00
Fernald, Chas	Unissued.	1	40 00
Kyle, J. J	Unissued.	2	80 00
Ploche, F. L. A	Unissued.	2	80 00
Richards, Janet T.,	Unissued.	1	40 00

And in accordance with law, and the articles of agreement of said Company, and an order of the Board of Trustees thereof, made on the 8th day of May, 1872, the whole or such undivided part of each delinquent share in said mines, as may be necessary to pay said assessment upon each, will be sold to the highest bidder, at public auction, for cash, in United States gold coin, at the office of the Company, Room 5, No. 302 Montgomery street, San Francisco, California, on Monday, the 15th day of July, 1872, at the hour of 2 o'clock, P. M., of said day, to pay the said delinquent assessment thereon, together with costs of advertising and expenses of sale.

WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery street, San Francisco, California.

San Francisco, July 13, 1872. jyl3-1t

Excelsior Mill and Mining Company—Location of works, Cope Mining District, Elko county, State of Nevada.

Notice is hereby given, that at a meeting of the Trustees of said Company, held on the 20th day of June, A. D., 1872, an assessment of Two Dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the company, No, 415 Montgomery street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Saturday, the 27th day of July, A. D., 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 19th day of August, A. D., 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. FRANK SWIFT, Secretary.

Office, No. 415 Montgomery street, San Francisco, Cal. Jun22-3t

Hudson Gold Mining Company—Location of works, Cherokee Mining District, Plumas county, State of California.

Notice is hereby given, that a meeting of the Trustees of said Company, held on the 18th day of June, A. D., 1872, an assessment of Ten Cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the company, No. 411 California street. Any stock upon which said assessment shall remain unpaid on Saturday, the 27th day of July, A. D., 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 17th day of August, A. D., 1872, to pay the delinquent assessment, together with costs of advertising and expenses of the sale.

J. L. KING, Secretary.

Office, 411 California street.

Lyons & Wheeler Mining Company—Location of works, Maynard Mining District, Mohave County, Arizona Territory.

NOTICE.—There are delinquent upon the following described stock, on account of Assessment, No. 2, levied on the 18th day of May, 1872, the several amounts set opposite the names of the respective Shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Archibald C. Peachy	7	100	$10 00
Archibald C. Peachy	8	100	10 00
Archibald C Peachy	9	100	10 00
Archibald C. Peachy	10	100	10 00
Archibald C. Peachy	11	100	10 00
Archibald C. Peachy	12	100	10 00
Archibald C. Peachy	13	100	10 00
Archibald C. Peachy	14	100	10 00
Archibald C. Peachy	15	100	10 00
Archibald C. Peachy	16	100	10 00
Archibald C. Peachy	17	100	10 00
Archibald C. Peachy	18	100	10 00
Archibald C. Peachy	19	100	10 00
Archibald C. Peachy	20	100	10 00
Archibald O. Peachy	21	100	10 00
Archibald C. Peachy	22	100	10 00
Archibald C. Peachy	23	100	10 00
Archibald C. Peachy	24	100	10 00
Archibald C. Peachy	25	100	10 00
Archibald C. Peachy	26	100	10 00
Archibald C. Peachy	27	100	10 00
Archibald C. Peachy	28	100	10 00
Archibald C. Peachy	29	100	10 00
Archibald C. Peachy	30	100	10 00
Archibald C. Peachy	31	100	10 00
L. L. Robinson	34	5000	500 00
E. Martin Smith	36	2500	250 00
L. Maynard	37	2500	250 00

And in accordance with law, and an order of the Board of Trustees, made on the 18th day of May, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, Room, No. 3, No. 419 California street, San Francisco, California, on the 15th day of July, 1872, at the hour of Three o'clock P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

T. W. COLBURN, Secretary.

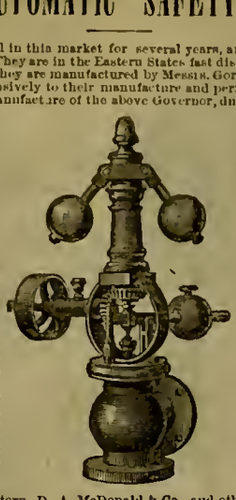
Office, room No. 3, Hayward's Building, No. 419 California street, San Francisco, California. Jun29-3t

Office of the Tyler Mining Company, San Francisco, July 9th, 1872.

The regular annual meeting of the stockholders of the Tyler Mining Company will be held at the office of the Company, Room No 22, Merchants' Exchange, California street, San Francisco, California, on Monday, the 22d day of July, 1872, at 1 o'clock P. M., of said day.

jyl3-2w ALFRED K. DURBROW, Secretary.

THE GARDNER AUTOMATIC SAFETY-STOP GOVERNOR.



These Governors have now been sold in this market for several years, and wherever once introduced and made known, are invariably sought after. They are in the Eastern States fast displacing all other Steam Governors, and are regarded as *the perfect regulator*. They are manufactured by Messrs. Gorchar & Robertson, practical engineers, who have given many years time exclusively to their manufacture and perfection. The manufacturers say: After an experience of eleven years in the manufacture of the above Governor, during which time several important improvements have been made and two additional patents obtained, we feel justified in recommending it to all parties using Steam power, and warranting it to be the most perfect regulator in the market.

The Gardner Governor is so well known that we think it unnecessary to enforiate a detailed explanation of the principles involved, or details in its construction, merely giving the leading objects realized by this important invention. The Governor combines with the greatest simplicity of construction, accurate regulation of speed, POSITIVE INSURANCE AGAINST ALL ACCIDENTS LIABLE TO OCCUR FROM SLIPPING OR PARTING THE GOVERNOR OR DRIVING BELTS, and a convenient arrangement FOR ADJUSTING THE SPEED OF THE ENGINE WHILE IN MOTION, without change of pullies.

The construction of the Governor is extremely simple, having no springs, lusible joints, swivels, or parts liable to disarrangement, all the several parts are duplicates of each other in the same series; the most skillful workmen are employed, the best material used and the machinery employed especially adapted to their manufacture. The valve is most PERFECTLY BALANCED, and the Governor is built with a view of securing the quickest and most sensitive action possibly attainable in a steam regulator. Thus with accurate machinery, and skilled labor, and devoting our WHOLE ATTENTION to the manufacture of THIS ONE ARTICLE, we are able to produce a perfect and reliable Governor at a low price.

We do not publish any letters of recommendations, but can give references to upwards of 5,000 PARTIES THROUGHOUT THE UNITED STATES, who are using the Gardner Governor.

We would especially invite the attention of Steam Engine Builders to this Governor, feeling assured that they can purchase for less than they can make an inferior article, and thereby increase the value and sales of their Engines.

We respectfully refer to the following parties using the GARDNER GOVERNOR, and can speak understandingly of its merits: Oakland Cotton Mills, the Selby Lead and Silver Smelting Works, L. & E. Emanuel, Vulcan Iron Works, Fulton Foundry, Levison Bros., Cal. Jewelry Co., Pioneer Woolen Factory, D. A. McDonald & Co., and others in San Francisco; Ophir Co, Lady Bryan, and Sacramento and Meredith Mills, John McCone, Virginia, Nev.; Globe Iron Works, Stockton; A. F. Chury, Albany, Oregon, and many others.

☞ WE WARRANT these Governors to give perfect regulation of speed under all circumstances; and if there is one within one thousand miles of San Francisco, that is not giving perfect satisfaction, it may be returned to us at our expense, and we will exchange it for any other Governor in the country, or refund its price.

☞ When ordering please state whether THROTTLE-VALVE is wanted or not; and whether BLOCK or FINISHED Governor is desired. ***THE RATE OF SPEED FOR GOVERNOR IS FULLY STAMPED ON THE REVOLVING HEAD OF EVERY GOVERNOR. Send for circular and price list to

TREADWELL & CO.,

Agents for Pacific States, San Francisco.

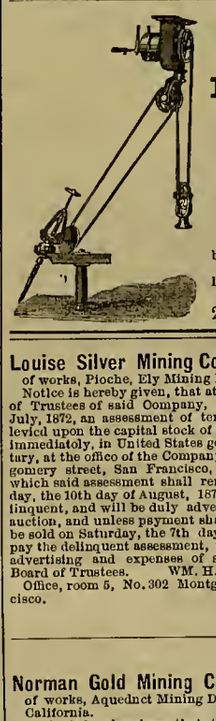
☞ At Treadwell & Co.'s (late BERRY & PLACE'S) Machinery and Supply Depot may be found in stock the above Governors, together with all sizes of HOADLEY'S PORTABLE ENGINES, BLAKE'S STEAM PUMPS, STURTEVANT BLOWERS, PORTABLE DRILLS, TAPS AND DIES, DREYFUS'S CYLINDER LUBRICATORS, Etc. Also a heavy stock of HARDWARE AND MINING TOOLS, LEATHER BELTING, LINEN HOSE, BOILER FELT (saves 25 per cent. of fuel), SELF OILERS, LACE LEATHER, STEAM PACKING (all kinds), BELT STUDS, Etc., Etc., embracing every description of Engineers' and Machinists' supplies and Millmen's findings. 7v24-tf

CAMERON'S

MINING STEAM PUMPS.

DAVID STODDART,

114 Beale Street, - - - - - - - - - SAN FRANCISCO.



PORTABLE

DRILLING MACHINES,

THORNE & DE HAVEN,

Twenty-third and Cherry Streets, Philadelphia.

These machines can be placed with as much facility as a ratchet brace, and can be used in any position, at any distance, and in any direction from the power.

The No. 1 is capable of drilling up to 1¾ inches in diameter; the No. 2 up to 1¾ inches; and the No. 3 up to 2¼ inches, and boring up to 4 inches.

Send for Circulars and Photographs.

2v25-3m J. W. H. DAFFIN.

Louise Silver Mining Company—Location of works, Pioche, Ely Mining District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 3d day of July, 1872, an assessment of ten cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, room 5, No. 302 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Saturday, the 10th day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 7th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees. WM. H. WATSON, Secretary.

Office, room 5, No. 302 Montgomery street, San Francisco. jul5.

Norman Gold Mining Company---Location of works, Aquednct Mining District, Amador County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said company, held on the 27th day of June, 1872, an assessment of five cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary at the office of the company, room 5, No. 302 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Thursday, the 1st day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the 22d day of August, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office—Room 5, No. 302 Montgomery street, San Francisco.

Tecumseh Gold, Silver and Copper Mining Company—Location of works, Gopher District, Calaveras County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 26th day of June, 1872, an assessment (No. 14) of ten (10) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, F. J. Herrmann, at the office of the Company, No. 534 Washington street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 31st day of July, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the 22d day of August, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

F. J. HERRMANN, Secretary.

Office, 634 Washington street, Room No. 2, up stairs, San Francisco, Cal. Office hours from 11 A.M. to 2 P.M.

Union Gold Mining Company—Location of works, Howland Flat, Sierra County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 25th day of June, 1872, an assessment of one dollar ($1.00) per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company rooms, No. 22, Merchants' Exchange, California street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 29th day of July, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 19th day of August, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

ALFRED K. DURBROW, Secretary.

Office, room No. 22, Merchants' Exchange, California street, San Francisco, Cal. June29-3t

"Pacific Ramie Company"—Notice Is

hereby given, that at a meeting of the Board of Trustees of said company, held on the 11th day of June, A. D., 1872, an assessment of Twenty Cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary at his office, No. 214 Battery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 13th day of July, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, August 9th, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. THOS. R. HAYES, Secretary.

jun22-td

Spring Mountain Tunnel Company—Location of works, Lincoln County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 9th day of July, 1872, an assessment of thirty cents (30) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary. Any stock upon which said assessment shall remain unpaid on the 16th day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 7th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.

Office, Room 37, third floor, New Merchants' Exchange, California street, San Francisco, California. july 13

William Penn Consolidated Gold and Silver Mining Company—location of works, Devil's Gate District, Storey County, State of Nevada.

Notice is hereby given, that at a meeting of the Trustees of said Company, held on the 3d day of July, A. D., 1872, an assessment of ten cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No. 6, Montgomery street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 5th day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 2d day of September 1872, to, pay the delinquent assessment, together with the costs of advertising and expenses of sale. By order of the Board of Trustees.

JNO. F. POPE, Secretary.

Office, No, 6 Montgomery street, San Francisco, California. July6-4t.

Winnemucca Chief Silver Mining Company—Location of Works, Humboldt County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 19th day of June, 1872, an assessment of fifteen cents per share was levied upon the capital stock of said Company, payable immediately, in United States Gold coin, to the Secretary, at the office of the Company, No. 409 California street, up stairs, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 30th day of July, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the 20th day of August, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. F. CRONISE, Secretary.

Office, 409 California street, San Francisco. Cal. Junc29-3t.

Woodland Gold Mining Company—Location of works, West Point Mining District, Calaveras County, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 21st day of May, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificates.	No. Shares.	Am't.
John H Wood, Trustee	5	20	$2 50
John H Wood, Trustee	8	20	2 50
John H Wood, Trustee	9	20	2 50
W H Rbodes	23	500	62 50
George Bowor	24	500	62 50
Isaac S Allen	25	500	62 50
H O Howard, Trustee	26	200	25 00
Wallace Everson	29	442	55 25
C F Brown, Trustee	30	500	62 50
C F Brown	33	26	3 25
William Stuart	34	606	75 75
William J Gunn	36	126	15 75
Frederick Madge	44	1,000	125 00
Frederick Madge	45	300	37 50
John H Wood, Trustee	47	200	25 00
John H Wood, Trustee	49	50	6 25
Thomas Anderson	54	250	31 25
Jnics Greenhood	57	500	62 50
Jules Greenhood	58	500	62 50
Frederick Madge	62	150	18 75

And in accordance with law and an order of the Board of Trustees, made on the 21st day of May, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by John Middleton & Son, at No. 310 Montgomery street, San Francisco, California, on the sixteenth day of July, 1872, at the hour of one o'clock, P. M., of said day, to pay said delinquent assessments thereon, together with cost of advertising and expenses of sale. F. MADGE, Secretary.

Office, No. 64 Merchants' Exchange, California street, San Francisco, California. Jun29-3t

EDITORS M. & S. PRESS.—An erroneous impression prevails that the GIANT POWDER Company's Works exploded. This is not tho case; but the works of the Hercules Powder Company (which is a totally different substance) were destroyed by the explosion.

The undersignod will fill all orders for both grades Giant Powder, as heretofore.

BANDMANN, NIELSEN & CO.,

26v24-3t General Agents Giant Powder Co.

Blowers, Steam Pumps, Hair Felt.

Mining Tools

PORTABLE ENGINES, TURBINE WATER WHEELS, Wood and Iron Labor-Saving Machinery, Hardware, Belting, Lacing, Packing, and a general stock of Engineers', Miners', Farmers' and Mechanics' Tools and Mill Supplies.

TREADWELL & CO.,

At the Old Stand, } Cor. Market and Fremont Sts., SAN FRANCISCO.

12v24

"STAR" CANDLES.

MINERS AND TUNNEL MEN are reminded that we are in constant supply of the old and popular brand of

PROCTER & GAMBLE'S

Cincinnati "Star" Adamantine Candles, the best and cheapest in the market, affording the MOST LIGHT FOR THE LEAST MONEY, and in every particular sustaining their reputation as the leading candle of the U S. For sale in lots to suit by

ROSS, DEMPSTED & CO.,

25v26-3m 105 and 107 California St., S. F

Machinists and Foundries.

ESTABLISHED 1851.

PACIFIC IRON WORKS,

First and Fremont streets,

SAN FRANCISCO

IRA P. RANKIN. A. P. BRAYTON.

GEO. W. FOGG, Superintendent.

Steam Engines and Boilers.

MARINE AND STATIONARY,

IRON AND BRASS CASTINGS

Mining Machinery of Every Description,

And all other classes of work generally done at first-class establishments, manufactured by us at the lowest prices, and of the best quality.

☞ Particular attention paid to Jobbing Work and Repairs.

N. B.—Sole Agents for sale of HUNTOON'S CELEBRATED PATENT GOVERNOR.

18v20-3m GODDARD & CO.

FULTON

Foundry and Iron Works.

HINCKLEY & CO.,

MANUFACTURERS OF

STEAM ENGINES,

Quartz, Flour and Saw Mills,

Hayes' Improved Steam Pump, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

E. corner of Tehama and Fremont streets, above Howe street, San Francisco. 3-qy

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GEORGE T. PRACY,

MACHINE WORKS,

109 and 111 Mission Street,

SAN FRANCISCO.

These Works have lately been increased, by additional Tools, and we are now able to turn out any kind of work, equal to and cheaper than any establishment in the State; that is to say:—

STEAM ENGINES,

Flour and Saw Mills,

QUARTZ MACHINERY

Printing Presses,

AND MACHINERY MADE OF EVERY DESCRIPTION.

Improved Safety Store Hoists,

Fitted with Cutting's Patent Cams, unequaled for safety, convenience and cheapness. This Hoist can be built for about half the price of any other in use. To be seen at HAWLEY & CO.'S.

ALSO, MANUFACTURER AND SOLE AGENT FOR

Pracy's Celebrated Governor.

TURNING LATHES, Etc., constantly on hand.

4v23tf

UNION IRON WORKS,

Sacramento.

WILLIAMS, ROOT & NEILSON,

MANUFACTURERS OF

STEAM ENGINES, BOILERS,

OROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR

WILCOX'S PATENT WATER LIFTERS,

Dunbar's Patent Self-Adjusting Steam Piston

PACKING, for new and old Cylinders.

And all kinds of Mining Machinery.

Front Street, between N and O streets,

SACRAMENTO CITY

PACIFIC

Rolling Mill Company,

SAN FRANCISCO, CAL.

Established for the Manufacture of

RAILROAD AND OTHER IRON

—AND—

Every Variety of Shafting,

Embracing ALL SIZES of

Steamboat Shafts, Cranks, Piston and Connecting Rods, Car and Locomotive Axles and Frames

—ALSO—

HAMMERED IRON

Of every description and size.

☞ Orders addressed to PACIFIC ROLLING MILL COMPANY Post Office, San Francisco, Cal., will receive prompt attention

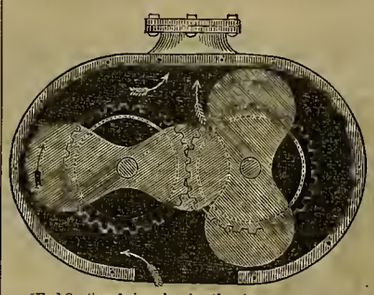
☞ The highest price paid for Scrap Iron 9v14m

ROOT'S PATENT FORCE BLAST ROTARY BLOWER,

MANUFACTURED AT THE

GLOBE IRON WORKS,

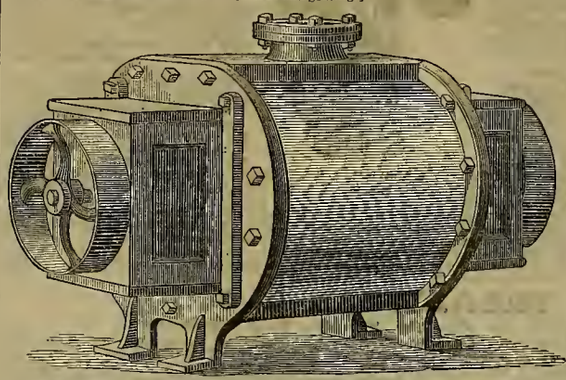
Stockton, Cal.



[End Sectional view showing the pistons and gearing.]

Awarded the First Premium at the Paris Exposition.—Patented November 1, 1864; July 24, 1866; and October 9, 1866.

Adapted for Smelting, Foundry, Mining and Steamships. Requires 50 Per Cent. less power than any Blower now in use.



One of these Blowers may be seen at W. T. Garratt & Co.'s Brass Foundry, San Francisco; Gould & Curry and Savage S. M. Co.'s, Nevada; and at C. P. R. R. Co.'s Works, Sacramento; and other places on this coast.

CAUTION.—Purchasers will find it to their advantage to apply direct to the Stockton Agency, as certain parties, not authorized to manufacture the Blower, have put in the market machines of inferior construction, which do not answer all the requirements of the genuine article. Quartz, Saw and Grist Mill, Iron, Stationary and Steamboat Engines, Horse-Power and Pumps, of all Sizes.

For Circulars and further information, Address

4v24tf GLOBE IRON WORKS, STOCKTON, CAL.

CAMERON'S

STEAM PUMPS.

PICKERING'S

Engine Regulators.

GIFFARD'S

INJECTORS.

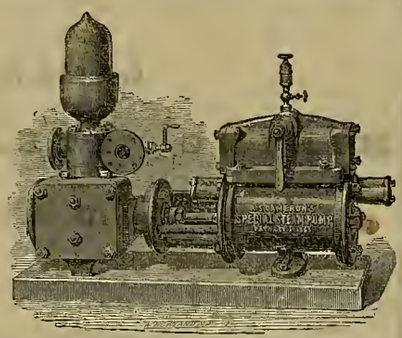
BARTOL'S

STEAM TRAP.

Surface Condensers.

DAVID STODDART,

114 BEALE STREET, S. F.



San Francisco Boiler Works, 123 and 125 Beale Street, San Francisco.

F. I. CURRY (late Foreman of the Vulcan Iron Works), Proprietor.

High and Low Pressure

BOILERS

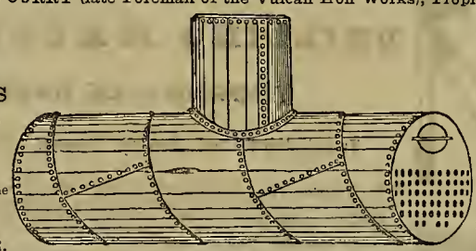
of all descriptions.

SOLE

Manufacturers of the

CELEBRATED

SPIRAL BOILER.



Sheet Iron Work of every DESCRIPTION done at the Shortest Notice.

All kinds of

JOBBING

and

Repairing

Promptly Attended to.

22v22-3m

THE RISDON Iron and Locomotive Works.

INCORPORATED.....APRIL 30, 1863.
CAPITAL.....$1,000,000.

LOCATION OF WORKS:
Corner of Beale and Howard Streets,
SAN FRANCISCO.

Manufacturers of Steam Engines, Quartz and Flour Mill Machinery, Steam Boilers (Marine, Locomotive and Stationary), Marine Engines (High and Low Pressure). All kinds of light and heavy Castings at lowest prices. Cams and Tappets, with chilled faces, guaranteed 40 per cent. more durable than ordinary iron.

Directors:

Wm. Alvord, C. J. Brenham, O. E. McLane,
Wm. Norris, Wm. H. Taylor, Lloyd Tevis,
James D. Walker.

WM. H. TAYLOR.....President.
C. E. McLANE.....Vice President.
JOSEPH MOORE.....Superintendent.
LEWIS R. MEAD.....Secretary.

24v17-qy

OCCIDENTAL FOUNDRY,

137 and 139 First st., near the Gas Works, San Francisco.

STEIGER & BOLAND,

IRON FOUNDERS.

IRON CASTINGS of all descriptions at short notice.

NOTICE.—Particular attention paid to the making of Superior Shoes and Dies. 8v24-3m

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Miners' Foundry and Machine Works,

CO-OPERATIVE,

First Street, bet. Howard and Folsom, SAN FRANCISCO.

Machinery and Castings of all kinds.

COPARTNERSHIP NOTICE.

We have this day admitted Mr. William R. Eckart as a member of our firm, the business of which will be hereafter conducted under the firm name of Prescott, Scheidel & Co. PRESCOTT & SCHEIDEL.

Marysville, Jan. 8, 1872.

MARYSVILLE FOUNDRY.

Referring to the above, we respectfully solicit the patronage which has for the past twenty years been enjoyed by our predecessors, pledging our best attention to the wants of all who may so favor us.

Quartz and Amalgamating Machinery,

SAW AND GRIST MILLS,

STEAM ENGINES,

HYDRAULIC MACHINES,

HOUSE FRONTS, ETC.

Repairs upon all kinds of machinery promptly made and at moderate charges. Having unrivalled facilities, we are prepared to make to order, at short notice, everything required in our line.

Specimens of our work may be seen in all the mining regions on this coast.

6v24-3m PRESCOTT, SCHEIDEL & CO.

CALIFORNIA BRASS FOUNDRY,

No. 125 First street, opposite Minna,

SAN FRANCISCO.

ALL KINDS of Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds; Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch

☞ PRICES MODERATE. ☜

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H. J. BOOTH & CO.,

UNION IRON WORKS,

(The Oldest and most Extensive Foundry on the Pacific Coast).

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Marine, Locomotive and Stationary Engines Quartz Crushing and Amalgamating Machines, Mill Irons and Brass and Iron Castings, of every description, made to order.

Steamboat Repairing, Boiler Making, Turning and Finishing,

EXECUTED WITH DISPATCH.

Beet Sugar Machinery complete in every part—made a specialty.

OIL MACHINERY.

A complete set of Machinery of our own design and patent for extracting oil from Castor Bean, dispensing with Hair Cloth. Also Machinery for Flax Seed Oil, Mustard Seed Oil, and Sun Flower Seed Oil.

MARBLE MACHINERY

For sawing Marble of any thickness or size.

Irrigating Pumps. Steam Pumps.

Plans, Estimates, and Advice promptly supplied.

H. J. BOOTH. GEO. W. PRESCOTT. IRVING M. SCOTT

4v24-1yslamr

OSCAR LEWIS. S. S. MORRILL.

CITY IRON WORKS,

28 Fremont street.....SAN FRANCISCO.

LEWIS & MORRILL,

Manufacturers of all kinds of Architectural and Ornamental Iron Work,

LAUNDRY MACHINERY, STEAM ENGINES, ETC.

Agricultural Work and all kinds of Blacksmithing and Jobbing done with promptness and at reasonable prices. Orders from the country promptly executed.

22v24-3m

SAN FRANCISCO

SCREW BOLT WORKS,

PHELPS BROTHERS, Proprietors,

MANUFACTURERS OF ALL KINDS OF

Machine Bolts, Bridge Bolts, and Ship or Band Bolts.

13 and 15 Drumm Street, San Francisco. 4v24ly

THOMPSON BROTHERS,

EUREKA FOUNDRY,

129 and 131 Beale street, between Mission and Howard, San Francisco.

LIGHT AND HEAVY CASTINGS,

of every description, manufactured 24v16qr

Machinery.

Varney's Patent Amalgamator.

These Machines Stand Unrivaled.

For rapidity pulverizing and amalgamating ores, they have no equal. No effort has been, or will be spared, to have them constructed in the most perfect manner and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the apperture and between the grinding surfaces.—Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Setlers made on the same principle excel all others They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill-men are invited to examine these pans and setlers for themselves, at the office, 229 Fremont Street, San Francisco.

A Blake's Crusher

FOR SALE CHEAP.

One of Blake's Patent Ore Crushers, size 8x10, second-hand and in perfect order, is offered for sale cheap. Also,

A STEAM ENGINE,

8x16, and another 6x12, second-hand and in good order. Also,

A New Mining Pump,

6-inch bore and 5-feet stroke, double acting.

All of the above will be sold at good bargains by

J. HENDY,

21v24tf No. 32 Fremont street, San Francisco.

The Hesse Grinder and Amalgamator.

BEST IN USE!

Especially well adapted for the Reduction of Sulphuret Ores.

LORD & PETERS, Agents,
304 Battery street, San Francisco, Cal.

☞ Send for Circular. 13v24-3m

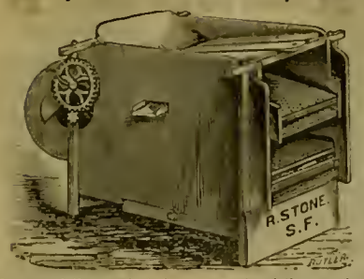
THEODORE KALLENBERG,

MACHINIST,

and Maker of Models for Inventors. All kinds of Dies, Stamps and Punches made. Also, all kinds of Small Gears Cut.

Repairing done on very Reasonable Terms and in the best manner. No. 32 Fremont street, S. F. 19v23-3m

THE PATENT
Novelty Mill and Grain Separator



Is one of the greatest improvements of the age for cleaning and separating Grain, while it combines all the essential qualities of a first-class Fanning Mill. It also far excels anything that has been invented for the separation of Grain. It has been thoroughly tested on all the different kinds of mixed Grain. It takes out Mustard, Grass Seeds, Barley and Oats, and makes two distinct qualities of wheat if desired.

For further information apply to

R. STONE,
422 Battery street, San Francisco.

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FOR SALE.
A 10-STAMP QUARTZ MILL,

Known as the Montezuma Mill, in Montezuma District, Nye County, Nevada.

All in running order, with Pans, Belting, Furnaces, etc. In a good locality for custom work. The mill can remain or be removed.

THIS PROPERTY CAN BE BOUGHT AT A LOW FIGURE.

Inquire of R. T. VAN NORDEN,
607 Montgomery street, San Francisco.
24v24-tf

WOOD WORKING MACHINERY

MOLDING, MORTISING, TENONING AND SHAPING MACHINES, BAND SAWS, SCROLL SAWS, **Planing & Matching** MACHINES, ETC.,

For RAILROAD, CAR, and AGRICULTURAL SHOPS, Etc., Etc.

☞ Superior to any in use

J. A. FAY & CO.,
CINCINNATI, OHIO.
14v24-6m

Notice is hereby given, that the copartnership heretofore existing between A. J. Severance, Charles W. Randall and J. Gus. Burt, under the firm name of "Severance, Holt & Co.," is this day dissolved by mutual consent. A. J. Severance, having purchased all the interest of his late partners, will continue the business of manufacturing and selling Diamond Drills, as before, under the style of A. J. Severance & Co.

Dated San Francisco, Nov. 24, 1871.

Office, 315 California street.

A. J. SEVERANCE,
CHAS. H. RANDALL,
J. GUS. BURT.

22-v23-tf

CALDWELL'S

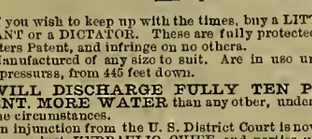
Improved Stop Governor,

Manufactured at the CYCLOPS MACHINE WORKS, 113 and 115 Beale street, San Francisco.

WM. CALDWELL.
3v24-3m

Hydraulic Miners, Attention!

LITTLE GIANT.



If you wish to keep up with the times, buy a LITTLE GIANT or a DICTATOR. These are fully protected by Letters Patent, and infringe on no others.

Manufactured of any size to suit. Are in use under all pressures, from 445 feet down.

WILL DISCHARGE FULLY TEN PER CENT. MORE WATER than any other, under the same circumstances.

An injunction from the U. S. District Court is now in force against HYDRAULIC CHIEF, and parties using the same will be duly prosecuted.

I fully guarantee my customers against all damages for alleged infringement.

Send for Partionlars and Testimonials

To WILLIAMSON & CORY, Marysville; J. H. NASH, Placerville; F. SMITH, at Locke & Montague's (San Francisco Agents); or to

R. HOSKIN, Dutch Flat, Cal.,

Sole Licensee and Manufacturer, under Allenwood's, Masey's, Rice's, Craig's, and Hoskin's Patents.
16v24tf

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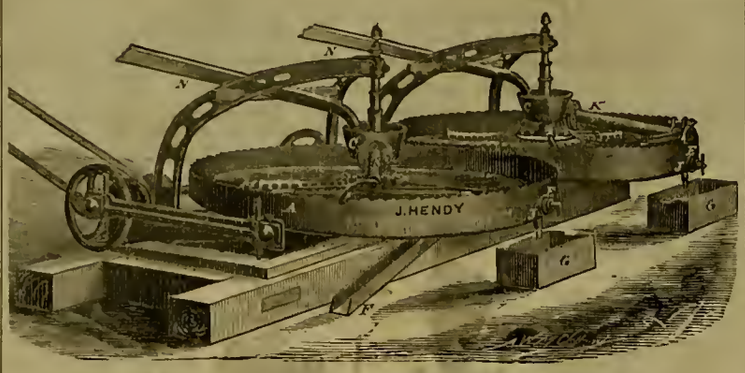

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The proprietor has still further improved the machine, making it stronger and still more durable. He flatters himself that the added advantages leave nothing further to be desired as the perfection of the machine.

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NOYE'S & CO'S MILL. (2 Concentrators)	Prescott, Arizona.
LUCY MINING CO. (3 Concentrators)	Owyhee District, Idaho.
EL TASTE CO. (3 Concentrators)	Sonora, Mexico.
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CAUTION—All of HENDY'S PATENT CONCENTRATORS are marked thus: "J. HENDY, Patented April 17th, 1866, and May 19th, 1868."

For full description send for Circular. Orders or letters of enquiry, address,

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18v24-1am-tf

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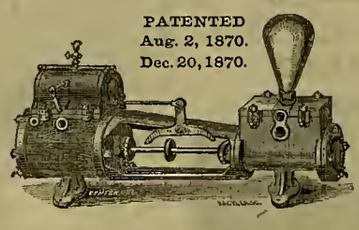
PATENTED
Aug. 2, 1870.
Dec. 20, 1870.



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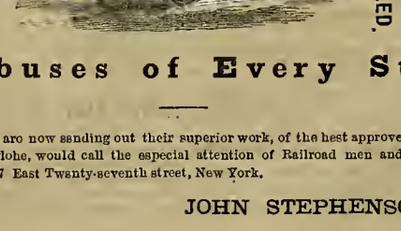

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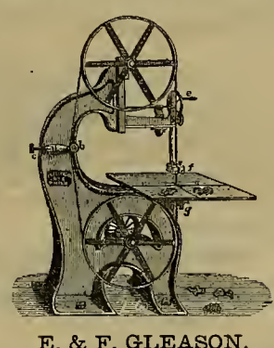

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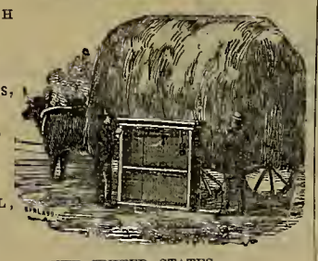

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3.00 P. M. San Jose Passenger Train, stopping at all way Stations.

4.00 P. M.* Passenger Train for Stockton, Merced and Sacramento.

6.30 P. M. Overland Emigrant Train, Through Freight and Accommodation.

7.30 A. M. Steamer New World (from Broadway Wharf) —Connecting at Vallejo with Trains of California Pacific Railroad.

4.00 P. M.* Sacramento Steamer (from Broadway Wharf). Connecting at Vallejo with trains of California Pacific Railroad.

2.00 P. M.* Steamer Antelope, from Broadway Wharf, connecting at Donahue with Trains of S. F. and North Pacific Railroad.

8.00 A. M. Excursion Boat (Sundays only) from Broadway Wharf, connecting with Special Train of S. F. & N. P. R. R. for Cloverdale and intermediate points, returning to San Francisco by 7 P. M.

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LEAVE OAKLAND, *5 40, 6 50, 8 00, 9 10, 10 00, and 11 10 a. m., 12 00, 1 40, 2 50, 3 50, 5 05, 6 20, 7.50 and 10 20 p. m.

ALAMEDA BRANCH.—LEAVE SAN FRANCISCO, 7 20, 9 00, and 11 15 a. m., 1 30, 4 00, 5 30, and 7 00 p. m. (7 20, 11 15, and 5 30 to Fruit Vale only).
LEAVE HAYWARDS, *4 30, 7 00 and 10 45 a. m., and 3 30 p. m.
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SAN FRANCISCO, SATURDAY, JULY 20, 1872.

VOLUME XXV. Number 3.

Sketch of the Geology of Upper Burmah—the Khan States to Western China.

[Written for the PRESS by W. Brodemeyer, D. M.]

Geology of the Coal Districts.

The region between the Irrawaddy and the Kjendnen (the latter a branch of the Irrawaddy, rising near Patkoidown and flowing in a southeasterly direction to Yandabo, eight geographical miles below Mandalay, the residence of the King of Burmah) is very productive. All the mountain chains are cut into by streams, forming valleys and basins which are crossed by smaller water courses. The mountain range of Mnngwije, forms a trianglo with corners at Mnngwije, Bhammo and Matsein. At Matsein there occnrs first in a small valley a bed of bituminons coal *(Lettenkohle)*. From this point coal beds extend past Kaboct, Tingedoe, Tamboo to Kotoun, eight geographical miles abovo Mandalay on the banks of the Irrawaddy. The formation here is primary, the rock belonging to the transition period. The exposed rocks are limestones, often with abrupt brakes, sandstones, clay slates and stone coals. At Kotonn the coal beds are covered to a depth of 29 to 30 feet by calcareons slate, swinestone (or stinkstone or bituminons lime), marl, loam and earth, and are enclosed between clay-slate and sandstone. The bed has a dip of 30 degrees, and is 5 to 6 feet thick, bnt often broken up by intercolated clays so that the coal itself is only 3 feet thick. The coal is anthracite and contains 94.5 per cent. carbon, 4.2 oxygen, 0.8 water and 0.5 ash.

From Kotoun to Mandalay, on the right bank of the Irrawaddy, the sandstone appears in gently nndulating mounds. The bed of a small brook between the Irrawaddy and the Kjnduen was filled with grains of calcite of the size of pess, these arising from weathered oolite. The rock declivities below Mandalay consist of mnssels and coralline conglomerate, cemented by calcareons marl, and are therefore a kind of Tertiary (Molasse). The rocks extend to the coast of Aracan. In various localities near the coast there are qualitative differences. In general the cementing material consists of lime, magnesia, clay with a mixture of iron oxid and a little manganese. In these rocks I found numerons examples of Tritonium, Hippopus, Turritella, Turbo, Arva Diluviana, Conus, and Fungia.

The conglomerate in the Nagay mountains, half way between the coast of Aracan and the Irrawaddy, reminds one of the sub-appenine formations. This rock is mixed with limestone in the neighborhood of the Irrawaddy and with chalk rocks near Amjen, which attain a hight of about 400 feet. The deposit is horizontal, covers the mountain sides and ravines and fills the crevices between the Jura limestones which break through it here and there.

The limestone is coarsely granular with many veins and geodes of calcite. Often streaks and fragments of alabaster are found. The limestone becomes more homogeneous with increasing depth, and contains much silica. In the siliceous limestone there occurs chalcedony of brownish and yellowish red color, with quartz geodes and red siliceous limestone. The quartz crystals occur in transparent twin forms. The limeetone ie rich in fossils, as *Madrepora*, *Meandrina*, *Cyathophyllum* and *Turbinolia*. Of muscels I found *Belemnites* and *Hippopus*, all changed into calcite, whereby the examples distinguished themeelves directly as petrifactione of the Tertiary (molasse) period. The thickness of this lime deposit was twenty-three feet. The formation here described hears a strong resemblance to the white Jura of Germany.

Going upwards from Mandaly ,twenty-eight geographical miles to Malun, and downwards about ten miles along the right bank of the Irrawaddy to Maley, one finds first in the plain of Malun the sandy ground covered with innnmerable lime rocks. (Here are *Belemnites*, and we therefore have the white Jura.) Here one comes to a mountain where occur oolitic rocks, consisting of white grains lying in a blue and grayish-black marl traversed by veins of calcite. Under this rock I found a grayish-black clay deposit. On the other side of the mountain under the oolitic rock occurs calcareous marl traversed by calcite veins. The rock contains silicate of iron. Under the marl occurs again the grayish-black clay shale.

Iron Deposils.

All aronnd in the mountains are rich mines of brown irou stone (limonite) worked by the Burmese in a most irregular manner. They used fires for disintegrating the rock, and the power of powder for this purpose created great astonishment among them. The rock contains lime, magnesia, silica, alumina, oxide of iron and manganese. In one of the mines the limouite ore traversed the oolite in a layer three feet thick. Under the oolito was a greenish-whito sandstone alternating with marl. Both rocks contained fossils. I found among the petrifactions *Terebratula*, *Cimbria lacunosa*, *Varians*, *Vulgaris*, *Nuoleata*, *Apiocrinus cochiniatus rotundus*. Next follows a bituminous marl shale—calcareous shale. In the river itself I found many *crustaceæ;* next came the yellow Lias sandstone with slaty structure, containing indistinct impressions.

The Burmese work only the best iron ores. Blast furnaces are unknown to them and I conld obtain no material or money for them. The Burmese give only what is absolutely required and demand immediate returns for their investments.

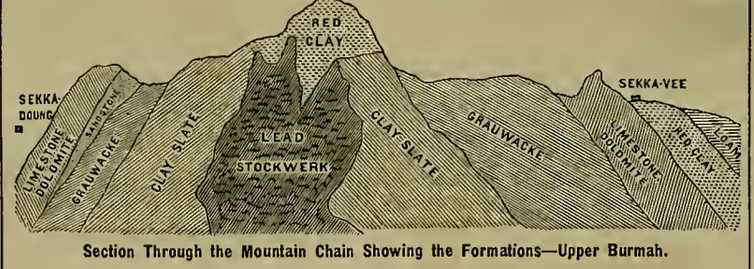
After this formation the Keuper appears. The rock consists of breccia-like siliceous sandstone and lies above a reddish clay slate. Opposite Mandalay the Keuper marl appears everywhere, alternating by green sandstone, lime and alabaster of a beautiful milk-white color; the last in the marl. The sandstone becomes argillaceous below, has a gray color and contains much mica. Tho same sandstone alternates, three miles below Kotoun, with thin beds of coal, which last, finally, ¼ mile from the Irrawaddy, occnr with a thickness of 5 feet.

Copper, Lead, Silver amd other Deposits.

The black clay contains considerable copper as a coating, and much of this metal occurs in the calcareous eandstone. Here in a region 15 geographical miles long and 7 miles wide, are many copper minee. In depth occur malachite and copper sulphurets. I worked among others, a mine which contained in a sandstone with red spots, large grains of azurite and malachite. The azurite occurred in crystals and the malachite in kidney-shaped masses. I found by analysis 73 per cent. copper. The veins dip to the southeast. The mineral-bearing rock has a width of 2½ feet, alternating with red clay. Several beds run parallel. In other mines, as Nama-dodjie (name of the Chief Queen) the malachite occurs with a reddish brown clayey rock.

In the Khan States, where I staid bnt a short time, the formation was in general about the same, but the mountain chains are high (2,000 to 7,000 feet,) the roads very poor and the land populated by elephants and tigers. Here are very rich copper mines. I found here native copper in a white clay; also diorite and copper, malachite and plate-like crystals of copper glance. Much richer were the lead and silver mines.

The whole mountain chain which extends form the left bank of the Irrawaddy, eight geographical miles above Mandalay, towards the Khan States in a northwesterly direction, and throngh these to western China, belongs to the primitive formation, and more particularly to the Ancient sedimentary group. It is composed of mica slate, and bluish gray clay slate, associated with talcose slate, to which are joined sandstone and grauwacke. The rock contains quartz, copper, lead, silver, quicksilver, platinum, gold and iron of almost every kind. The lead and silver mines of Sekka-doung and Sekka-vee are situated in a valley enclosed by mountains. The deposits are covered by a layer of red clay, 23 feet thick. Many minerals are associated with quartz. The bordering rock is bluish gray clay slate and grauwacke. The deposits appear to occur in stockwerks, and reach nearly to the surface; they have a strike from northeast to southwest at an angle of 75 degrees.



Section Through the Mountain Chain Showing the Formations—Upper Burmah.

The majority of the lead and silver mines are situated in the Khan States, viz.: Moung-la, Kijan-hnng, Mu ang-lee, Tjengkan. The lead ores contain 65 to 72 per cent. lead, the fahl ores 4 per cent. silver, and the silver ore 70 to 83 per cent. silver. The Burmese and Khans obtain, however, by smelting, only about 50 per cent. of the metal, for their furnaces are very incomplete. It was not possible for me to get better furnaces. In the attempt to do so I met with invincible obstinacy. I often proposed to the King to build better furnaces in order to re-work the slags; the invariahle reply was, "wait." The deepest Burmese mines were only 116–150 feet down, and the work was of the most irregular description. I wondered at the narrow, low galleries which were driven at an angle of 40 degrees. I never found any shafts, and had much trouble in accnetoming the Burmese to vertical einkings. The Khans are much better miners than the Burmese.

Precious Stones.

In Mogaun, on the Endon (a small branch of the Irrawaddy,) 12 geographical miles from Bhaumo, are the lsrgest ruby miues of upper Burmah, and, pcrhaps, of the world. They occur in a chain of 27 hills. The conntry rock is limestone, over 200 feet thick and covered with red clay. The limestone is everywhere fractured and the crevices filled with sands, clay, quartz fragments and weathered calcite. Out of these the rubies are obtained by washing, which is done by women. I used for the purpose round vessels of sheet iron, 18 inches in diameter, with edges 3 inches high, pierced with numberless holes like a sieve. I found principally rubies and sapphires; also emeralds, topsz, zicon, and spinelle. The dark clay holds more sapphires, the light, yellowish clay, more rubies. The amount of precious stones here is exceedingly large. Tho work is easy. The crevices are opened from the snrface and followed. The narrower ones, formerly neglected, I widened by blasting. At a depth of 150 feet, I was mnch troubled by the water. The King promised to order pumps and machinery, but took no further action, although the ruhies aud other gems increased in size and value with the depth.

Sixteen English miles from Mandalay and 2 miles from the left bank of the Irrawaddy, above Ava and Medea, are small ruby mines, situated in a chain of 16 hills. They comprise an area 6 English miles long and 1¼ wide. Formation, occurence and method of working are the same as at Mogaun. The Burmese told me that to the north the rubies were broken out of the granite and sandstone, bnt I did not visit the locality, it being too distant and I uot having the time.

Miners—Government Officers.

The Burmese miners are of two classes: soldiers and peasants (slaves). Properly speaking, every one ie a slave in Burmah; the King having power of life or death. Every family is responsible for the behavior of the members. But the soldiers have greater privileges. The priest constitute the highest caste.

The men in the mines receive $4.80, the women $2.88, and the children $1.92 (gold) per month. To each two men there is an underforeman who receives $7.20, and to each four under-foreman an overseer who receives $10.80 to $14.20; over these are officers and the district governors, of whom 24 are paid mostly by tithes. The King has four ministers;—Pakamendji, Minister of State; Lausi-mendji, of the interior, Yinanjong-mendi, of war; Kampamendji, of commerce. Under these are 12 Woon-dooks.

Precious Metals and Gems.

The sand of most of the streams, especially near Ava, carries much gold. One sees daily thousands of gold-washers. The view of the Bhuddist temples covered with gold attest the richness of the land in the precious metal.

Burmah is rich in minerals of every kind, particularly copper, iron, lead, silver, gold. amber, jasper, rubies, sapphires and platinum, Diamonds only have not yet been found. Most of the jasper comes from Mogaun and is a highly prized article among the Chinese who come in large caravans for the purpose of barter.

EMMA MINE DISPUTE.—A dispatch dated, Salt Lake, July 16th, says that "in Chambers on that day, Chief Justice McKean setting ae Chancellor, in an elaborate opinion, granted an injunction in favor of the Emma mine against the Illinois Tunnel Company." The decision is generally well received.

BRAZIL supplies two-thirds of all the coffee consumed throughout the world.

CORRESPONDENCE.

Notes of Travel in Lander and Elko Counties, Nevada.

[By our Traveling Correspondent.]

Palisade

Is on the line of the Central Pacific Railroad, in Lander county, Nevada, of which Austin is the the county seat. It is eitnated on the Humboldt River, at a point where Pine Creek empties into it. The place is 573 miles from Sau Francisco, and contains ebout 200 inhebitants, and one good hotel (the Palisade). The town derives its importance from being the point the traveler takes stege for neerly all the importent mines in the State (outside the Comstock lode). The first mining camp of importance attracting our attention, is Mineral Hill, 36 miles south of Palisade. To get there the traveler leaves San Francieco at 7 A. M., and arrives, *via.* the C. P. R. R., at Palisade the next day at 2.23 P. M.—fare $38. Here you lay over one hour and then take

Woodruff and Ennor's

Fine six-horse coaches—fare $8. We were honored by "California Sampeon" having charge of the reins on our paseage to Mineral Hill, and were whirled over the road—36 miles—in four hours and thirty minutes, including twenty minutes stoppage for changing our eix horses four times. Considering that we hed a full load of passengere and freight, the roads quite dusty, and an up grade, I do not believe the time has ever been beaten in your State, They certainly have the finest average lot of horsee on thie line I ever eaw. The line runs daily to Hamilton, a distence of 125 miles.

A Beautiful Valley.

Leaving Palisade by the above ronte, the traveler follows up "Pine Creek," a fine stream of water rnnning the year round, through a valley bearing the eame name. This valley is about 40 milee in length, and from 2 to 10 miles in width, and the finest grazing section on the Pacific Coast. Cattle live well here the year round. Where irrigation is brought into requisition, vegetables and grain yield abundantly.

Sights En-Route.

The atmosphere is quite light here, owing to the great altitude, and not eo clear as in California, except at early morning, or late in the afternoon. Our accomodating driver pointed out the principle houee in Mineral Hill, 21 miles—before we arrived there.

The crickets, a great plague in this section, are about three inches long, and eo thick on the ground at times, as to cover the stage wheele with their mangled bodies as we passed along. Four miles before reaching Mineral Hill, and a little to the westward of our road is three or four hot springs, known as the

White Sulphur Springs.

It is said that the waters of these springs are a certain cure for all rheumatic complaints, nervous debility and diseases contracted from the fumes of smelting furnaces, as well es diseasee of the lunge. I am told that the place is neatly furnished and that many permanent cures of lead poisoning and rheumatism have been effected. The springs are kept by John L. Davenport, and the cherges are $20 per week, iucluding baths, etc.

Mineral Hill.

This place, containing about 300 inbabitants, and situated 6,100 feet above the sea level, is Elko county, Nev. On the 17th of June last it was almostentirely consnmed by fire, the mills, however, and one store was saved. As little or no insurance was taken here, its inhabitants have been greatly impoverished, but undaunted by loeses they are again building, believing as they do, that their mines have a sufficient supply of silver to again make them whole. First among their mines are the

Mineral Hill Silver Mines Co., (Limited.)

The registered office of the company is in England; capital $1,500,000, in 30,000 shares of $50 each. Debenture mortgage 3,000; debentures of $500 each bearing fifteen per cent per annum. The company own 41 mines, claims, ledgee or sites, sitnated at Mineral Hill, in the State of Nevada. They incorporated in April, 1871, since which time they have extracted and ehipped upwards of $680,000 worth of silver bullion. The mines of this Co. are located at an elevation of 400 ft. above the town and are being worked, at present, with a force of 65 men. This company is running two tunnele, one 500 and the other 600 feet long, and working night and day shifts. One of theee tunnels rune across the hill and one parellel with the same. Three shafte are eunk on this company'e works; one on the Giant ie down 123 ft. perpendicnlar, with a one-horse-power hoisting works (called a whip). They have drifted 145 ft. from bottom of that shaft. On the "Troy" a shaft is down 100 ft., at an angle of 45°. On the Star a shaft is down 55 ft. on an angle of 40°.

The managers are Messrs. John Taylor Sons, No. 6 Queen street Place, London. Agents in Nevada: H. H. Oake, Superintendent; F. Haskins, Mining Agent; M. Eissler, Metallurgist. They own two mille, situated in close proximity to each other, half mile below the mine; one is oalled the "Taylor" (with twenty stamps) the and other the "Atwood," (with fifteen stamps,) both run by steam; they have a combined capacity of cruehing 31 tons per day—of 24 hours. Working 40 men regularly. The

"Spencer Silver Mine"

Ie on Mineral Hill, and a little to the eastward of the mine above mentioned. This mine consists of 800 feet, owned by 4 men, one of whom, Amos Plummer, is euperintendent. Their developments consist of a shaft 45 feet deep, from which they have extracted about 150 tons of milling ore; 100 tons of which worked at the Mineral Hill Co's. mines mill, peid $117 per ton. Better ore than any that hae been cruehed, is now being extracted. Working 7 men regnlarly.

The Austin Silver Mine

Consiste of an original location of 1,000 feet, sitnated on the snmmit of Mineral Hill next adjoining the above on the south. This location ie owned by 5 persons. J. C. Crombie ie Superintendent; their developements coneist of a shaft 45 feet deep from the croppinge. They have rnn eeveral drifts and cute, whioh have given them great confidence in their claim; 1,000 tons have been worked from this mine that averaged them $225 per ton, running from $78 to $1,565 per ton; 250 tons of choice ore ie now on hand.

They have 250 tone of cboice ore on hand bnt are not now working for want of a mill to crneh their ore. From Eureka in my next.

L. P. MO.

The "Alpine Miner" and "Metallurgist."

In its issue of Jnne 29th the Alpine *Miner* throws itself manfully into the breach in defense of the managers of the Terebish Mill, whom it aesnmes (probably correctly) were referred to in an article pnbliehed in the SCIENTIFIO PREES on the 22d nltimo, and signed "Metallurgist." The writer in the Alpine *Miner* is pleased to take exception to the compleints of inventore, that their inventions fail to fnlfill that which they claim for them, because of the ignorance of thoee who have the cherge of their working. Certainly these gentlemen have a right to insist upon the necessity of proper manipnlation in the testing of their epparatus.

"Metallnrgist" stated that when the inventor was present to enperintend its operation, the White Furnace chloridized 78¼ per cent. of the assay valne, and in every other respect fulfilled what was claimed for it.

The Alpine *Miner* denies this in toto, having seen "the papers" which make a very different exhibit of the results obtained under the inventor's supervision. It is thus redneed to a mere question of veracity between "Metallurgist" and the Alpine *Miner*, or the writer of "the papers" which settle the matter so satisfactorily to the author of the article in that jonrnal.

Not having eeen "tbe papere," which are so conclusive, I am willing to take the Alpine *Miner's* report of them.

They allege only 47½ per cent. of chloridizment instead of 78¼—a notable difference truly. The statement, however, of "Metallurgist," was made after an assay of the ore operated upon had been made in San Francisco by an established and thoroughly qualified assayer, and is therefore much more reliable than a haphazard result obtained by any of *soi-disant* assayers so frequently found fluctnating from point to point in mining dietricts, and continually misleading bard-working proepectors.

It would be a gratifying ae well as an amusing experiment to divide a sample of ore, between one of these itinerant metallurgical oracles and an estabiished assayer of known accuracy, and eubsequently compare their certificates.

It is very possible that the whole of the Alpine *Miner's* information is based on equally queetionable anthority, ae for instance the evidence of the mill officials who failed to obtain satiefactory results from the working of the furnace, and who naturally enough wonld throw the bleme on anything and everybody rather than on their own shoulders.

With regard to what tbe Alpine *Miner* says, as to a man's early occupation not incapacitating him for any other, that is about the only sensible thing contained in the article. But euch a change in a man's avocation must not be sudden, euch as "Metallnrgist" relates, when the bootmaker or grocer assumed the cbarge of a mill before he had ever seen one in operation.

Benjamin Franklin wae, as we all know, a printer, but by study he became a very great deal more. Mr. White may or may not have been a printer, or a shoemaker, thet matters not; but years of investigation and experiment must have preceded the invention of his furnace, otherwise he conld no more have designed and invented that which is based on scientific principles, a pre-knowledge of which was an absolute neceesity, than a tinemith could drop the tools of a trede be nnderstood, and at once assume eatisfectorily the role of surveyor, aesayer and mining expert. There have been a good many of these rapid transitions in this country, and they have been productive of the greatest injnry to onr mining intereets.

The Alpine *Miner* mistakes entirely wben he assumes that Mr. White and "Metallurgiet" are identical. Neither is the writer of this Mr. White, whom he has only occasionally met by chance, and that some time ago. He is eimply,

A FRIEND TO FAIR PLAY.

Mines in Amador County.

At no period in the history of quartz mining in thie county hae the prospect been more cheerful than at present, and if no serious drawbacks ehould happen to our developed minee to retard their daily operations, the gold yield for the preeent year will be far in advance of ite predeceesors. We have in Amador connty a nnmber of well developed paying mines furnishing employment to a large nnmber of men, in the variove indnetriee created by them, and theee rioh minee simply prove that there are numerone ledges unprospected in the county, that by well directed labor and ekill would eoon be made to yield equal to the best.

The mines at Sutter Creek are looking remerkably well, and new improvements and machinery are being added to nearly all of them in the vicinity. The deetrnction of the boieting worke of the Amador, was, and for sometime to come will continue to be a calamity to the connty, bnt should the nnderground works remain intact, work will eoon be commenced, and the varions industries created by the working of the mine will be resumed, and all tracee of the lete disaeter will disappear in the future returns from their rich deposits in the depths below, reqniring years to exhaust.

At Amador, the Keystone holde its own bravely, yielding its tribnte of $40,000 to $50,000 per month, affording employment to hundreds of persons, and adding largely to the businese and permanent wealth of the county. The original Amador, near the Keystone, will eoon set its 40 ponderous stamps in motion likewise affording employment to a large number of men and creating various indnetriee that will aid in the general thrift.

At Drytown, the main shaft on the Gover ie being rapidly eunk, and ae we learn, with flattering prospecte of a permanent paying ledge. Other ledges in the vicinity are being prospected which if pereevered in will result in snccee.

At the new town of Plymouth the Phœnix miue, nnder the snperintendence of Mr. W. H. Hooper, is being developed into the most valuable mine in the county, if not in the State. At the present depth of the main ehaft, 500 feet, the ledge has attained the width of twenty feet withont defining its fnll extent, and the whole of the ledge ranging from ten to one hnndrod dollars per ton. A 40-stamp mill in connection with the mine is now being erected with the most approved appliances for eaving gold and sulphurets. The rich developments of the Phœnix will canse other ledges in the vicinity to be vigoronsly prospected, and it is reasonable to expect other valnable discoveries will be made.

The Alpine, a continuation of the Phœnix on the north at a depth of 300 feet is turning out excellent rock, end givee every assurance that it ie a valuable mine. North of thePlymonth and within the eeme belt is the Condo, Enterprise, Richmond, and a nnmber of other partially prospected ledgee, whiob when properly developed, may, and some of them will, prove to be mines of great valne.

Near Jackson, the Kennedy is fast assuming ite position among the most valuable mines in the county, the average yield of the last crushing reached twenty-fonr dollars per ton, and the rock increases in value end quantity as greater depths are gained. This mine affords employment to a large number of hands in the various departments connected with it. The Oneida, north of the Kennedy, likewise employs a large force end is one of the permanent and valuable mines of the connty. East of Jackson near the foot of the Butte, is the State of Meine mine, and as far as the ledge has been snnk upon gives evidence of permanent valne. A fine water power mill connected with the mine is fast approaching completion, and eoon we hope to chronicle satisfactory returns from its batteries.

The Marklee mine, situeted north of Volcano, from what we can learn of its operations, ie doing better from the number of stamps employed than perhaps any mine in the county. The Marklee establishee the fact that rich gold-bearing ledges exist in the county outside of the Amador belt, and that capital may safely be invested in the nnmerous nndeveloped ledgee in the belt wherein the Marklee is situated. Work we understand is being prosecnted on a number of ledges east of Volcano, but with what enccess we have not been poeted.

We bave been informed that work has been resumed upon the Newton Copper mine eituated on the tnrnpike leading from Jackson to Ione City. The value of the ore from this mine hae been well eetabliehed, and if copper ehould ever reach former pricee, and Amador county blest with easy and cheap transportation, the Newton copper mine would be the most valneble property in the county, indeed it is only a question of time when it will be eo proven.

In addition to our quertz resources, we bave a large area of nnworked placer ground, which will afford profitable employment to hnndreds of men as soon ae water can be had. The great want of the connty is water; but this want will ere long be snpplied, for the Sutter Canal will be completed and whether by the present owners or other parties matters not, so that it be completed. And when that event ehall take place, a new impetus will be given to every industrial pnrsuit in the county besides opening np new branches of labor and bueiness adding largely to the population and weelth of the county.—*Amador Ledger.*

RIOH STRIKE.—A dispatch dated Salt Lake City, Jnly 11th, etetes that the greateet body of mineral ever diecovered has recently been located by two men from Illinois, named McHenry and Hughes, in the Wasatch Range, about seven milee south of Kimball'e Hotel, Parley'e Park, and twenty-five miles from Echo, on the Central Pecific Railroad. The ledge crops ont seventy feet, with an average width of thirty feet. Numerous aseays showa yield in silver of from $250 to $1,100 per ton, of perfectly free milling ore. Visitors to it estimate the rock in sight to be over 20,000 tons, valued at over $5,000,000. Old mining experts and prospectore are greatly excited.

BLATOHLEY'S DRILLS.—We are in daily expectation of information from Dr. Blatchley, the inventor of the new machine drill for mining, that his machines will be placed on sale here at an early day. It is probable that Prof. J. Alden Smith will be appointed the agent for thie section, and have the honor of introducing it here. It will be followed by a complete revolution in the present system of mining, which will be greatly to the advantage of all concerned.—*Colorado Register.*

ANOTHER DARIEN EXPEDITION.—The Navy Department will send out another Darien ship canal expedition next Novemher or December, nnder command of Commodore Selfridge, who expects to find a still shorter route than the one he discovered last year. The Department has $8,000 at its command for thie purpose.

SCIENTIFIC PROGRESS.

The Nature of Comets.

We condense the following from the review of Zöllner's work on the nature of comets in the June *Am. Jour. Science*. This volume contains some contributions to the theory of comets, which are so novel and remarkable as to merit more than a passing notice, and a brief abstract of the more prominent points of the discussion is given.

Starting from the well known fact that water, mercury and many other substances, even in the solid state, give off vapor of a certain amount, though of very low tension, and inferring from the characteristic odors of metals that they too, even at very low temperatures, are constantly giving off vapor, it follows that a mass of matter in space will ultimately surround itself with its own vapor, and the tension of the latter will depend upon the mass of the body, that is, upon its gravitative energy, and the temperature. If the mass of the body is so small that its attractive force is insufficient to give to the enveloping vapor its maximum tension for the existing temperature, the evolution of vapor will be continuous until the whole mass is converted into it.

The discussion leads to the result that, in empty and unlimited space, a finite mass of gas is in a condition of unstable equilibrium, and must become dissipated by continual expansion and consequent decrease of density. A necessary consequence of this result is that the celestial spaces, at least within the limits of the stellar universe, must be filled with matter in the form of gas, pre-eminently that of the terrestial atmosphere.

The author then proceeds to discuss the density of atmospheric air upon the surfaces of the celestial bodies and in space. Assuming for the purposes of calculation, and in accordance with the above mentioned considerations, that the space occupied by the stellar system is everywhere filled with atmospheric air, and taking the temperature as that of melting ice, he finds the lower limit of density so small that there could be no appreciable effect either upon the rays of light or upon the motion of bodies in space. The limit becomes still less in value if the temperature is taken at 60° C., with Fourier, or at 142° C. with Pouillet.

Any solid body in space must, by virtue of its gravitative energy, condense the gas to form an atmosphere upon its surface, and the density of this gaseous envelope can readily be calculated when the size and mass of the body are known. For the moon the value is found to be a vanishing quantity, and are completely in accord with the fact that no trace of a lunar atmosphere has ever been detected. For the larger plants, on the other hand, the value becomes very great, so great that the high density of their atmospheres must occasion perceptible effects, by absorption, upon the light reflected from them, and the result lends a new interest to the peculiar spectra of Uranus and Neptune, as well as of Jupiter, which appear to exhibit lines resulting from atmospheric influence.

If a fluid mass, a meteoroid for instance, should exist at a distance from the sun or any body capable of radiating heat to it, its temperature would be that of the surrounding space, and, if its mass were not too great, a slow evaporation would gradually convert it into a sphere of vapor. Should the fluid mass, however, approach the sun, the solar heat would cause it to evaporize much more rapidly, the smaller the mass, the more rapid the evaporation. The smaller comets, which have often the appearance of spherical masses of vapor, are examples of bodies of such a nature. Prof. Zöllner thinks there is no improbability of the existence of such fluid masses in space, consisting of water or of liquid hydro-carbons, and the spectra of some of the nebulae and smaller comets confirm the idea very strongly.

The peculiarities already mentioned are readily explained by reference to the general properties of fluid substances. The comets offer others which are the result of their causes, namely, their *Self-Luminosity* and the formation of a *train*, with a special relation of the latter, in its position and direction to the sun.

As to the former, only two causes are known through which a vaporous or gaseous mass can become self-luminous;—elevation of temperature, as by combustion; and electrical excitement. The first the author rejects as unsufficient and unsatisfactory, assuming the second. Granting that electricity may be developed by the action of solar heat, as it can be produced by similar processes within the limits of our experience, we have a cause sufficient to account for both the self-luminosity of comets and their train-formation. The spectrum of the vaporous envelope of a comet thus illuminated must necessarily be that produced by the passage of an electrical discharge through vapor identical in substance with a portion at least of the cometic nucleus, from which the envelope is derived; that is, water and liquid hydry-carbons. Thne the resemblance and partial coincidonce of the observed cometic spectra with those of gaseous hydro-carbone ia explained.

Tho form and direction of the train indicate the action of a repulsive force. After citing the confirmatory opinions of Olbers and Halley on this point, Prof. Zöllner asserte that the assumption of an electrical action of the sun upon the bodies of the solar system is necessary and sufficient to account for all the essential and characteristic phenomena of tho vaporous envelopo and ths train.

When a body is at the same time undor the influencs of both the gravitative and the electrical forces, with an incroase of mass there results a prepondcraunce of gravitation over electricity, with a sufficient decrease in the mass the contrary. Hence the nenclei of comets, as masses, are subject to gravitation, whilo the vapors developed from them yield to the action of the free electricity of the snn. Investigations and researches lead to the remarkable result that, supposing the free electricity of tho sun to be no greater than that repeatedly observed upon the earth's surface, and to he uniformly distributed, it would give a sphere, 11 millimeters in diameter and 1-100 milligram in weight, a velocity of 408.4 geographical miles per second, or 70,540,000 geographical miles in two days, in which time the comet of 1680, when ncar its perihelion, developed a traiu of 60,000,000 miles. Thess arc magnitudes of the same order and show that it is sufficient to attribnte to the sun electrical energy not greater than that observed on the earth's surface to account satisfactorily for the appearances presented hy cometic trains.

Furthermore, comets have appeared with trains directed towards the sun, and such a direction is easily explained by the supposition of opposite instead of like electrical characters, which accords perfectly with the phenomena observed in the development of electricity hy vapor-streams in the hydro-electric machine. The theory acquires an additional interest and strong confirmation from Schiaparelli's discovery of the identity of tho paths of certain comets with great meteor-streams.

Nature of the Action in Galvanic Batteries.

Prof. G. W. Hough, of the Dudley Observatory at Albany, N. Y., has, according to the *Journal of the Telegraph*, made a series of experiments on galvanic batteries, for the purposs of investigating the canse of the decline in the strength of the electric current after the battery has been in operation for a long period. Soms of the leading conclusions reached by Prof. Hough were as follows:—

1st. In the sulphate of copper battery (Daniells form) the principal cause of decline in the strength of the electric current is due to the formation of sulphate of zinc.

2d. The quantity of electricity flowing in the external circuit depends upon the specific gravity of the sulphate of zinc.

3d. When the sulphate of zinc approaches saturation, polarization takes place in the battery itself; and, although the electro-motive force remains the same, the internal resistance may be increased more than a hundred times.

4th. The sulphate of zinc (or any fluid abont the zinc) is only useful as a conductor of electricity.

5th. The copper, or negative metal, is useful only as a conductor, since it may be replaced by any other metal, even zinc itself.

6th. The internal resistance of the battery has been separated into two parts, viz., that dne to the porous cell and that due to the liquids employed. The specific resistance of the liquid was found to he 13; that for a small clay cell, 17; and for a leather cell, 7. Since the resistance of the leather cell is less than one-half that of a clay cell, it has been used in the construction of batteries at the observatory, as the quantity of electricity is nearly doubled without any increase of surface. For the negative metal, in place of the copper hitherto employed, we have used sheet-lead.

These investigations have rendered it possible to compute, with great precision, the length of time a battery will generate its normal quantity of electricity, provided the amount of electricity flowing in the external circuit is know, and the capacity of the vessel holding the sulphate of zino is determined. The specific gravity of the sulphate of zinc should not be less than 15 or more than 38 degrees Baumé.

A uew mechanism for the more thorough investigation of galvanic batteries has been devised by prof. Hough, but not yet constructed, by which the quantity of electricity flowing in the external circuit will be recorded in the form of a curve so long as the battery is in action.

NEW AND POWERFUL THERMO-BATTERY.—Noe, of Vienna, has invented a battery with the negative metal of an alloy, like German silver, in the form of a wire, and the positive, also a secret alloy, in cylinders cast round the wire. The wire is protected from the flame by a copper cylinder, insulated from the positive metal by a piece of mica. One of these elements equals in electro-motive power 1.24 to 1.36 Jacobi-Siemens' units; therefore niue to ten Noe's elements equal one Daniell cell, and 20, one of Bunsen's. A battery of 72 elements, when arranged for intensity, decomposes water rapidly; in two series of 36, puts in complete action a moderate sized Ruhmkorff coil; and in four series of 18, produces powerful elcctro-magnets.—*Pogg. Ann.*

MECHANICAL PROGRESS.

Economy in Blast Furnaces.

The *American Exchange and Review*, in speaking of the enormons waste attendiug the operatiou of furnaces of all descriptions, says: "Accurate experimente havo demoustrated that thore is as much heating power in ono pound of coal. This startling assertion was brought out at a recent meeting of the British Iron and Steel Institnte, iu the course of the reading of a paper ou mechanical puddling—a subject which is attracting much atteution among iron masters of both sides of the Atlantic.

As it is well known that puddling can not be carried on at a less heat than that usually obtained, and as the prodncts of combustiou which escapes into the chimney attaiu an average temperature of 2,033 deg. Fahrenheit, the qucstion has ariseu whether some of this waste heat can not bo utilized, and thus effect a saving of the fuel.

An inventiou intended to accomplish this purpose has beeu brought out at Middlesborough, England, whereby a furnace is used, which in appearance is not different from an ordinary furnace and which is thus described:—Above, the neck of the chimney is enlargened into a chamber, divided into two compartments by a vertical cross wall reaching nearly to the top. One compartment is fitted with a damper capable of barring the passage, and the other contains a cellular stovepipe. The dividing wall is perforated by two apertures, one on either side of the stovepipe, and close to the hase thereof. The chamber is surmounted by an iron cased chimney carried in snch a way as to hc independent of the brick work for support. Wheu the damper is open the products of comhustion pass hy it the nearest way to the chimney. When it is closed they are forced to pass through the tyvo apertures on either side of the stovepipe, which they heat, as well as the stove box in which it stands, and so to the chimney. Counected with one side of the stove box, which is divided in to two compartments, is a vertical funnel-pipe down which a steam jet constantly blows. Air is introduced with the steam, and the mixture is forced to pass up and down the heated stovepipe, and is then conducted through the back of the furnace to an ash pit closed by doors. A portion of the blast can he allowed, hy opening a valve, to enter the crown of the furnace just above the fire-bridge, in jets, through especially made tuyere bricks. The steam must be dry, and as high in pressure as possible. The jet is one-eighth of an inch in diameter at the orifice. Aboutsixty-five pounds of water must be evaporated per hour to maintain it. The pressure of the blast on leaving the stove chamber represented hy a column of water one quarter of an inch high, and the average heat is 550 degrees Fahrenheit. The products of combustion immediately above the stovspipe average 1,577 degrees Fahreuheit.

COUNTERPOISE.—Quite a discussion is now going on in some of the mechanical journals regarding the utility of counterpoise, on a crank, pulley, or other motion—some contending that it is not necessary, while others assert that no piece of machinery is correct without being counter, or equipoised perfectly. The latter party are nearest right. In short every other doctrine is wrong. There should he no question on this point, whether applied to cranks, pulleys, pitmans or anything else which is carried around a central hearing and is operated on by a force which contributes an initial velocity and is then broken up before the center is passed. Cranks particularly should be counterpoised, even though they are remote from the power by which they are driven and even though there should he a "fly" wheel attached to the machinery sufficiently large to overcome the weight of an hundred cranks. It is not so much the effect of the weight of the crank against the power, which should be guarded against in this case, as the effect of this weight upon the action of the machine to which it is directly applied. The least preponderation of motion will militate against smooth action, and eventually wear at certain points in such manner as to soon give space for lost motion. Machinery should in every case be perfectly balanced. Any other doctrine is wrong.—*Manufacturer and Builder.*

POWER OF A LOCOMOTIVE.—The driving wheels of a locomotive revolving with a velocity of twenty-eight hundred feet per minute at point of contact with the rail, aud the traction of all comhined being equal to six tons, the apparent effect will be this weight multiplied into the stated velocity, representing the power exerted by the locomotive. The number of foot pounds thus determined would be over thirty-three millions, or an equivalent for ahout one thousand horse-power—over five times the power a locomotive of such dimensions is capable of exerting.—*Leffel's News.*

To the above the *Manufacturer and Builder* adds: "We believe it has been thoroughly demonstrated that but little differeuce is made in the power of traction, either by speed or by increasing the surface of contact, results usually showing that the most that can be depended on is about one-fifth of the weight of the moving vehicle."

The Future of American Iron.

The opinion lately expressed in an article on the probable futnre of iron manufacture in thie and other countries, that the iron industries of Great Britain were rapidly and inevitably receding from the limit of their greatest possiblo expansion, finds ample confirmatiou in the present condition of tho British iron market, and fully agrees with the views of those best able to forecast the future of the trade. A comparisou of prices current in tho English market, with the quotations of eighteeu months ago, shows that, during this brief period, the value of iron in its various forms has increased from 50 to 80, and, in soms instances, 100 per cent., and there is every warrant for the belief that prices are not yet so high as to threaten a break in the market hy causing an apprcciable falling off in the consumptive demand. Even at the prcseut high prices, the demand is so active that the British iron masters could sell the products of their furnaces and mills for many months in advance if they were willing to do so, hut the neccssity of depending upon foreign sources of supply for ores to supplement the failing production of the British mines, renders the futnre of iron manufacture in that country so uncertain that contracts for future delivery are only accepted conditionally, and with extremo caution in some instances, and in others refused altogether.—*Age.*

STONE TURNING APPARATUS.—Mr. J. B. Drunion, says the *Iron Age*, has invented an apparatus for turning and polishing granite and other stone, which promises to become of much practical utility. It is described as follows:—"There ars two discs, one placed at the front and another at the back of the stone, inclined diagonaly toward it. Each cuts off from 3-8 to 5-8 of an nch at a time, and moves over about 2½ feet per hour. The two discs thns applied to the stoue—the one a little ahead of the other—reduce its size hy 1½ to 2 in. in an hour. It will do as much turning in a day as a mason can accomplish in a week, and, the mason's tool marks being avoided, the work comes out with a smoother surface—so much so that the first process of polishing is almost saved. The machine on which the patent tools are worked was made in Aberdeen, mostly from patterns designed in the establishment. The laths of the machne have heads similar to those already iu use. They have the peculiarity of possessing two beds. Each bed has saddles and slide rests, and on top of the latter the patentee's tools are borne. The machine is cspahle of working stoues of 16 iuches diameter and under, but arrangements are iu progress for extending its applicatious to work of larger dimensions. Balusters, vases, pedestals, and all sorts of circular molded work are dono very satisfactorily.

IMPROVED ECONOMY IN IRON MANUFACTURE.—The managers of the Cincinnati Railway Iron Works, in which nine of Dank's puddling machines have been put in operation, have effected an important economy in working iron by melting the pigs in a cupola, and running the metal direotly into the puddling machine. By this means, it is claimed a saving of one half is secured in the time which would he required were the iron melted in the furnace attached to the puddler, and it is possible to dispose of two heats per hour in each furnace, running 500 lb. blooms. A thorough acquaintance with the machine shows that light iron can thua he made ahout as readily as rails.

LIQUID FUEL.—A correspondent of the *Iron Age* has thoroughly investigated the manufacture of iron, by the use of Whipple and Dickinson's Patent Liquid Fuel machine, and promises an interesting account of his observations. He says: "Another letter must suffice for this report, which cannot fail to he of interest to those of your readers who have in Pennsylvania such au uulimited supply of liquid fuel, which really will not only save them fifty per cent. in cost of fuel expended, but will neutralize the worst red-short irou into a product rivaling the Low Moor of former days. Until another issue this must be postponed, when there is also to be noted a number of new wrinkles to the trade."

HOOP IRON.—The manufacture of hoop irou is fast getting to be a specialty, limited to those who make no other kind of iron, roll trains being adapted to speed and constructed with a view solely to this purpose. The rolls are turned so that the iron can be rapidly reduced and greater quantity produced with better finish, while very strict attention is given to the selectiou of metals for mixture.

IRON MOUNTAIN ORE.—Mr. Z. S. Durfee, agent for the Bessemer process, has examined the Iron Mountain ore, as produced at Carondolet by the stone coal heat, and pronounces it the hest iron in the world for the purpose of Bessemer steel. Large quantities of the iron are being shipped to Chicago and Clevelaud for the purpose of this manufacture.

INDUSTRIAL schools are now in successful operation in Europe, and especially in Germany, where children aud youth, for five hours a day, attend educational institutions similar to our public schools, and in addition are required to spend two or three hours in practical schools, where a thorough knowledge is imparted of drawing, designiug, modeling, spinning, weaving, dyeing, mixing of colors, and the use of tools and machinery.

MINING SUMMARY.

THE following is mostly condensed from journals published in the interior, in proximity to the mines mentioned

ALPINE COUNTY.

Alpine *Miner*, July 6: Drift No. 6 of M. & N. W. No. 3 lower worke is loooking fine in its raise and improving in the face. The N. W. drift indicates the approach of the great body of ore of the mine.

TWO SHIFTS of miners are pushing the main tunnel of M. & N. W. as fast as the somewhat refractory nature of the rock will allow.

GETTING READY.—Alpine *Chronicle*, July 6: The sawmill of the Exchequer M. Co. is heing put in order for the cutting of 500,000 ft. of lumher for the Excheqner, I X L, and Accacia mines.

ACCACIA.—Work on this tunnel was resumed this week.

I X L.—In about two 2 weeks hoisting works will arrive, when work will be resumed. As soon ae they are in position sinking will commence to prove the mine.

AMADOR COUNTY.

NEARLY COMPLETED.—Jackson *Ledger*, July 13: The hoisting works and buildings at the Amador, recently destroyed by fire, are nearly completed, the engine and hoilers heing repaired and in position. It is expected that the mill will start up in a few days.

AMADOR.—The Bunker Hill has strnck very rich rock on the 170-ft. level. The Original Amador will he ready to start up in a few days, with new machinery, when we expect to record its regular $35,000 to $40,000 per month. The Keystone remits its regular $40,000 per month. Prospecting is going on in the El Dorado.

CALAVERAS COUNTY.

GWIN MINE.—San Andreas *Citizen*, July 13: Everything is progressing finely. The 16 stamps now running are giving large returns and the pay rock is coming in handsomely in the lower levels; a large body of good ore is being developed in the south end of the south shaft.

ANGEL'S Co.—They are working on the 500-ft. level, having strnck the vein 20 ft. wide, and the rock many times richer than ever hefore.

STRUCK IT.—Calaveras *Chronicle*, July 15: The Hughes Bros., on the blue lead in Chili Gnlch, just helow the What Cheer, have struck pay gravel. They have run an incline to the bottom of the channel, 425 ft., and a straight tunnel from the hottom of the incline, 50 ft. They have commenced putting up water-power hoisting works.

EL DORADO COUNTY.

MOVED.—Placerville *Democrot*, July 3: The Green Mt. Tunnel Co., Cedar Hill, have purchased the old Taft mill, at Smith's Flat, and are pntting it up at the mouth of their tunnel in Chili ravine.

IMPROVING.—The quartz ledge recently discovered a little to the north of the city, improves as opened. At 35 ft. they have a ledge 22 inches wide.

POCAHONTAS. — Placerville *Republican*, July 11: The mill of the Pocahontas M. Co., is undergoing a thorough overhauling, and a new and immense hoiler is being pnt in place of the old one. In the mean time work in the mine is being vigorously prosocuted, and an immense quantity of good paying rock is rapidly accumulating.

FRESNO COUNTY.

BALTIMORE.—Millerton *Enterprise*, July 10: The appearance of the Baltimore Copper mine, at Buchanan, is improved.

FROM the mountain gulches, we learn that the miners are meeting with success and taking out considerable gold.

KERN COUNTY.

CASTRO.—Havilah *Miner*, July 6: Mr. Wattiez hrought down $800 worth of gold last Tuesday from the Castro, the result of a few day's rnn.

LASSEN COUNTY.

SUSANVILLE. — Virvinia (Nev.) *Enterprise*, July 9: Those at work in the new placer diggings, 5 miles south of Snsanville, are making from $5 to $15 per day, and on some occasions as high as $50 has heen taken ont in one day by one man.

NEVADA COUNTY.

COARSE GOLD.—Grass Valley *Union*, July 11: On Monday last H. L. Roherts and J. McCauley picked up on Randolph Hill, near rough and Ready, a piece of gold worth $12, and on Tuesday they found a chunk weighing 13¾ozs., worth in the neighborhood of $250.

TRINITY COUNTY

STUART FOLK DITCH.—Weaverville *Journel*, July 6th: O. M. Loveridge will commence the survey of the hig ditch on Monday next.

BROKE DOWN.—Same paper Jnly 13th: About 90 ft. of the flume across Trinity River at Evans' Bar, helonging to McGovern and McGrath, fell on Sunday. This was the highest flume in the country, heing ahout 125 ft. high.

TUOLUMNE COUNTY.

EXCELSIOR.—Sonora *Independent*, Jnly 13th: The Co. are down 139 ft. on the vein, which shows from 15 inches to 4 ft. in width. J. K. Owens has contracted to put np a 10 stamp mill, which is calcnlated to he in running order within 60 days.

CITY MINNING.—G. S. Reuter is mining the lot under his house. Several pieces of quartz, ehowing ahundance of gold have been fonnd, aud the prospect is that he will have a good thing of it.

Nevada.

EUREKA DISTRICT.

RICH ORE.—Eureka *Sentinel*, July 10: Some of the mines on Coy Hill are yielding ore which assays from $300 to $1,000 per ton.

HOISTING WORKS.—The Eureka Con. people are putting matters in shape for their new hoisting works.

IN OPERATION.—The Phenix smelting works are in successful operation, with an ahundance of coal and ore on hand to make a successful and remunerative run.

RUBY HILL TUNNEL.—The tnnnel has a length of 140 ft. in shale limestone, that can be worked at a small expense, and from appearances they will soon strike ore.

HUMBOLDT.

BUTTE M. & M. Co.—Hnmboldt *Register*, July 6: The Co. at Rye Patch, are erecting a Stedefeldt fnrnace, which will he in operation hy the 20th of Jnly.

THE Winnemucca Reduction Works are nearly completed, and will he ready for operation hy the 15th of the month.

RYE PATCH. — Unionville *Silver State*, July 13: The new Stedefeldt fnrnace, bnilt for the Butte M. Co., Rye Patch, is completed. The new mill which has heen running on tailings since its completion, will commence crushing next week, at which time the furnace will also he fired up. The Butte mine is yielding rich ore.

ELY DIST.

BULLION.—Ely *Record*, July 7: During the past week W., F. & Co. have shipped hullion valued at $95,133.81.

For Juue, W., F. & Co. shipped hnllion valued at $467,431.52, exclusive of hetween $40,000 and $50,000 shipped on the last day of June and included in the July shipment.

INGOMAR.—On Friday night a ledge was strnck in the Ingomar, Panaca Flat, which, up to present writing, has heen gone in on 6 ft., with no sign of a foot wall.

SUNBEAM.—Drifting on the 200-ft. level continnes on the ore hody mentioned as having been struck, with the ore showing from 18 inches to 2 ft. in width. A purchase of the old Barton mine was made by the owners of the Sunheam on the 26th. To-morrow a force will be placed at work sinking the Barton shaft to a level with the drift being run west from the Sunheam.

EXCELSIOR.—Drift on the upper level in 120 ft., on ore the entire distance. On the lower level the chimney of ore in the ledge has heen cut 50 ft. from the shaft. Sinking of winze from the 150-ft. level to open a new station at 100 ft. continues with good progress. Have 1,000 tons of fine milling ore in sight.

AMERICAN FLAG.—East stope and east raise continne looking exceedingly well. Expect to cut the ledge in the west drift in 4 or 5 ft. more. Timhering of shaft is almost completed. Part of machinery for the new hoisting works arrived on Friday, and is being placed in position. The mill is not running at present and no ore will be shipped until the hoisting works are completed.

STIRLING.—Men employed in timhering the shaft, which is 150 ft. deep, and shows the ledge the entire distance. A great improvement in the character of the ore is noticeahle in the last 10 ft. sunk. Some little water is at present coming in at the hottom.

MOCKING BIRD.—The ehaft is down 40 ft., and still sinking, with the ledge showing hetween 4 and 5 ft. in width on the hottom. Assays taken during the past week show an average of over $120 per ton. They have a quantity of good ore on the dump.

HARPER.—Drift south from hottom for ledge in 17 ft., and as yet have not cut into it.

LOUISE.—Work on Anna Dickinson continues as usual, with the ore hody coming in stronger and richer as opened np on. The contract on the Goodspeed will be commenced in a few days. Work on the Grattan contract is going steadily ahead, and ore improving.

PAGE & PANACA.—All the machinery of the hoisting works is on the gronnd. The gallows' frame is in position over the shaft, and the timhering of the mine throughout has heen completed.

CONDOR.—Main shaft down 150 ft., and shows good ledge in the hottom, assays from which have averaged $123 per ton during the past week. A large amount of ore is on the dumps.

CHIEF OF THE HILL.—Siuking the main winze to make connection with the lower level. Stopes looking well and ledge shows at that point about 2 ft. of solid ore. The east drift on the lower level is looking extremely well, and ehows 2½ ft. of solid ore in the face.

NEWTON BOOTH.—Getting the hoisting machinery into position rapidly and will start up again soon.

NEWARK.—Cribhing of shaft continnes. The engine is expected to arrive about the 20th instant.

MEADOW VALLEY.—Stopes and drifts continue to look well and yield ahundantly. The lower levels of No. 3 show a great improvement since our last, and the ore extracted is of much better quality. The Summit hoisting works are nearly ready to start up.

BOWERY.—Prospecting continues. Mill is running steadily and works finely throughout.

TOWNSEND.—Indications are favorable for ore.

CHAPMAN.—Stoping on ore continues; also raising of ore to the surface. Shaft 300 ft. deep.

REESE RIVER.

BULLION.—Reese River *Reveille*, Jnly 6: There were shipped through the office of W., F. & Co., in this city during Jnne, 57 hars of silver hullion, weighing 5,929 lbs., of the value of $73,740.56.

BELMONT.—In the El Dorado South the pump has heen lowered 48 ft. since the 8th inst.; the drifts are heing pushed with equal vigor. The Monitor Co. are taking out very rich ore.

SOME prospectors have heen for a few weeks engaged in prospecting in the old Manhattan Dist., ahout 15 miles from Belmont on the Silver Creek trail. Some of the old shafts which had heen filled up have heen cleared and assays of $300 rock ohtained. The ledges are reported large, hut the rock is generally of a grade of ore that will not pay much more than day's wages, until lahor and redncion is cheaper.

IONE AND ELLSWORTH — INDIANAPOLIS MINE—(IONE.)—The ore from the 270-ft. level, now heing milled, assayed $349 per ton. The Co. is extracting and sending to mill ahout 2½ tons per day. Beatty, Sargent & Co., owners of the North Star, Crown and other mines are doing considerahle work.

AMERIOAN FLAG—(ELLSWORTH.) — The incline has reached 218 ft., and some very fine sulphuret ore is being raised.

ESTA BUENA.—This mine has just heen sold to a S. F. incorporation. The new Co. propose to largely increase the working force at once.

WASHOE.

LOOAL SUMMARY—IMPERIAL EMPIRE.—Gold Hill *News*, July 13: The drift east at the 1,500-ft. level shows only clay and quartz at present, with no sigu of the east wall. Last Tuesday afternoon the 1,650-ft. or lowest level unexpectedly run into ore which snbsequently opened ont into a very good hody, assays from which run from $100 to $400 to the ton, gold predominating at the rate of 65 per cent. It was struck by the southeast drift, rnnning across it somewhat diagonally. The streak or hody shows ahout 9 ft. in width, and the drift has not passed through it, therefore its actual width is not known. Assays taken from the face of the drift thie morning averaged $111.26 to the ton. It dips east with the ledge. About 50 tons of ore has heen taken out, which will he raised and pnt into the dump for milling next Monday.

OVERMAN.—The main drift west on the 1,000-ft. level is in 405 ft. in ledge matter, showing excellent indications. The shaft is down 90 ft. below the 1,000-ft. level and progressing well, although there is a steady increase of water from the bottom.

OPHIR.—Just finished putting in two more fine 52-inch boilers. The shaft is down 110 ft. below the 1,300-ft. level, with the sinking good, though somewhat harder than at onr last report. Sinking the winze in the south drift of the 1,100-ft. level has been discontinued for the present. The north drift of this level is still pushed ahead with energy. The work of opening the 700-ft. level to the point at which they expect to drift will be completed in two or three days.

BELCHER.—Daily yield, 275 tons, from the 1,100 and 1,000-ft. levels. The 1,000-ft. level is showing finely, and the drift sonth is in 160 ft. from the Crown Point line, the face heing in the finest kind of ore. The total yield for June was 6,797 tons of ore, averaging $58.43 per ton, and amounting to $407,772.37.

YELLOW JACKET.—Daily yield 25 tons, from the old workings. The hoisting engines are heing fitted with new 16-inch cylinders, therefore nothing is heing done on the main incline at present. The main drift at the 1,300-ft. level is heing continued north in order to connect with the long winze from the 1,100-ft. level for ventilation and prospecting purposes.

CHOLLAR POTOSI.—Daily yield 185 tons, worth $11 per ton. The work of retimbering the shaft is progressing finely, aud the Co.'s mills are kept steadily running. The total shipment of bnllion for Juue amounted to $78,230.

SAVAGE.—Daily yield 160 tons, worth $28 per ton. The incline is down 90 ft., and making good headway. All work on the 1,500-ft. level is suspended for the present.

KNICKERBOCKER.—Shaft down 385 ft. and passing through occasional feeders or stringers of very fine looking quartz from the main ledge. But little water is encountered, and next week the shaft will he down far enough to [allow of the 400-ft. station heing put in.

SUTRO TUNNEL.—Total length 2,957 ft. The rock is hard, yet works well, allowing of fair progress heing made.

GOULD & CURRY.—The incline is down 90 ft. helow the 1,500 ft. level in good sinking ground.

BUCKEYE.—Sinking the main incline is progressing. It is in the west wall of the vein, and will open out a good body of ore judging from indications above.

CROWN POINT.—Daily yield about 500 tons, from the 1,100-ft. level and the floors above it. The ore breasts all show splendidly.

KENTUCK.—Daily yield about 60 tons, from the old workings, which hold out well. Total receipts for June, $8,871.14.

WHITE PINE.

TREASURE HILL MINES.—EAST SHEBOYGAN.—White Pine *News*, July 6th: hreasting out from the north works continues, and the ore is of the same satisfactory character. Working ore at Swansea mill.

COPPER GLANCE.—The northwest drift and north shaft rnnning on contract. A body of good ore is in sight in the north drift, 27 ft. from the surface, with every indication of holding out.

O. H. TREASURE.—There is quite an improvement in the ore hody in the lower tunnel. Some of the finest chloride ore we have ever seen in the Dist. is heing shipped to mill. The Wheeler tunnel is progressing rapidly. The new contract to he let is for 50 ft., or to ore. Mill steadily going.

PENNSYLVANIA.—Sinking 2 shafts with the nsual force, in vein matter. It is expected the ore channel will he reached at a depth of 50 ft.

SAN JUAN DEL RIO.—Work is progressing finely, the ore body increasing as depth is attained, and the grade of ore improving.

HAMILTON M. & M. Co.—The millright, has put the mill in fine condition, and will be ready in one week to commence crushing ore. It is the intention to put up a White furnace to operate on our most refractory ores The Pogonip & Othello mine show good hodies of ore.

CHARTER OAK.—Connection is made hetween the north tnnnel and south shaft. Good mining ore is found in the tunnel.

THE MINES.—Schell Creek *Prospect*, July 6th: Work is progressing on McMahon, Jnpiter and other mines. The McMahon is improving in appearance every day, aud large qnantities of rich ore are heing extracted. The owners of the Schell Creek are running a tuunel in ahout 150 ft. to cut the ledge. The snpt. informs ns that he expects to strike the ledge inside of 30 ft. In Queen Springs the miners are looking hetter than ever. Work is progressing on the Great Western War Horse La-Bross Tunnel and eeveral other prominent mines. In Ruhy Hill everything looks promising. The Silver Wreath is turning out to be the richest mine in Nevada. There is a hreast of ore 15 ft. wide and 20 ft. high of great richness. Several tons of this ore will work over $2,000 per ton and the bulk of it will average from $300 to $500. The Cow and Calf will donhtless prove equal to the Silver Wreath. The Birch, Wide West, Look Out, Snnburst and others are improving in quantity of ore.

Arizona.

MINES AND MINING.—MOHAVE Co.—Prescott *Miner*, June 29th: Hardy's little mill is rnnning and paying, and Mr. H. has procured a larger and hetter mill. E. M. Smith, Mr. Wheeler and others, are

opening mines in the Cerbat and Wallapai ranges.

YAVAPAI CO.—Our miners keep at work, taking out a little gold dust.

T. W. Brooks, Sup. of the Del Pasoo, brought considerable dust to town a few days ago.

HUALAPAIA.—The Elder furnace is not doing very well, the ore being better adapted for milling. The great drawback is a scarcity of water for milling purposes. The developments made in the sinkings in the mines are favorable. The mill at Mineral Park has lately worked up 5 tons of ore from the Donahue, which yielded $1,680 per ton. Mr. Parsons reports that out of 180 assays made by C. Pletz at Cerbat, the average assay yield obtained was a trifle over $240 per ton.

THE MINES.—San Bernardino *Guardian*, June 29: We learn from Mr. Brazelton that matters out at Wallapai, and vicinity are pretty dull.

On his way in he was informed by responsible parties that very rich lodes had been struck in the McKenzie Dist.

Colorado.

CARIBOU.—Central *Register*, July 3: Congar and J. Hill have a number of men mining ore from the Boulder Co. lode, which runs from 4½ oz. to 15 oz. in gold per cord.

Sears, Burd, Herzinger & Co., have recently purchased the Orlington lode. The second-class ore runs 6 oz. per cord in gold.

The Gentryville lode on the northern slope of Caribou Hill, is looking finely.

SUMMIT CO.—Col. Fuller and Greenleaf are tearing up the ground one half mile below Breckenridge at their two big flumes, at a fearful rate, besides working some 40 men at the head of Negro Gulch and other places.

Ezebett, Pollock & Co., have leased their flume at the mouth of French Gulch.

Next above, the property known as the McFadden, lately sold to Price & Parker for about $80,000, is being overhauled and a new flume put down.

THE Glasgow lode is being worked, and gives promise of a fair yield.

RICH silver lodes are being discovered nearly every day on Brown Mt., Georgetown.

THE Fourth of July lode is again producing ore, which yields 10 ozs. per cord.

THE ore in D. D. and Andy Johnson lodes, Cascade Dist., is improving in quality, and the crevices are growing wider.

PARTIES in Ellsworth Gulch, are making fair wages, with good prospects ahead.

COAL.—Colorado *Miner*, July 4: A massive vein of valuable coal has been discovered near Hamilton, Park county.

CLEAR CREEK county, in 1872, will ship silver, in bullion and ore, to the amount of $4,500,000.

WARD DIST.—Longmont *Press*, July 3: Mr. Davidson has started the Niwot engine to pumping, preparatory to going to work.

Chris. Hulverson has run 4 cords of ore through his mill, and cleaned up $1,200.

Joss Hartley and Henry Wells einking on the Moscow. They have a 3 ft. crevice, the ore from which assays $125.77 gold per ton.

Hulverson's mill is running night and day on ore from the Columbia, Slater, and Nelson lodes.

MTS. LINCOLN AND BROSS.—Denver *Tribune*, July 10. The Wilson lode is looking very fine. The crevice is from 2 to 3 ft. wide, and the ore assays from $300 to $600 per ton. Near hy, is the "Red Bird." It has 4 ft. of ore that assays about the same as the Wilson. Then comes the "Lincoln." It has a good crevice of ore that assaye from $200 to $400 per ton. Next is the "Musk Ox," tho ore assaying from $1,000 to $1,400 per ton. Further up is the "Gem," "Astic," and "Present Help," all good sized veins, the value of ore ranging from $400 to $1,000 per ton.

On the Divide, between Lincoln and Bross, Mr. Beckwith has 3 lodes that look very promising, the ore assaying as high as $1,100 a ton.

Sykes, McLaughlin, and a host of others, have some very rich discoveries on the north spur of Mt. Lincoln as yet undeveloped.

Prof. Peters will erect reduction works at Alma soon.

Idaho.

LOCAL RECORN.—Owyhee *Avalanche*, July 6: The Ellmoro and Mahogany are looking splendidly. The Ellmore shaft is down 86 ft. below the 7th level, leaving about 25 ft. to sink for the 8th, which will give 100 ft. of backs and a 10-ft. sump.

The Sup. of the Golden Chariot, hopes to have the shaft completed this month.

The Mahogany 5th level drift is in on the vein about 290 ft., and the first stope above the 5th level is a little over 200 ft. long—the only stope yet run to the end of the shute of ore. The shaft is down 30 ft. on the ledge, which shows A No. 1.

The South Chariot is being opened in good style. The shaft is down 75 ft. for the 4th level, carrying a good vein of ore all the way.

The Minnesota has struck splendid ore in the 3d level south, and connected that drift with the winze from the 2d level. The South Chariot mill is running on Minnesota ore.

The erection of the Empire hoisting works is delayed, on account of some portion of the machinery not being shipped from Winnemucca.

In the North Oro Fino the 3d level drift has about 50 ft. yet to run to connect with the old engine or Surplus shaft.

The pauper shaft is down 48 ft. on the new contract. The vein is 20 inches wide, splendid ore. The water has increased in the shaft from 5 bucketsful in 24 hours to 5 buckets in one hour, which is regarded as an almost infallible sign of being close upon a large ledge.

The repairing of the War Eagle shaft is about completed, and the mine is looking better than ever.

The Revenue is yielding fine looking ore, in much of which can be seen free gold.

Water is falling in the placer diggings, and preparations are being made for cleaning up the season's run, which will pan out better than for years.

Montana.

PHILIPSBURG.—Helena *Herald*, July, 4th: The St. Louis mill has been changed to dry crushing, (with roasting furnaces attached). It is running on speckled trout ore. The yield per ton of ore is nearly $140, and the mine, at a depth of 127 ft. is 11 ft. in width, showing clear across it ore yielding on an average $160 per ton.

MADISON CO.—Cor. same: Stites, Brigham & Co. are running 2 hydraulics, averaging about $10 per day to the hand. Parkman and James are running 2 hydraulics, and making good wages. In Clark's gulch 2 pipes are running with good pay. These is considerable excitement about the Cherry Creek silver mines, and many in this direction have "solid silver" diggings.

BANNACK.—Cor. same: Waddams & Shenon cleaned up 48¼ ozs. of gold, the result of 10 days run with an arastrs, on quartz out of the Waddams lode.

The "Butterfield" mill has run through a few tons of silver ore from the "Huron" lode, with very favorable results.

The placer mines are being worked and are paying as well as could be expected.

BULLION.—Deer Lodge *Independent*, July 6th: 807 lbs. of silver bullion was brought from Philipsburg this week, the proceeds of ons clean up.

Ophir,—Cor. Deer Lodge *New Northwest*, July 6th: Ophir Gulch is occupied by Chinese miners who realize as high as $12 per day to the man.

Utah.

MORE.—S. L. *Tribune*, July 9: Walker Bros. are in receipt of 5 bars of bullion from their Pioneer Mill, East cañon, worth $7,121.72 coin.

HOWLAND DIST.—Some fine prospects have been struck in White Pine Cañon, about 2 miles west of the Howland mine. Assays from the Lawrence show about $100 to the ton with a fair prospect for plenty of ore.

RUNNING.—The mill at Camp Floyd recently erected by Capt. Shaw, has started up and is running splendidly.

ANTELOPE.—The Antelope has opened up magnificently, showing a vein of 5 ft. of solid galena, with 10 ft. of ledge matter, the ore assaying 65 per cent. lead.

RICH STRIKE.—The workman on the Silver Cloud, Camp Floyd Dist. have just struck a new and very rich deposit of ore, at a depth of about 124 ft. The ore is principally chlorids mixed with black sulphurets and horn silver. The deposit is said to be large and continuous and assaye from $477 to $1,800.

WORK IN TINTIC is being carried on vigorously on the Sunbeam and other lodes. The Undine, Sydona and other mines are shipping ore to Walker Bros' Pioneer mill with satisfactory results. Several other mines have ore on the dumps, and are preparing to ship to East Canon. On Eureka Hill work is being pushed. At Diamond the Joe Bower, Saratoga, Isabel, Victoria and other good claims are being worked on with satisfactory results. The Isabel, down 150 ft. is said to have a large vein of ore in sight.

MINING ACCIDENTS.—Two miners, named Cain and McCanley sustained serious injuries last week in the Gwin mine, Calaveras county, by a rock falling upon them.

John Herron was killed on the 3d inst., in the Rising Star mine, Flint District, Idaho, hy falling a distance of eightly feet down the shaft.

Samuel W. Steele was killed on the 2d inst., hy a cave in the Buena Suerte mine near Belmont, Cerro Gordo District, Cal.

San Francisco Metal Market.

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, July 18, 1872.

IRON.—			
Scotch Pig Iron, ₱ ton	$60 00	@	65 00
White Pig, ₱ ton	50 00	@	55 00
Refined Bar, bad assortment, ₱ lb	— 04½	@	— —
Refined Bar, good assortment, ₱ lb	— 05	@	— —
Boiler, No. 1 to 4	— 05½	@	— —
Plate, No. 5 to 9	— 06	@	— —
Sheet, No. 10 to 13	— 08	@	— —
Sheet, No. 14 to 20	— 08	@	— —
Sheet, No. 24 to 27	— 09	@	— —
Horse Shoes	7 50	@	
Nail Rod	10		
Norway Iron	8		
Rolled Iron	5		
Other Irons for Blacksmiths, Miners, etc.	5	@	8
COPPER.—			
Sheathing, ₱ lb	— 40	@	— 45
Sheathing, Yellow	— 30	@	— 33
Sheathing, Old Yellow	— 12	@	— 12½
Composition Nails	— 28		— 30
Composition Bolts	— 28		— 30
TIN PLATES.—			
Plates, Charcoal, IX ₱ box	19 00		19 50
Plates, I C Charcoal	17 00		17 50
Roofing Plates	16 00		18 50
Banca Tin, Slabs, ₱ lb	— 45		— 50
STEEL.—English Cast, ₱ lb	— 15		— 18
Drill	15		16
Flat Bar	17		18
Plough Points	3 75		
Russia (for mould boards)	12½		
QUICKSILVER.—₱ lb	— —		— 65
LEAD.—Pig, ₱ lb	— 05¾		— 08
Sheet	— 10		— —
Pipe	— 9		— 10
Bar	— 08½		— 07
ZINC.—Sheets, ₱ lb	— 11		— 11½
BORAX.—Refined	— 28		— 30
Borax, crude	— 5		— —

STOCK SALES FOR WEEK ENDING JULY 18—S. F. Stock and Exchange Board.

NAMES OF COMPANIES.	Feet in Mine.	Shs. in ft.	Total Shs.	FRIDAY. Shs	Prices.	SATURDAY. Shs	Prices.	MONDAY. Shs	Prices.	TUESDAY. Shs	Prices.	WEDNESD'Y Shs	Prices.	THURSDAY. Shs	Prices.
Alpha	300	20	6000	345	65 @67	270	60 @65	205	57 @60	145	54 @56	35	50	60	54 @55
American Flag‡	2,600	11½	30000	890	21 @3	....	....	1315	21 @24	1460	23 @24¼	715	22 @23	630	21½ @22
Belcher	1,010	10	10400	1	10 @75	....	....	15	1100	17	1050@1075	....	....	20	1050
Baltimore	1,200	20	24000	570	3 @4¼	425	3¼@4	320	3½@4	230	3½	170	....	....	....
Bowery	1,000	30	30000	250	3½@3¾	....	....	300	3 @3½	1050	3½@3¾	580	3 @3¼	100	3
Bacon	....	....	....	110	90 @95	....	....	575	....	....	....	....	....	29	72½@75
Buckeye	....	....	16000	120	3¾	....	....	205	3¾@4	200	4	50	3¾	....	....
Chollar	2,800	10	28000	255	109 @110	235	109@110	157	121 @126	200	115@117½	110	107 @110	30	112
Caledonia	5,000	4	20000	345	51 @53	355	52 @61	390	62 @65	420	58 @60	200	51 @55	350	50 @58
Cons. Virginia	1,150	20½	23000	230	28 @30	110	33 @37	620	42 @46	295	38 @39	150	21 @30	418	32 @36½
Crown Point	90	166⅔	100000	150	170	151	167@170	70	167 @170	5	162½	....	....	110	152 @253
Daney	2,000	12	24000	200	1½@2	305	2 @2½	315	2½@2¾	160	2¾@2¾	270	2 @2¾	370	2 @2¼
Eureka Cons	....	....	5000	1935	24 @24½	1090	24½@25¾	1405	25 @26	1230	24 @25½	895	23½@22¾	530	22¾@23
Eureka	1,650	12	2000	85	17	....	....	....	....	....	....	45	17 @17½	....	....
Exchequer	400	20	8000	245	23 @26	100	19 @20	320	17 @20	70	17½@18	25	16	80	16 @18
Eclipse	70	357	25000	1240	12 @15½	555	11 @11¾	240	11 @12	230	10	110	9½@10½	570	10 @11
Empire Mill	15	16	1200	....	....	....	....	....	....	....	....	....	....	730	9 @10½
Gould & Curry	1,200	4	4800	50	@187	50	185 @195	114	215 @222	32	190 @200	35	170 @178	30	180 @185
Golden Chariot	750	1⅛	10000	75	8 @8½	....	....	45	8½@9	160	7½@8	20	8	....	....
Hale & Norcross	400	40	16000	180	72 @75	490	75 @78	390	97½@102	190	80 @85	230	74 @76	305	76 @81
Unhn & Hunt	3,600	8½	30000	285	3⅝@4	....	....	980	3⅝@4	....	....	100	3	100	2¾
Ida Elmore	1,300	17½	10000	130	13	....	....	250	13 @14	280	14 @14½	....	....	....	....
Imperial	184	543⅜	100000	2730	14 @15	1400	14 @16	1850	14½@15⅝	1525	13½@14⅜	3725	12 @14	1825	13½@14½
Julia	2,000	15	30000	500	6 @6¾	550	6¾@7	920	7 @8	890	7½@7¾	900	7½@7¾	250	6¾@7
Justice	3,000	7	21000	215	12 @13½	305	14½@15	205	20 @23	605	18 @19	465	14½@18	265	16½@18
Kentuck	85	21	2000	30	290	55	300 @320	15	330	110	315 @320	....	....	....	....
Kelcherbocker	1,200	20	24000	550	8 @10½	570	8 @9	680	9¼@10	455	8½	170	290	215	7½@8
Mammoth	1,000	20	30000	40	55	....	....	600	3¼@1	....	....	200	70 @85	50	60½
Meadow Valley	24,023	12½	60000	1485	17½@18¼	565	17½@18	290	16½@17	695	16¼@16¼	500	15½@16¼	185	15½@15⅝
Mahogany	720	137½	10000	335	13½@14	....	....	530	14 @15½	225	14½@16½	135	16 @16½	....	....
Ophir	1,400	12	16800	750	37 @38	475	38 @40	490	46 @49	590	43½@48	360	38 @40	690	40 @45
O. H. Treasure	800	265⅞	21233	85	91½@100	....	....	120	90½@ 95	....	....	40	9 @ 9½	35	9
Overman	1,200	10⅞	12800	215	80 @82	245	93 @100	150	107@115	255	95 @105	245	86 @87½	90	89 @92½
Occidental	800	12½	10000	....	....	....	....	....	....	....	....	....	....	100	4
Pioche	1,000	20	20000	800	40 @43½	1800	45 @49	1255	42 @44	635	39 @41½	860	24 @27	1220	23 @24½
Page & Panaca	2,400	16⅔	40000	300	2½@2¾	....	....	150	2½@2¾	150	2½@2¾	170	2 @2¾	325	2
Phœnix	....	....	50000	800	4¼@4⅝	850	4½@4⅝	455	4½@4⅝	425	4¼@4⅝	255	4½@4⅝	900	3⅝@4
Raymond & Ely	4,000	7½	30000	300	145 @150	135	145 @147	33	142 @147	120	145 @147	70	146 @147	....	....
Savage	800	20	160.0	100	143@148	105	145 @147	485	210 @230	200	165 @175	185	160 @153	285	155 @165
Seg. Belcher	160	40	6400	215	94@97	165	110 @120	200	120 @130	130	120 @132	170	108 @125	97	117 @122
Sierra Nevada	3,000	7½	20000	245	15@15⅝	230	15 @16⅜	814	16 @19⅝	220	16 @17	105	15½@15⅝	16	15⅝
Succor	7,600	3	22800	70	4	295	4 @4¼	295	4¾@5	150	4½@4⅝	280	4¼@4⅜	200	4½@4¾
St. Patrick	1,800	2¾	5000	....	....	....	....	....	....	....	....	....	....	....	....
South Chariot	660	30⅓	20000	....	....	....	....	....	....	....	....	....	....	....	....
Wash. & Creole	200	150	30000	730	5 @5¼	....	....	410	5½@5¾	515	4½@5	200	4½@4¾	80	5¼
Yellow Jacket	1,200	20	24000	405	137 @141	790	147 @156	190	154 @160	235	140 @146	200	135 @140	100	141 @142
Yule Gravel	400	25	10000	....	....	....	....	50	2	....	....	45	2 @2½	....	....

NOTES.—†—California. *—Washoe. ‡—White Pine. §—Ely District. ¶—Eureka District. ‖—Idaho. ¦—Nearly. ⁂—Over.

S. F. Stock and Exchange Board.

THURSDAY, July 18, 1872.

There has been quite an excitement in stocks during the past week, and California street has presented an appearance of activity reminding ons of the flush times of March, April and May. The respite given to the members of the Board by their short vacation on and after the 4th of July, seems to have awakened them to new vigor. A reported strike in Savage sent that stock up suddenly, and the adjoining mines with it. Hals & Norcross particularly, showed a very decided advance. The men in the 1600-ft. level of the Imperial encountered a seam of ore, and the men were immediately shut up in the mine, according to reports. Alpha and Exchequer, both near the Imperial, felt the influences of this rumor, and both went up accordingly. The Superintendent of the Pioche mine reported that on the new ledge, after running 40 feet on the vein, he had developed a body of ore three feet wide. He again wrote that when in 55 feet, the face of the ledge showed five feet of ore, assaying $400 per ton. This brought up the Ely stocks of course. The Virginia *Chronicle* of the 12th said that the vein or bonanza in the Imperial carries five feet of very rich and four feet of fair milling ore. On the 17th inst. Comstock stocks were down again, but Ely stocks were firm at the prices at which they sold two days before.

On Friday the 12th inst., stocks were active and showed a decided tendency upward. From highest rates from previous morning's sales Alpha advanced $1, Belcher $55, Bacon $25, Baltimore $1, Bowere $4, Caledonia $1, Chollar Potosi $5, Consolidated Virginia and Confidence each $3, Exchequer $1, Gould & Curry $11, Hale & Norcross $5, Justice $2, Julia $1, Knickerbocker $4.50, Ophir $2, Overman $5, Savage $5, Segregated Belcher $4, Silver Hill and Trench each $1, and Yellow Jacket $6. Kentuck was $15 lower.

On Saturday a large business was transacted by the Board, and the market was in an excited state with plenty of buyers. From highest rates on Friday Kentuck advanced $30, Segregated Belcher $24, Overman $18, Yellow Jacket $12, Caledonia $8, Consolidated Virginia $7, Pioche $6, Gould & Curry $4, Savage and Justice each $2, Confidence, Hale & Norcrose, Julia, Ophir and Silver Hill each $1. Exchequer declined $6 Raymond & Ely $3, and Alpha $1.

On Monday the streets were crowded long before the Board met, and mining stocks were in great demand. The Board met at noon and the seseion lasted till 2 o'clock. Most all descriptions were higher; the principal rise however was in Savage, Gould & Curry and Hale & Norcross. From highest rates ou Saturday, Belcher advanced $25, Caledonia $5, Chollar-Potosi $16, Consolidatsd Virginia $7, Gould & Curry $30, Hale & Norcross $24, Justice $8, Kentuck $10, Ophir $8, Overman $15, Savage $83, Segregated Belcher $10, Sierra Nevada $3, Succor $1, and Yellow Jacket $10. Alpha declined $5, and Confidence $2.

On Tuesday the stocks were still active but at lower prices. From highest prices on Monday Alpha declined $5, Belcher $25, Calsdonia $5, Chollar Potosi $9, Consolidated Virginia $5, Crown Point $8, Confidencs $1, Exchequer $2, Gould and Curry $25, Hale and Norcross $15, Impsrial $1, Justice $4, Kentuck $10, Ophir $1, Overman $15, Savage $55, Sisrra Nevada $2.50, Silver Hill $1, and Yellow Jacket $18.

On Wednesday all descriptione were still lower and quite a reaction ensned. Alpha declined $5 more, Caledonia $6, Chollar Potosi and Consolidated Virginia each $9, Confidence $1, Exchequer $2, Gould & Curry $17, Hale & Norcross $9, Impsrial $1.50, Justice $2, Kentuck $30, Ophir $6, Overman $13, Savage $22, Segregatsd Belcher $5, Sierra Nevada and Silver Hill each $1, and Yellow Jaekst $6.

To-day the market shows an improvement compared with yestsrday morning's sales. The ealee of this morning show that Alpha advanced $6, Caledonia and Chollar Potosi each $4, Consoidated Virginia $5, Exchequer $2, Gould & Curry $7, Hale & Norcroes $1, Imperial $1.50, Ophir $2, Overman $3, Savage $5, Yellow Jacket $7. Confidence declined $2 and Segregated Belcher $3.

The ore discovery in the Imperial shows five feet wide, assaying from $80 to $200 per ton. A remittance of $10,000 came from the Pioche mine on the 13th inet. The Eureka Consolidated mine reduced 800 tons of ore last week; the Sierra Nevada reduced 400 tons, yielding $3,074. The Eureka (Grass Valley) mine, cleaned up last week 650 ounces of amalgam. The North Star mine reduced 109 tons of ore last month, and raised 90 tons, leaving 70 tons on the dump. The Crown Point mine extracted last week 2,900 tons of ore valued at $117.300; the Chollar Potosi, 950 tons, assaying $39.60 per ton; the Hale & Norcross extracted 575 tone. Shipments from the Raymond & Ely mine on this month's account, up to the 15th, amount to $164,000.

The following dividende have been paid by mining companies this month:

COMPANIES.	AM'T PER SHARE.	AGGREGATE.
Belcher	$30	$312,000
Crown Point	3	300,000
Raymond & Ely	7	210,000
Pioche	1	20,000
Keystone Quartz	50	5,000
Total		$847,000

The following companies have levied assesements since the first of July. Daney, 75c.; Empire, 50c.; Louise, 10c.; Noonday, 25c.; Pacific Borax, 15c.; Phœnix, $1; Senator, 25c.; Spring Mountain Tunnel, 30c.; St. Louis, $1; William Penn Cons., 10c.; Kentuck, 50c.; Pioche West Extension, 30c.; Bowery Cons., 75c.; National, 50c.; Baltimore American, $1; Sterling, 50c.; Sapphire, 30c.; Ophir, $5; Piermont, 60c.; Morning Star, $1; Nevada L. & M. Co., 8c.; Kincaid Flat, $3.

[Latest reports concerning the progress of work and developments in the principal mines on the coast will be found in our MINING SUMMARY.]

For Mining Shareholders' Directory see page 44.

Coal.

The production of Coal in California is heing prosecuted with vigor. The product of the Mount Diahlo mines for the past eix monthe ehows a marked increase over the same time laet year, as will be seen by the following statement:

	1871.	1872.
January, tons	9,332	14,671
February	8,832	13,616
March	10,508	16,030
April	9,157	13,062
May	11,468	14,778
June	11,177	12,289
Totals	60,474	84,446

At leaet 90 per cent. of the product at these mines finds its way to this city, where it is chiefly used for steam purposes. These mines are the only ones worked in the State to any extent. Our other Pacific coast supplies come from Oregon, Washington Territory, Utah and British Columbia. The mines in Oregon and Washington Territory from which we ohtain supplies are at Cooe Bay, Bellingham Bay and Seattle. The receipts from these sources for the six months compare as follows:

	1871.	1872.
January, tons	3,994	2,790
February	4,367	1,404
March	2,010	3,455
April	6,013	3,877
May	4,768	4,497
June	4,371	4,387
Totals	27,423	20,410

The decrease receipts from these mines is easily explained. There was a stoppage of several weeks at the Seattle mine to complete railroad to the water. There have heen no receipts from the Bellingham Bay mine, on account of a fire in the early months of the year, and the repairs suhsequently needed. A veesel wae recently eent there to load, and it is reported that the mine is now all right. Most of the receipts of coast descriptions for the past six months have therefore come from the Coos Bay mines. Hereafter it is expected that the Bellingham Bay and Seattle miues will furnish their usual eupplies. The Rocky Mountain mine in Utah has sent us 771 tons Coal in the past six months all hy railroad. Our imports from British Columbia compare as follows:

	1871.	1872.
January, tons	1,975	420
February	2,327	....
March	.....	4,380
April	1,028	2,280
May	1,000	7,060
June	1,466	2,500
Totals	7,796	16,640

The comparison shows an increase of 9,000 tons from that source. Recently a cargo arrived from the Wellington mine, a new claim in British Columbia. Our Coal importe from Australia compare as follows:

	1871.	1872.
Jannary	.....	4,329
February	4,357	8,890
March	.....	11,640
April	840	9,930
May	4,193	7,982
Jnne	1,554	3,386
Totals	10,944	46,157

Our other foreign Coal importe for the past six months emhrace 5,831 tons English and Scotch, and 3,862 tons Chili, against 2,201 tone English for the same time last year. Our receipts from domestic Atlantic ports for the six months consist of 4,483 tons and 1,193 csks, against 5,452 tons and 2,224 csks for the same time last year. Recapitulating, we have the following receipts of Coal at San Francisco for the first six months of the year:

	1871.	1872.
Pacific coaet supplies, tone..	81,850	97,183
Eastern snpplies	7,232	5,547
Total domestic	89,082	102,730
Total foreign	20,941	72,490
Grand total	110,023	175,220

While the Pacific coast eupplies are steadily increasing, there ie reason to believe that there is more than the ueual quantity afloat for this port. The 25 or 30 vessels on the way here from Australia must have about 50,000 tons, to say nothing of the quantities en route from Enrope, South America and the dometic Atlantic States.—*Bulletin.*

Glaes Works.—For reaeons not specified, the Boston papers give a gloomy report of the glass works of New England. Half of them are lying idle. There is in Philadelphia a single factory of glassware and in New York there are none now at work.

A $5,000,000 tnnnel is to be constructed under the Mississippi at Memphis.

Placers in Santa Barbara.

The new discovery of old gold placers in the San Felician District, in this county, is creating mnch local interest.

To Dr. S. P. Gulberson, who has just returned from there, we are indehted for much useful information concerning them, and herewith give a condensed statement of his report. Thirty-three miles from here, up the north hank of the Santa Clara river, and over one of the best natural roade in the State, the searcher after these new-old mines finds himself at the confluence of the Piru river with the Santa Clara. The Piru is a heautiful little river, heading high up in the mountains, east of Fort Tejon, and at all seasons affords a beautiful supply of the purest, sparkling waters. At all points on this stream gold has been found, and a few milee up hae heen worked every year to some extent; and, it is eaid, with profit during the winter eeason. Following up its east hank ahout eight miles, the wayfarer finde himself at the mouth of San Felician creek, a branch of the Piru. Here the country hecomes exceedingly broken. The hills and the hluffs are precipitous, rocky and difficult of ascent.

Following up this creek four miles, the mines are found that are now making so much talk. The principal placer is a large red hill, which hae been tunneled and worked for many years, after the most primitive fashion. There is no water for washing, except a minute quantity, which is carefully hoarded from a small spring, and ueed with a pan or batea. The gold is found generally distrihuted from surface to bed-rock and in the adjoining gulches and ravines. A "hit" to the pan is often found, and the Dr. thinks there are many rich-paying placere if water conld be had to work them. The main branch of the Piru, whose course wende far ahove and around these placers, would frnish enough of the element, bnt it is thought that the distance and rough character of the connry precludes any probability of an early attempt to bring it in. The gold is found in coaree grains, and in early times large amounts of it was secured hy "dry-washing." An old miner who has lived there for many years, says that, in the early days, he had seen over a hundred Californians and Mexicane seated on their blankets of a Sunday morning, with heaps of the ehining "dust" at their sides, playing monte.

Several relics of early times have lately been found at these placers, going to prove that they were prohahly known and worked a century ago.—*Ventura Signal.*

Original Amador Mine and Mill.—A few days ago we paid a visit to the above named mine, situated at Amador City, and were agreably surprised to find such extenеive and valuahle works approaching completion as are now being erected in connection with this mine. The mill belonging to the mine was originally calculated to be propelled hy water-power, but owing to the uncertain supply of water during the summer months, steam will take its place. The engine and hoilers are heing put in place and ere long forty ponderous stamps will he engaged in crushing the large amount of valuahle rock now above ground. The building and machinery are of the most snhstantial character, and for compactness, completeness and labor saving, when finished the Original Amador Mill will be eecond to none on the Pacific Coast. From the main shaft the rock is raised to a platform within a few feet of a crneher, run hy steam, where the ore is reduced to a uniform size, from thence it is conveyed hy shutes to hoppers connected with the batteries, the hoppers being eelf-acting supply the stamps, thus dispensing with hands to break the rock, and with feeders to supply the hatteriee. From the batteries the pulp flows through numerous sluiceways, floored with hlankete, where a large amount of fine gold is caught, after escaping from the hatteries; these slnices diecharge their contents into tanks connected with two very large self-acting huddlee, where the remainder of the gold and sulphurets escaping are caught. The buddles after the style of those in use in this mill is something new, aud we think not in general uee, but from careful ohser vation we feel satisfied they will he found a great improvement on those generally in use. Take the Original Amador Mill, in all its appointments, improvements, conveniences and gold saving oapacity, and it will rank, as hefore said, with the best on the Pacific Coast. And what is better still the mine connected with it has heen proven to be of great value, and fully justifies the magnificent and expensive machinery now being placed upon it.—*Amador Ledger.*

Combined Pencil Sharpener, Holder and Twine-Cutter.

Thie little invention, though simple in appearance and construction servee ae a very convenient and almoet indispeneable inetrument to clerks and other pereons who, by the nature of their occupation, are compelled to freqnently use a pencil. The pencil eharpener, shown on the front side of the cut, is made in the ordinary manner, and to one side of it is screwed a clasp which is properly curved to receive the pencil. Between the claep and sharpener ie a blade or knife, which extends from one end to the other of the eharpener. In the preeent instance the edge of the blade is represented as rounded from end to end, which is a very convenient form, although other forms, as a hook, could be used ae well.

Between the clasp and sharpener, on the opposite side, ie a pin fastening by means of which the instrument can be fastened to the clothing. For using the knife the device will be most convenient when attached to the veet near the right vest pocket. The use of the sharpener and clasp will be evident to any one, and they are rendered much more ueeful and convenient by being connected together in the manner described, and attaching them by meane of a pin to the clothing. The knife servee the purpose of a knife or a pair of ehears, to cut twine when the wearer is tying up bundlee or desires to cut a string. The simplicity of this little instrument aud its evident utility will do

much towards introducing it into general use, and clerks, dry goods dealere, etc., will readily appreciate its value. The device has recently been patented through the Scientific Press Patent Agency, by Evan A. Edwards, of San Buenaventura, Santa Barbara Co., Cal.

Alcohol in Wines.

Our article on California Wines, in the Press of June 1st, has attracted considerable attention and called out some candid criticism. We are glad it hae. The wine indnetry of California, in our opinion, is deetined to become at no distant day, one of the moet, if not *the* most important and valuable industries of the State. It is therefore of the higheet importance that everything connected with this industry shonld be fully and candidly diecueed and correct conclusione arrived at, principles established and practices settled. To this end we invite candid discnssion and reliable facts.

A practical wine maker of Sonoma County prompted by the article referred to and the diecussion that has followed, has undertaken to test, with reliable instruments, the wines of all the principal manufacturers of Sonoma and Napa Counties. We will therefore be able soon to lay before our readers the figures showing the per cent. of alcohol these wines contain.

We hope the Vine Growere and Wine and Brandy Manufacturers' Association will take steps to have the wines in all the districts of the State similarly teeted. Such information will be very valuable as a guide in wine making in the future.

For the information of such of our readers as may not have the data at hand, we append a table from Brande's Chemistry, showing the percentage of alcohol in the various kinds of wine from different countries. Thie table will enable those who wish to form an opinion as to what amount of alcohol California wines for table purposes, and for a popular beverage ought to contain.

It will be eeen that the cheap and popular French and German wines—the different clarets and the Rhenish wines as we have stated in the artiole referred to, only contain from 7 to 10 per cent. of alcohol. The heavy wines which are not nsed by thoee people, either on the table, or as a common beverage, contain more.

PORTUGUESE WINE.

Port contains 14.37 to 25.83 per cent. of alcohol
Buccella contains 18.43 " " "

SPANISH.

Sherry contains.....13.98 to 23.85 per cent. of alcohol.
Malaga contains.....17.26 to 18.94 " " "

MADEIRA AND CANARY ISLAND.

Madeira contains 14.09 to 24.43 per cent. of alcohol.
Malmsey " 12.86 to 16.40 " " "

FRENCH.

Claret contains.....12.91 to 17.11 per cent. of alcohol.
Claret Chateau Latour 7.75 " " "
Claret Vin Ordinair.... 8.99 " " "
Champagne contains..11.30 to 13.80 " " "
Burgundy contains....12.16 to 16 60 " " "
Hermitage contains...12.32 to 17.43 " " "
Sauterne contains..... 14.22 " " "
Frontignau contains.. 12.79 " " "

GERMAN.

Hocheimer contains.....8.88 to 14.37 per cent. of alcohol.
Johannisberger contains. 8.71 " " "
Rudesheimer contains..5.90 to 12.92 " " "
Rhenish contains.....7.00 to 7.53 " " "

Manufactures in the United States.

The following statistics show the immense development that has taken place in the manufactures of the United States during the last decade. The total figures of the Union were, as appears from the following table, $4,302,453,616, as opposed to $1,885,861,676 for 1860, an increase of more than 230 per cent. Compared with the previous decade the result is astonishing, particularly when we remember the great number of men drawn from industrial occupations by the demands of war. There is no doubt but that it must be attributed in great part to the operation of the heavy tariff rendered necessary by the burden of the war debt. The value of manufactures per head is, however, as yet only about $117, showing that a great deal more remains to be done in the way of development.

The Pacific Coast States and Territories show a total of $105,552,454, of which California exhibite $73,116,756, being an increase of less than 6 per cent. on 1860. So that we have fallen very much behind the reet of the Union. In a future article we will examine into the causes of this. Oregon and Washington have kept pace with the rest of the Union, and as for Nevada, Idaho and Montana, their manufacturiug industry dates no farther back than 1860.

STATEMENT EXHIBITING THE TOTAL VALUE OF MANUFACTURING (GROSS PRODUCTION) AT THE CENSUSES OF 1850 AND 1860, AND APPROXIMATELY FOR CERTAIN STATES AT THE CENSUS OF 1870,

STATES AND TERRITOR'S.	1870.*	1860.	1850.
Alabama	$13,210,655	$10,588,556	$4,528,566
Arizona	185,410	.....	.....
Arkansas	7,699,676	2,880,576	537,908
California	73,116,756	68,25.,328	12,862,522
Colorado	2,797,820	.....	.....
Conn	160,974,574	81,924,555	47,114,585
Dakota	178,670	.....	.....
Delaware	18,343,313	9,892,902	4,649,296
D. C.	9,294,489	5,152,102	2,690,258
Florida	4,70 ,908	2,447,969	668,335
Georgia	32,994,267	16,925,564	7,082,075
Idaho	1,045,324	.....	.....
Illinois	205,821,951	57,580,886	5,584,272
Indiana	109,120,684	42,803,469	8,725,423
Iowa	46,782,497	13,971,325	3,551,783
Kansas	11,798,353	4,357,408	.....
Kentucky	54,149,043	37,931,240	21,710,212
Louisiana	†45,000,000	15,587,473	6,779,417
Maine	79,822,005	38,193,254	24,661,057
Maryland	75,924,104	41,735,157	33,043,892
Massach'ts.	522,163,873	255,545,922	157,743,994
Michigan	118,776,853	32,553,356	11,169,002
Minnesota	23,541,325	3,373,172	58,300
Mississippi	11,268,102	6,590,687	2,912,008
Missouri	†215 000,000	41,782,7o1	24,324,418
Montana	2,559,391	.....	.....
Nebraska	5,892,512	607,328	.....
Nevada	15,870,539	.....	.....
N. Hamp.	71,678,013	37,586,453	23,154,503
N. Jersey	69,853,320	75,305,104	39,851,250
N. Mexico	1,489,868	1,249,123	249,010
N. York	†790,000,000	378,870,939	237,597 240
N. Carolina	20,701,332	15,678,698	9,111,050
Ohio	280,965,791	121,691,148	62,692,270
Oregon	6,901,412	2,976,761	2,236,640
Penn'a	725,599,424	290,121,188	155,044,910
Rh. Island	110,469,650	40,711,296	22,117,688
S. Carolina	13,438,226	8,615,195	7,045,477
Tennessee	38,587,953	17,987,225	9,725,508
Texas	15,359,731	6,577,202	1,168,538
Utah	2,351,011	900,153	291,220
Vermont	31,976,889	14,637,807	8,570,920
Virginia	38,497,077	50,652,124	29,602,507
W. Virginia	24,169,051		
Washing'n	3,045,802	1,406,921	.....
Wisconsin	78,506,309	27,849,467	9,293,068
Wyoming	765,424	.....	.....
Total	$4,302,453,616	$1,885,861,676	$1,019,106,610

*—Approximate. †—About.

Mountain Ranges.—The *average hight of mountain range* in Switzerland does not begin to compare with Colorado, or for that matter with any Western Territory. The mean hight of the Alps is from 8,000 to 9,000 feet above the sea. The mean hight of the Rocky Monntains is from 10,000 to 12,000 feet. This is the mean hight of the immense continental sweep of the *Cordillera de la Sierra Madre.* It is probahle that the average hight in Colorado, which is the table land of the continent will approach very nearly to 12,000 feet.

Useful Information.

The Mississippi and Niagara Rivers.

It is well known to geologists that the upper lake regions, embrscing, Lakee Supsrior, Michigan and Eris, sre very old—thst they existed long before the Allegbeuy mountains were lifted above the occan. Ths samo may also hs said of the region through which ths upper St. Lawrence flows. Many millions of years is the length of time assigned, hy geological ovidencs, for the existence of the lake system, and yet those samo geologiste are agreed that two or three hundred thousaud years, at most, is the period that can be assigued for ths flow of the Niagara river, through which thoss lakee ars now drained.

How thsu are we to account for their draiuage through ths millions of years not registered in the chaunel of the Niagara?

Careful surveys bave shown that the Niagara, at the head of the rapids, *is only thirty feet higher* than tho waters of Lake Michigan; consequsutly a barrier, a little more than thirty fect high across tho Niagara platean, would throw the waters of Lakes Erie and Huron back into Lake Michigan. Othor surveys have shown that the waters of the Chicago river, where thsy reach lake Michigan, are but five or six fset higher thau ths waters of the nearest tributary of the Illinois river, which flows southward into the Mississippi. The Chicago river, in fact, has long been little better than a mere slongh, its waters almost etationary, and very filthy from staguation, so ruuch so, that, if we are correctly informed, its npper bed has recsutly been deepened, for sanitary rsasons, and a communication opened with the Illinois rivsr, so that ths waters of Lake Michigan are now actnally flowing both ways—eastward to the St. Lawrence and wsstward to the Mississippi.

An old river bed, of large dimensions, hae long heen known to exist, throngh which it is supposed all the waters of Lake Michigan formerly found their way iuto the Mississippi; while there is a plainly defiued barrier across the Niagara river, just ahove the rapids, which must, at sometime iu the past, have prevented the waters of the upper lakes from flowing eastward.

Further evidence that these suppositione are correct is found in the fact that the enormons exteut of flat country in Louisiana, Mississippi, etc., must have beeu made from the drift of an ancisnt river of much larger magnitude than the presont Mississippi. Thsre could have been no other source for such a flow of water except from tho region of country drainsd by the Great Lakes, which is fully eqnal, if not greater in extent, than ths area draiued by ths Missouri.

But what is stronger still, this mighty stream of early geologic age, once emptied its waters at a point some three or four hundred feet below its preseut level, as is fully shown by artesian borings, which bring up vegetable remaius and chips from huge trees from that distance below the existiug surface. It was by the migbty rush of ths waters of this huge river, laden with mud, sand, floating and tangled trees, etc., that the thonsands of square miles of ths best cotton and sngar land on the Continent have been mads all along the north weetern coast of ths Gulf of Mexico. It is eaid that unmistakable evidences of the oncs rough aud rugged bottom and shorss of this stream are still to be seen along some of the upper portions of the present bed of the Mississippi. The gradual subsideuce of the land near the Gulf must account for the apparent elevation of its waters from the level of their earlisr deposits.

Putting Grindstones in Order.

It is impossible for any one to grind a tool properly on a stone that wabbles like a drunken carriage-whesl. In order to grind the basil of a chisel or plane-iron true, the periphery of the grindstone must revolve as true as a millstone. Ths first step toward puttiug a etone in proper ordsr is to measure from ths centsr or ths eye to the periphery, on four sides, for ths purpoee of determining whether the stons has besn worn off more on one sids than on ths other. When a stonc is driven by a treadls, a large part of the grinding is done on one side of the etone when ths treadls is going down. In such a cass, the stone should be rshung with the journal nearer one side of the eye than the center of it. After it has bsen hung ae true ae practicable, screw down ths caps of the bearing-hoxes so that the journal will have no play; then, with ths end of an old fils turn a small groove near each edge of the periphery, after which drose off each side with a sharp, cold-chisel an inch or more from the grinding surface. Now fix a solid rest close to each sids of ths stone, turn a small groovs in each side of the stone, and dree off the prominent parts with a sharp cold-chissl. Always cut horizontally toward ths middle of ths stone from each side, and thus avoid eplitting away large chips from the side of the periphery. Always use a light hammer or mallst and a small half-iuch chisel. With a heavy hammer and large chissl, there will be great danger of chipping off a largs piece of the stone beyond the mark. With a light hammer and a emall, sharp chisel, one can fit up ths psriphery of a wabbling grindstone, in a brief space of time, so that it will rsvolve eatiefactorily true. *The Industrial Monthly.*

What Oils will Ignite Spontaneously.

Thst certain drying oils, as liussed, for example, abeorb oxygen, thsreby raising ths temperatnrs of the article on which they msy hs spread, is well known, or ought to he, and thie increase of temperature may be carried to the extent of causing combustion. That oiled rags, etc., do taks fire, and the firs is from them often commnnicated to woodwork, must be admitted. Hence, ths origin of certain fires that cannot be accounted for otherwise.

The recent hnrning of ths moueter balloon at Chelsea, Mass., is a cass of spoutaneons combustion, ths linseed oil and varnish with which it was coated taking fire by ths absorption of oxygen and raising the tsuperature to the extent of setting the cotton cloth, of which ths balloon was made, ou fire.

But thess drying oils are vegetable products, tho chief one used beiug the linseed referred to. It does not follow that animal or mineral oils will produce any such effect, for tbey are not drying oils and thsrefore absorhers of oxgsn. Yet the mistake is possibly made aud ths idea is certainly entsrtained that rags and sawdust eaturatsd with lubricating oils will take fire epontanoously. We do not nnderstand the matter. The fire at Faber's pencil factory in New York, lately, has hesn attributed to sawdust aatnrated with machinery oil, takiug fire spontaneonsly, but with how much reaeou.

Quite liksly the common mistake is mads that becauss csrtain things moistened with csrtain oils take fire, thsse same certain things will or may take fire if wet with *any* oils. Sone go so far ae to say that oil hsated by frictiou in machinery bearings if allowed to fall on cottou rags, waste, eawdust, and the like, will geuerate eufficient hsat to take fire, but of that we waut proof. It is an important matter, and it is to be hoped those who possses facilitiss will investigate the euhjsct furthsr.—*Cabinet Maker.*

The Nauuow Gauge Convention which recently mst in St. Lonis, was expected to he attendsd by svery manager of such an intersst iu the country, and to devslope certain facts concerning which many railroad men are now in doubt. The frieuds of the narrow gange eystem assert that their road can be built and equipped at a cost not exceeding one-half that of ths broad gauge; that they earn as much per mile as the latter; that they ars equally rapid in transporting and far more secure. So far thers doee not seem to be any question regarding ths practicability of narrow-gaugs for the husiness to which it has besu applied.

Grafting Wax.——A recipe for making grafting-wax, from a practical nurseryman of great experience; is—resin, six pounds; heeswax, one pound; tallow, ons pound; melt and work uutil cold. This is to be used warm, when working in the houss. For outdoor work, Mr. J. J. Thomas recommends ths sams formula, except using linssed oil, ons pint, in place of ths tallow. For outdoor work a good wax is made by using one to two pounds less of resin, one-half to one more pound of beeswax, and ons aud ons-half pints of linseed oil; to be nsited, made in a mass, and applied by hand.

Test for Japan.—Pour ont a fsw drope of Japan on a stone or a piece of glass, and add two or three drops of raw linseed oil. Stir the two together, and if the oil readily combines with the Japan, ths drysr is of a quality safe to bs ueed on carriags work. If the Japan repels the oil and the end of the etick becomes gummy, the Japan is worthlese. We hava the above from a varnish and Japan maksr of large experisnce.

Tan Color.—The beet way to make this ehads ie to get a pail of ground bark from the tannery; but if that can't bs done, make hemlock bark as fins ae possibls, soak or beat it until yon think the color is out; maks your goods as eoft as possible by washing thsm in strong soap suds, and immerss; if not dark enough, add mors bark. Don't color in iron, it will make drab; if you want drab, add a little copperas.

Mildew in Boat Sails.—A safs plan ie eaid to bs to dry the eaile thoroughly, in the opsn air if practicable, and to swesp them well on both sides with a etrong hair brush, having eprinklsd it bsforehand with water in which a little ammonia hae besn dissolved. Do not roll the sails up wst, as it is damp which has produced the mildew. To disinfect eails, or prevent infection, carbolic acid is good.

The tendeuoy of steam is to fly to the coldset place to impart its heat. If, for instancs, a ball of ice be suspsnded at the ceiling of a room, and some water thrown upon a hot etove in the room, the steam thus gsnerated will go continually to the ics until it ie melted. Thus ae an equalizer of heat eteam has no squal.

Engravino Extraordinary.—Clauds Mellen engraved in 1700, a full head of Christ with one unbroksn line. Thie lins commsnced at ths appex of ths nose, and wound out and ont like a watch-spring, until it snded in the bordsr of the picture.

Misery aseails riches, as lightning does the highest towere. Or ae a tree that is heavilyy laden with fruit breaks its own boughs, so do riches destroy the virtue of their poeeessor.

Good Health.

Increasing Longevity of Human Life.

A cotsmporary says that physiologists tell us that with a greater prevalsnce of knowlsdge of tho laws of health the world may expect an increass of ths average duration of human lifs. Psrhaps thie tims ie alrcady dawning. At any rate here are a fsw "health considsrations" for those above sixty. Vou Moltks, comparatively juvsnile at ssvsuty, plans and sxecntes such a campaign ae modern times never witnsssed; Emperor William, tough ae oak at seventy-four, roughe it on ths field as jauntily as a young lieuteaant. Von Roon, ths Prussian War Minieter, oldsr than either General or Emperor, directs from Berlin the marshaling of hosts and gathering of supplies.

Nor were these wonders of longevity by any means confined to the German side of the contest. Thisrs, at seventy-five, was seen at the end of the contest flitting with ths vivacity of a boy from one camp to the other, as a negotiator of peaco, and as the exscutive head of ths Frsnch Goverumeut has since shown a powsr of intellect and applieation to businees that would be cousidered woudsrful iu any man even iu the prime of lifs. Of his aseociates, Dufaure, the Minister of Justice, is seventy-three, and Gnizot, King Louis Philipps's ex-Minister, though past eighty, writes booke with as much force as when he occupisd a profsssor's chair. In Englaud, where men are rsckoned young till they are past fifty, splendid examplss of vigoroue old age ars plentiful. Palmerston, Lyndhurst and Brougham, octogsnarians all of them, led public opinion of Great Britain to the eud of their days, and in harness. It is said of the first of the three, that after a field-night in the Houss, hs would be ssen at daylight walking hoiue at a pace which a youug man might envy. Thoiuas Carlyle, over seventy, abates nothing of his intellsctnal vigor; while Lord John Russel, though crsspiug towards eighty, still attsnds the Upper Houes of Parliamsnt.

Mercury in the Human System.—A tablespoonful of quicksilver wae lately found in an old grave in York county Pennsylvania. It is snpposed to have been buried thsre in the shape of calomel within the patient.—*Ex.*

In old timee the doctore eometimee admiuistered pure mercury as a medicine; a mors common form of mercurial administration was the blus mase. Either of thess preecriptions would account for the preeence of quicksilver; but dosing with calomel would not.—*Scientific American.*

We have kuown globulss of mercury to bs abstracted from the systems of psrsons who had never taken it in any form but that of oalomel. Calomsl bsing a chlorids of mercury formed by heat and a pulverizing procees, the mercury can be prscipitated or reetored by the uee of acids. Why will not the acids of ths stomach, which will not act npon the msrcury itself, deprive it of its chloride vehicle and leave it pure. If the *American* does not bslieve that dosing with calomel will acconnt for the presence of quicksilvsr, it can be eatisfied of the fact by submitting a calomel doeed patient to an electric bath.—*Am. Manufacturer.*

Necessity of Carefulness in Old Age.—An old man ie like an old wagon; with light loading and careful ueage it will last for years; but ons heavy load or sudden strain will bteak it, and ruin it forevsr. So many psople rsach the age of fifty, sixty, or even esvsuty, measurably free from most of the pains and infirmities of age, cheery in hsart and eound in hsalth, rips in wisdom and expsrience, with eympathies mellowed by age, and with reasonable proepects and opportunities for continued ueefulness in the world for a considerable time. Let euch psrsons be thankful, but lst them also bs careful. An old constitution is like an old bone; broken with eass, msnded with difficulty. A young tree bends to the gale, an old one snape and falls before ths blast. A eingls hard lift; an hour of heating work; an svsning of exposure to rain or damp; a severe chill; an excess of food; ths unusual indulgencs of any appstite or passion; a sudden fit of anger; an improper dose of medicine;—any of these, or othsr similar things, may cnt off a valnable life in an hour, and lsavs the fair hopeeof usefulneseand enjoymsnt but a shapelsss wreck.

Druggino.—A writer in the London *Standard* described a "most succsssful mode of drugging in use over the American continsnt, which produces lose of strength and torpor, and which, in the case of death resulting, defies the most acute msdical analysis." He was himsslf once a victim to this drugging. Hs drank one mouthful of so-called brsndy, and in ten minutss aftsr he bscame giddy, lost the uss of his limbs, and thsn conciousness, and did not recovsr for some ssven hours euffieiently to enable him to walk. He subsequently got acquainted with a man who had been employed at a New York vault to snact the part of a drugger, and this respectabls, and no doubt reliable individual, explained ths drugging process. Part of a bottle of any liquid is decantsd aud the spacs filled up by tobacco smoke, expelled from a clay pipe, well impregnated with nicotins. The bottle is thsn wsll shaken and fillsd up again with the portion befors taksn out. It is then left to etand for a week or so; but if left etanding for a fortnight death will bs the reeult of drinking.

Physiolooical Action of Quinine.—Ths physiological action of quinins has lately been ths subject of detailed expsriment by Binz. who found it to havs extraordiuary powsr in arresting ths process of fermentation and putrefaction, and to be a powerful poisen for low orgauisms, or, in other words, for all moving bodies consisting of protoplasms. It appears to kill fungi and bacteria, which accompany fermsutation and putrsfsction, and pnts a stop to thess processes. It arrests ths motion of the whits blood corpuscles, and thus prsvsuts thom from making their exit from the blood-vessels. It therefors diminishes or arrests ths formation of pus in infismmation, pus consisting in great measurs of au accumulation of white corpuscles which hsvs issued from ths vessels. It also destroys the power of certain substances to prodnce ozone. The red blood corpuscles have thie power, and, by depriving them of it, qniuine, whsn prssent in the blood, must diminish the change of tissus iu the body, and thereby lssen ths production of heat.

It is also found that quinius lessens oxidation iu ths blood; other substances, such as snake poison, incrsasing it. When putrid fluids are injected into the circulation of an animal, its temperature rises; but if thsse ars prsviously mixed with quinine, this rise is arrested, or very much diminished. According to Zuntz, the uss of quinine has a marked influence upon the exersion of urea, the amonnt diminishing very greatly.—*Harper's Monthly*

Ancient Dentistry.—Among the ancients great euccees was obtaiucd in this art. Casselius was a dentist in ths reign of the Roman trumvirs, and gold was used in the filliug. But nearly 500 B. C. gold was thus used, aud gold wirs was employed to hold artificial testh in position, and it doee not seem to have bsen a nsw art. A fragment of the teuth of the Rouan tables, 450 B. C., has reference to prevsnting the burial of any gold with the dead except that bound around the teeth. Herodotus declarss that the Egyptians had a knowledgs of ths diseasss of testh and their treatment 2,000 B. C. In Martial, Cassslius is mentioned as sither filling or extracting testh, but he specified that hs would not polieh falsetseth with powder. Theee facts cover a psriod of 600 ysars.

Fatigue.—In order to uuderstand, says Leibig, the influence of an irregular expenditure of force, we need only to remember that when greatly fatigued we lose our appetits, and that when the stomach is in full activity the limbs are indisposed for performing hard work. Insufficient nourishment and fatiguing work, during the period of growth, stop the corporeal development of the individual. Ths amount of daily exercise necessary for health depsnds upon the kind of sxerciee, and varies considerably with diffsrsnt persons and with ths eame pereons at different times. A safe rule to go by ie to sxercise nntil slightly fatigued. It should not be continued so long that half an hour of psrfect rest will not entirsly remove all feeling of fatigus.

Morbin Fears.—The fixed idea of having heart-disease is a very common one. We know an Indian officer who indulged in it for twenty years, to the great annoyancs and tsrror of his wife and his friends, and who died at a good old age, with a perfsctly "sound heart," phyeically spsaking: By auscultation, doctors eari very eaeily tell you whsther ths hsart ie right, jnst as you can hear whethsr a clock is right as to its tiokings and beatings. Thsre are othsr very eure symptoms wsll known to the profeesion. Many persons also fear they have cancsr in the stomach or liver; or a taps worm, or some other dreadful malady; but gensrally thsse feare are the result of a disordered imagination, and groundlsss.—*Herald of Health.*

Micrococci in Measles and Scarlet Fever.—Dr. Hallier, well known by his researches upon the fungi as supposed agents or concomitants of disease, states in a recent papsr that measles and scarlet fever are both occasioned by the presencs of csrtain fungi in the blood, which can be seen hy the microscops in the form of minuts csll-liks sporss, called micrococcus. In ths course of treatmsnt of persons affected with the abovs diesases care was taksn to collsct the psrspiration obtained from ths patients undsr these circumstances, whioh, on bsing submitted to Dr. Hallier for examination, was found to contain the micrococcus in abundancs.

Toothache.—A correspondsnt of the *English Magazine* gives ths following curioue rsmedy: Put a pisce of quick-lime as big as a walnut in a pint of water, in a bottls. Clean ths tseth with it, evsry morning, rinsing the mouth with clean water afterwarde. If ths teeth are good, it will pressrve thsm and ksep away toothache; if the teeth are gone, it will hardsn ths gums, so that they will masticate crusts and all.

In India, whers stinging inssets and several crawling reptiles are often wounding people, they apply chloroform on lint, which spesdily allaye irritation and psrhaps nsutralizee the poison. Why not try it hsre.

Oil of Peppermint.—A writer in the *American Journal of Pharmacy* asssrts that commercial oil of psppermint is adulterated to the extsnt of thirty to forty per cent., with caetor oil and alcohol.

Take Care of Your Health.—A man too busy to take care of hie health is like a mechanic too busy to take care of hie tools.

MINING AND SCIENTIFIC PRESS.

W. B. EWER.....SENIOR EDITOR.

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ILLUSTRATIONS AND REPORTS OF MINING ENTERPRISES WANTED.—Drawings or photographs of mining works that are of general interest to our readers are solicited for publication in this journal. Official reports of Companies, and description of mines of importance, of special interest, are also desired. Sketches of any new method and discoveries will be very acceptable.

San Francisco:

Saturday Morning, July 20, 1872.

Gold and Legal Tender Rates.

SAN FRANCISCO, Thursday, July 18, 1872.—Legal Tenders buying, 88; selling, 88½. Gold in New York to-day, 114¼.

Table of Contents.

ILLUSTRATIONS.—Mountain Chain, Upper Burmah; Combined Pencil Sharpener, Holder and Twine Cutter, Page 38. Melendy's Patent Door Fastener, 41.

EDITORIALS.—Copper; Mills Destroyed, 40. Home Industries; Academy of Science, 41.

MINING SUMMARY.—Reports from mines in various States, Counties and Districts; Stock Reports; Markets, 36-7. Mining Shareholders' Directory, 44.

CORRESPONDENCE.—Notes of Travel in Lander and Elko Counties, Nevada; The "Alpine Miner" and "Metallurgist", 34.

SCIENTIFIC PROGRESS.—The Nature of Comets; Nature of the Action in Galvanic Batteries; New and Powerful Thermo-Battery, 35.

MECHANICAL PROGRESS.—Economy in Blast Furnaces; Counterpoise; Power of a Locomotive; The Future of American Iron; Stone Turning Apparatus; Improved Economy in Iron Manufacture; Liquid Fuel; Hoop Iron; Iron Mountain Ore, 35.

USEFUL INFORMATION.—The Mississippi and Niagara Rivers; Putting Grindstones in Order; What Oils will Ignite Spontaneously; Grafting Wax; Test for Japan; Tan Color; Mildew in Boat Sails; Engraving Extraordinary, 39.

GOOD HEALTH.—Increasing Longevity of Human Life; Mercury in the Human System; Necessity of Carefulness in Old Age; Drugging; Physiological Action of Quinine; Ancient Dentistry; Fatigue, Morbid Fears; Micrococci in Measles; Toothache; Oil of Peppermint, 39.

DOMESTIC ECONOMY.—Whitewashing; Tomato Sauce; Dried Figs as Food; Summer Drinks; Practical Receipts, 44.

MISCELLANEOUS.—Mines in Amador County; Rich Strike; Blatchley's Drills, 34. Coal; Glass Works; Placers in Santa Barbara; Original Amador Mine and Mill; Alcohol in Wines; Manufacture in the United States; Mountain Ranges, 38. The Next Ore Strike; Antimony, 42. Notices to Correspondents, 40. New Mining Incorporations, 41. New Incorporations; Meetings and Elections; Mining Sales, 44.

Notices to Correspondents.

A correspondent writing from Petersburg, Klamath county, asks us how geologists account for the deposits of red clayey matter so often found over the gravel channels throughout the State.

A glance at the location of the questioner's post office makes a good deal of difference in the way his question is to be answered. Red clayey deposits do not usually overlie the gravels in other portions of the State. Where reddish volcanic matter does, there may be a covering of decomposed lava—not a clay properly. On the slopes of the Sierra Nevada, red clays in association with gravel are to be accounted for like any other clays or gravels. But if red clays usually overlie gravels in Klamath county, the next question to be ascertained is, are they continuous to any distance in horizontal layers or are they only local or cuticular in character? In Weaverville basin, for example, the clays are continuous and are accounted for as a lake or subaqueous deposit. Will R. T. please inform the readers of the MINING AND SCIENTIFIC PRESS in regard to this point touching other Klamath gravels?

The New Mining Law.

With regard to the numerous queries concerning interpretations of the new mining law, we propose answering them all by publishing Commissioner Drummond's circular, which we have just received from Mr. Sargent. It gives the regulations under the new law, and contains full instructions, for registers, receivers and surveyors-general and will be of great interest to all miners. We will begin the publication of this document in next week's issue and continue it till finished.

Copper.

Copper mining has not for a long time been a very profitable business on this Coast, owing to want of facility for working the ores, high cost of transportation, high price of labor as compared with other copper-producing regions, and the fact that the importations of the metal from England and Chili are too large, and the rates too low, to admit of successful competition. It has not been the fault of the mines, for, generally speaking, the deposits are large and carry a good percentage of metal.

The advanced price of copper within the past few months, has induced some of the owners of the numerous mines on this Coast to again turn their attention to their long neglected properties, and we hear of copper mines being re-opened all over the Coast. The comparatively small lots of ore which have been extracted on this Coast for the past few years, which have not been shipped, have been disposed of to the manufacturers of blue-stone in this city, but the demand from that quarter is of course limited. The business of shipping copper ore to England was for a long time very profitable, and immense quantities were thus disposed of, almost every vessel that left carrying away a number of tons. Up to the last few years the principal shipper went from here from 15,000 to 20,000 tons per year, principally to England, but some to Boston and Baltimore. When the price of copper fell, which it did suddenly while large quantities were on shipboard, the disastrous consequences it brought upon many operators here and the long continued low prices for the product, brought copper mining on this Coast almost to a standstill.

The Copper Mines on this Coast.

The rise in the price of copper recently has now, however, caused a general revival of work in the mines of that metal and all the old dumps are being picked over for shipping ore, and some of the mines being re-opened. The Union mine at Copperopolis will shortly resume operations, and the engines are probably by this time pumping out the mine. When this is completed a large force of men will be put at work. The Newton at Copperopolis will also also shortly be producing ore. The English Company's mines at Battle Mountain, Nevada, have been producing from 20 to 30 per cent. ore for the past two or three years, which has been shipped to Liverpool. Good ore is coming out of the Globe mine, in Alpine county, Cal., and the Leviathan in the same county will probably be worked as soon as negotiations concerning its sale are completed. There are numerous ledges in Elko county, Nevada, that are being re-opened. Those near Reno which were worked some years ago will probably be opened again if the state of the market warrants it. The southern portion of the State, particularly Los Angeles county, abounds in copper ore, and Catalina Island off San Pedro, which was recently sold to capitalists for $1,250,000, contains some of the most valuable copper deposits on this Coast. The Ella mine, Elko, Nevada, has commenced work again, and begun to ship ore to this city. They have a large ledge assaying from 25 to 33 per cent. They had proposed last month to ship about 75 tons per week, but the rise in the price of freight on the railroad has interfered with their plans. We might mention hundreds of other mines and localities but the few enumerated will show that a general activity is beginning to prevail.

Other Copper Regions.

The Lake Superior copper region has never been in as prosperous a condition as most people suppose and the mines have, many of them, become idle. The local papers in that district say "that concerning the past history of this important industry the less said the better." They are now, however, like ourselves, hopeful of a change which can only be beneficial. They have had much trouble from want of proper management, lack of facility for transportation, too much stock gambling, etc., and cite many instances which find a parallel in the history of mining on this coast. The copper mines of Chili which have been producing the majority of the supply of the world for some years and which almost monopolized the business, are now beginning to evince signs of exhaustion. In that country labor was extremely cheap, the deposits very large and the mines easily worked. The ores are not now so good as they were nearer the surface and contain more iron, rendering reduction more expensive. The cost of mining is of course increased as depth is attained and the yield is falling off. The number of railroads being built there is also inducing the laborers to leave the mines since they can get better wages. The mines in Peru are no longer profitable it is said, so that the supply has decreased from that source. The English mines are not now producing anything like they have done in former years, the figures showing a great falling off. Australia, or rather the Colony of South Australia, is a famous copper producing region, the Burra Burra being the principal mine. England at present takes all the product from this quarter.

Freight by Rail.

During the month of May, the shipments of copper ore over the line of the Central Pacific Railroad were rapidly increasing, and the miners were satisfied with the results from their ore; but since that time the railroad company have seen fit to advance the rates of freight $4 or $5 per ton. This action has nearly put a stop to all kinds of low grade ores coming to this market, as rates of freight will not justify parties in shipping anything under 16 or 18 per cent. ore at any great distance from this city. The company make no distinction in regard to quality or quantity, 20 per cent. and 40 per cent. costing the same, whether one ton or one hundred. Ores shipped from Ogden or Salt Lake are delivered here nearly as cheap as they are one-half the distance on the same road; so the location of the mine makes little difference as to freight. Moreover, they will not take into consideration the fact that the shippers dispose of their ore, and make their calculations on 2,352 pounds as a ton of copper ore, but charge the same as for silver ores which sell by the ton of 2,000 pounds. This is of course an important item where any large amount is shipped.

Shippers say that if the railroad company would look at the net returns from the ores, they would see that their rates are too high to make copper mining for anything under 20 or 25 per cent. ores profitable. But they say that they cannot afford to bring them for less, so the only alternative is for the miners not to ship. Three years ago copper was not high enough to make it worth while to mine for it in many localities, and up to this month the railroad company has charged, from Elko, for instance $11 per ton. This month when 20 per cent. copper ores may be disposed of here at 3.25 per unit; 25 per cent. $3.10 per unit; and 30 per cent. ore at $3.25 per unit, the company charge $15 per ton. It seems strange that they could afford to bring it here from that locality for, $11 when it was low and now the markets are higher they cannot bring it for less than $15 per ton. A fraction of a ton is charged double rates,—$30 per ton. Such a policy on the part of the company is a questionable one for themselves for it only serves to prohibit the working of a number of mines which would otherwise make regular shipments by their line, there being no other. It is but natural to suppose that the rates of freight will continue to be in proportion to the rise or fall of the market, if the former conduct of the company may be taken as a criterion. The copper mines on the Colorado river can be made more profitable on low grade ores than those on the line of the railroads, since they can ship their ores here by sea. As far as the

Future of Copper Mining

On this Coast is concerned, the rates of freight by sea are reduced from their present price, and matters can be arranged with the railroad company in a satisfactory manner there is little doubt but that it can be made very profitable. The general impression is, that the price of copper will be high for some time, but whether it will result in any ultimate profit to holders of mining properties on this Coast remains to be seen. If the railroad company persist in raising their rates in proportion to the price of copper, then the profit will find its way into the coffers of that incorporation rather than into the pockets of the mine owners; so unless some reduction in freight occurs, the holders of low grade mines will not be benefitted to any great extent.

Freight to England is very high, and ships scarce. For cargoes of ore the same price is charged as for wheat, about $19 or $20 per ton. Ores in small quantity can occasionally be shipped for less, but at present as there is considerable offering, a full rate will have to be paid. Of course 40 per cent. and 20 per cent. ore cost the same for shipping, so high grades are preferred.

There is no other reason why we cannot make money out of the mines of this coast than the high price of freight. A great change has come over the business of mining generally, since the majority of these mines were worked, and it has come to be looked upon more as a business than a venture. Extravagance has been checked, more experienced superintendents employed, and the fact that mining has its definite business restrictions is now recognized. The "ring," which is said to exist in New York, will, no doubt, keep up the price for some time. The reports concerning it, are, however, contradictory; some saying that it has bought up all the copper in the market; others saying it has contracted for the product of all the principal mines in the United States in a certain period. It is understood that this ring has contracted, at a stipulated price, for the product of the prominent Lake Superior mines for a certain length of time (reported all the way from six to twelve months). We have not heard of any contracts having been made with any of the Pacific coast mines.

Consumption and Supply of Copper.

The consumption of copper is, it is said, increasing the world over, while the supply is not increasing, or rather it is falling off. This enlarged consumption is due to the unusually large amount of copper and brass used in the construction of locomotives, cars, etc., the manufacture of ornamental hardware, increased amount of copper pipe and pans for use in sugar refineries, distilleries, etc., large amount of metallic cartridges manufactured, the manufacture of soldering irons used in the large trade in canned goods, etc. The consumption in this country last year, which averaged over 1,320 tons per month, exceeded the supply by more than 2,350 tons during the year, showing a great increase in consumption, since it was, until the first of this year, supposed to be, as it had been for some years past, about 1,000 tons per month. The total production of the United States in 1871, was 13,500 tons, and the total consumption 15,850 tons. Chili, which exported about 52,000 tons in 1870, only sent 42,400 tons in 1871. The English mines yielded last year, it is said, only 6,500 tons. The probabilities are that the price of copper will not fall very much for some time, the influence of the tariff, the firmness of the metal market, the "ring," etc., combining to keep it up. It is to be hoped that those who are interested in this branch of mining will turn their attention to the economical working of their mines, a judicious selection of their ore, and try to induce the omnipotent railroad company to reduce rates of freight, and doubtless this long neglected branch of industry may be made once more profitable.

Mills Destroyed.

Both of the south boilers of the Petaluma mill, Gold Hill, exploded on the morning of the 15th inst., entirely destroying the mill. The Gold Hill *News* says that the boilers being connected, exploded simultaneously, the steam drum divided in the middle, one portion flying over the Sapphire mill and coming down through the roof of the Sapphire saloon, 80 yards distant, and the other half went in the opposite direction, smashing in the side of a building 200 yards distant. A large portion of one boiler was thrown over the roof of the Sapphire mill into the street. A piece of furnace front, weighing half a ton, flew into a saloon 60 yards distant. The boiler tubes flew in all directions, and several narrow escapes are mentioned. There was plenty of water in the boilers, according to the engineer's account and the gauge only showed 95 pounds of steam. It is said that the boilers were old and worn out, and have not been considered safe for the last year or so.

By this explosion, three people were killed, and several wounded. The killed were John N. Tucker, the blacksmith at the mill, John Giannini, an amalgamator, and Daniel McKenzie. James Garvey, an amalgamator, Frank Edmonds, the engineer, a fireman named Kimball, John Mullen, Frank Silva, and Frank Scales were injured. The mill was owned by Fair & MacKay, and Jones & Hayward.

Parker and Bowie's Tailings mill, in Seven Mile cañon, just below the site of the old Gould and Curry mill, was totally destroyed by fire on the morning of the 14th inst. It was built of pine, and burnt, of course, like tinder. The owners had just finished putting in a large new boiler, seven new pans, an improved 10-ton settler, etc., none of which had yet been used. The origin of the fire is unknown. The mill and improvements was valued at $100,000, and was insured for $30,000. The fire throws about 100 men out of employment. They intend putting up a fine new mill in the place of the one destroyed, and hope to have it done in six weeks.

Home Industries.

Brass and Bell Feuadiag and Finishing.

Long before iron came into use, brass and mixed metals occupied the same place in the economy of msnkind, thst iron does now. the brass founder'a trade is consequently the oldost trado in the world. And though it has sunk to a subordinato position in the great industrial array, tho infinitude of uses to which brass castings are applied, has helped to build up a vast business in it, all over the world. It has been followed long in San Francisco; the proprietors of

Garratt's Foundry

Having entered into the business in 1850, two years subsequent to tho discovery of the vast auriferous resonrces of this State. In that year, the first small establishment of the kiud, employing three men, was started iu Portsmouth Square. It was subsequently removed to Leidersdorf street, thou to Market, tben to the corner of Fromont and Mission, aud lastly to its present location on Fremont betwcen Mission and Howard. It has been burned out no less than throo timca; first, in the great May fire of 1851, whon tho proprictors lost all, and lsstly in the great firo ou Mission street, when a loss of $80,000 was sustained. But the indomitable energy of the owners surmounted all difficulties, aud uow their establishment is ono of tbe finest indnstrial ones in the city. It is two stories high, built of solid brick, aud covers a space of 75x137½. It is divided into storeroom, machine shop, and foundry, on the first story, aud tho finishing room and pattern shops on the second. A cellar uuderneath the machino shop, is filled witb tons on tons of old copper aud copper mixtures, tea-lead, tin etc., obtained from a thousand different sources. Tho number and variety of the machines used is truly surprisiug; pssing througb the establishment everywhere they meet the eye. The great number of the srticles msuufactured, renders necessary tbe employment of a vast number of tools. The work carried on is tbat of casting and finishing steam, gas, mschine, instruments, and wster-fittiugs, engineer's findings, and bell founding. The latter is s speciality, there being no other bell foundry on the coast. Tbey found church, school, steam, farm, aud plantation bells of all sizes, and from 5 lbs. up to 2,000 lbs. in weight. The first bell ever cast on the coast, was by them, cast in 1851, for the steamer Webber. They melt an average of 700 lbs. of metal per day, or about 250,000 lbs. a year; of this, ¼ is copper. They have eigbt furnaces which possess a melting capscity of about 1,600 lbs. per day, but only about half of tbese are generally at work. They employ sixty men and boys, and do an annual trade of at least $150,000. Of

Ths Other Foundries,

Greenberg's on Fremont street, between Howard and Folsom, employs at present, ten men, and snpplies a lsrge amount of unfinished castings to the trade generally. Its specialty lies in the msnufacture of steam, engineer's and boiler fittings, steamboat and brewery work. It has been established since 1853. It melts about 300 lbs. of metal per day.

Weed & Kingwell, First street, are constantly employed in the manufacture of plumbers' work, for tho hardware stores, and in that of N. Siebbert's Eurcka lubricators. They have thirty men at work, and are constantly busy. Of the lubricators they made last year 250, which, selling at at from $30 to $40 each, made this item alone, of the value of about $9,000. They melt 100 lbs. of metal per day.

Dobrzensky, on Mission street, has a specialty in the manufacture of gas machines, meters, and fixings. He also is busily employed, running 30 men. A great part of the work of the Metropolitan Gas Co. is done here, but the City Gas Co. prefer to import from tbe East.

The Metals

Used iu the business are copper, tin, zinc, lead, antimony and bismuth mixed in hundreds of different proportions, according as the work for which they are destined is used in air, water, etc. The same article requires different mixtures of metal in the preparation of its mountings, according to the locatiou aud temperature. Much of the copper is mined in California and sent to New York to be refined, and then comes bsck to the brass foundry, suggesting the necessity of having reduction and refining works established in the State. Owing to the rise in its price throughout America generally, an impetus bas been given to to copper mining on this coast, both at Copperopolis and Crescent City. All the other metals, save tho lead in a small proportion, are foreign. The

Melting

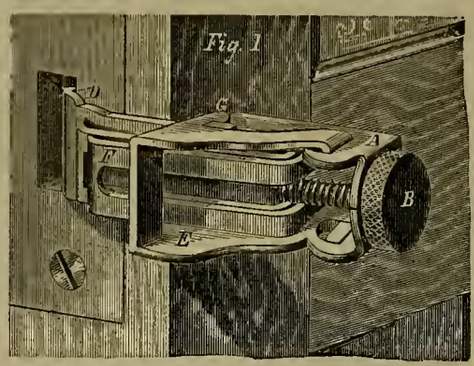
Is performed in crucibles contaiuing about 100 pounds each, for small qnantities, and cupel having a capacity of 1,500 pounds each for large ones. Tho copper reqniring the greatest heat, is melted first, and theu tho other metals are added, those requiring the greatest temperature being put iu first. The melted copper dissolves them almost instantly.

Synopsis.

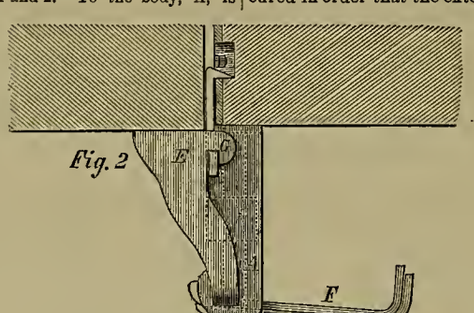
This city hoasts four brass foundries and finishing establishments, employing 130 mechanics and hoys, the former being paid at an avorago of $3 per day, and melting 1,350 pounds of metal daily. Tho valuo of the manufacturo is ovor $300,000 yearly, and employs a capital invested of about $110,000.

Melendy's Door Fastener.

This littlo devico seems to us to meet the requirements of a good door fastener more fully than anytbing of tho kind wo have met with. It is very cheaply made, and holds the door to



wbicb it is applied very securely, without marring the casement. It consists of a body, A, Figs. 1 and 2, of strong sheet metal, which carries a strong adjusting screw, B. Tbe screw plays in a nnt C, shown in dotted outlines in Fig. 2, and formed on the end of the strong claw, D, Figs. 1 and 2. To the body, A, is



MELENDY'S PATENT DOOR FASTENER.

loosely pivoted the bracket E, Figs. 1 and 2. The parts lettered F, are called compensators. and their use will be subsequently described.

Now to fasten the door, the claw is placed in the mortise of the bolt plate of the lock, as shown in both figures, the pivoted bracket being turned back, so that the door will pass it in closing. Then the door being closed, as shown in section in Fig. 2, the bracket is turned down into the position shown, slipped back on its pivots so that the hook G engages lugs formed on the body A, and the screw is then turned until tbe bracket abuts firmly against the door, as shown in Fig 2.

The compensators, F, wheu not ucded, are slipped back as shown in Fig. 2; but when the crack between the edges of the door and the casing is too wide to hold the claw firmly, one or both of them are placed in position, as shown in Fig. 1, so as to fill up the space and press and hold the claw firmly into the mortise of the bolt plate when the door is closed.

When a door is uuprovided with a lock, the claw may be made to engage the wood or a crack in the joining of the casemont, iu which last case the casement will not be defaced. It is small and convenient for travelers to carry in the pocket.

Patented March 12, 1872, by B. H. Meleudy, whom address, for further information, box 125, Amherst, N. H.

Academy of Sciences.

The regnlar semi-monthly meeting of the California Academy of Sciences was held on the 15th inst.

Donatiens.

A large number of very valuable donations were received, among which were a nnmber of pampblets, one of which on geology, etc., by Dr. L. W. Schaufuss, of Dresden, which contained a handsome compliment to Samuel Brannan, Jr., a member of the Academy, for his energy in collecting specimens, etc., saying that he had beon more thau three years in California and had collected many interesting specimous and bronght together much valuable material. A number of papers, translatod from theso pamphlets by Dr. Stout, were read by the Secretary.

Dr. Kellogg presented a large collection of botauical and conchological specimens, principally the former, among them quite a nnmber of new ones. They amonnted to abont a wagon load in bulk. Among the collection were a number of lichens and mounted mosses. Dr. Stout remarked that this single donation almost amonnted to a distinct collection, and suggested that enlarged accommodations shonld be procured in order that the extensive collection of the flora and fauna of California, which belonged to the Academy, could be made available for oxamination. W. J. Fisher presented to the Academy twenty-seven specimens of shells from the Samoa, Fiji and Sandwich Islands. John Williamson, Secretary of the California Acclimatization Society, presented a specimen of the rock-bass *(Centrarchus Aeneas)* from New York. A quantity of these fish had been sent here from Seth Green, the famous pisciculturist, a large number of which had died on the way. They have some living, however, in the Sooiety's ponds at San Pedro Point.

Our Iron Resources.

Dr. Stout said that an erroneous impression had gone forth that the Academy was not practical; that they talked about plants, bugs, etc., but gave the people no practical ideas. He said that idea was entirely wrong and that he had an important matter to bring before the geueral public which alone would prove that its object was more than mere discussion, etc. An item, called "Our English View of Our Shipping Trade" was then read, which answered as a preface to the Doctor's remarks. He said that one of the most important things for this State to foster was her iron interests and manufactures. An enormous price is now paid for imported iron while there were vast fields of it lying idle at our very doors. He knew of a place within 50 miles of San Francisco at which magnetic iron could be procnred by the thonsands of tons. A flask of this iron was exhibited in small grains just as it came from the bed. It assays about 73 per cent. of pure iron of the best qnality. One cnbio inch carefnlly measured, weighed one and a half ounces.

Whers this Mass of Irea Comes From

Is an interesting one. Is it a volcanic emanation from the bottom of the sea? Is it a crystallization? Dr. Stout's theory of the formation of this iron sand was that it came from tho bottom of the sea in the form of vapor, probably from a volcanic origin, and became condensed in the form of crystals by contact with the cold water. It has been proved by spectrum analysis that iron in the form of vapor exists in all places in the world's atmosphere, and the Doctor believed that the condensation of these vapors account for meteoric iron. This deposit of iron was extensive and available, and if the proper persons, with capital, took hold of it, it would be of great benefit to the State. He said this suggestion was practical, and the public cannot find fault with the Academy for not calling attention to it.

Dr. Stout's remarks canscd an interesting discussion among the members, which, unfortunately we have not space to give this week, but will publish in our next issue.

New Mining Incorporations.

We give below a tabular statement which we have preparod, of the number, capitsl, location snd shares of the uew mining incorporations which were organized duriug tbe first six months of this year. Of these, 14 were formed in January, 8 in February, 31 in March, 64 in April, 69 in May and 15 in June. The totsl number is 201, embracing a cspital (on paper) of $558,000,000, divided into 4,815,950 shares. It will be observed tbat of this number 126, or nesrly two thirds are located in Nevada, representiug over two thirds of the cspital stock. Much tbe lsrgest part of this immense sggregste may no doubt be attributed to tbe receut stock excitement in this city. What influence tbis lsrge increase of *stock* may have upon legitimate mining, it is difficult to say; but the accompanying table cannot fail to be very suggestive of the great and general interest which is being tsken by the community in the great leading industry of the Pacific Coast.

Location.	Incor.	Cap. Stock.	No. Shares.
California.			
Amador County	3	$4,750,000	72,500
Butte "	1	1,200,000	12,000
Calaveras "	5	11,300,000	113,000
El Dorado "	8	21,300,000	200,000
Inyo "	1	2,500,000	50,000
Kern "	1	500,000	6,000
Laseen "	1	5,000,000	50,000
Mariposa "	1	5,000,000	50,000
Mono "	1	5,000,000	50,000
Napa "	1	300,000	30,000
Nevada "	5	10,000,000	131,000
Placer "	4	8,000,000	80,000
Plumas "	4	7,000,000	55,000
S. Lu. Obis "	1	5,000,000	50,000
San Diego "	1	5,000,000	50,000
Sierra "	2	3,000,000	34,000
Tnolumne "	1	3,000,000	80,000
Location not stated	3	6,000,000	56,000
Total	45	$104,950,000	1,159,500
Nevada.			
Ely Dist., Lincoln Co...	34	$92,350,000	929,200
—— Lincoln Co...	4	10,500,000	105,000
Devil's Gate D., Lyons Co	4	11,100,000	111,000
Coleman's D., Lyons Co.	1	1,500,000	15,000
Eureka D., Lander Co...	9	36,500,000	395,000
Gold Hill D., Storey Co..	27	79,700,000	37,000
Virginia D., Storey Co..	8	17,000,000	222,000
Flowery D., Storey Co..	1	3,000,000	30,000
—— Storey Co..	9	16,500,000	202,000
Philad'a D., Inyo Co....	2	9,000,000	90,000
Bristol D., Inyo Co.....	1	3,000,000	30,000
Twin River D., Inyo Co.	1	8,000,000	80,000
—— Inyo Co.....	1	5,000,000	50,000
White Pine D., W. P. Co.	3	9,400,000	94,000
Schell Creek D., W.P. Co.	4	13,000,000	130,000
Ruby Hill D., W. P. Co..	1	3,000,000	30,000
Sacramento D., W. P. Co.	1	5,000,000	50,000
Railroad D., Elko Co....	2	3,000,000	37,000
Hot Spr'g D., Humb't Co	1	8,000,000	30,000
Humboldt Co.....	1	3,000,000	30,000
Esmeralda Co.....	2	7,850,000	78,500
Columbus D.....	1	5,000,000	50,000
Truckee D.....	1	2,000,000	20,000
Silver Star D.....	1	4,000,000	40,000
Location not stated.....	6	18,300,000	183,000
Total.....	126	$365,500,000	3,018,700
Utah.			
Little Cottonwood.....	5	23,500,000	25,000
Camp Floyd.....	2	5,500,000	80,000
Tintic.....	1	3,000,000	30,000
Ophir.....	1	3,000,000	30,000
Location not stated.....	5	11,000,000	160,000
Total.....	14	$45,000,000	226,000
Arizona.			
Wallapai District.....	5	$15,700,000	157,000
Idaho.			
Location not stated.....	3	$8,450,000	52,750
Lower California.			
Location not stated.....	1	$200,000	20,000
General Mining Business.			
Location not stated.....	6	$15,200,000	152,000
Summary.			
California.....	45	104,950,000	1,159,500
Nevada.....	126	365,500,000	3,018,700
Utah.....	14	46,000,000	226,000
Arizona.....	6	15,700,000	157,000
Idaho.....	3	8,450,000	62,750
Lower California.....	1	200,000	20,000
General Mining.....	6	16,200,000	152,000
Total.....	201	$558,000,000	4,815,950

DOMESTIC ECONOMY.

Whitewashing.

So simple a thing as preparing a wash and putting it on walls and fences may not seem worth notice, yet we all know that the "Women folks" complain about bad work in whitewashing, and "men folks" as a rule, think the matter so simple that they do not care to know whether there is science or "coarse hand" work done to produce a nice job of whitewashing. Now we advise all men who have at any time come across these troubles to cut from this column the following process, and when next they are called upon to attend to any whitewashing, to observe it carefully. They will find a great burthen lifted from their minds from a trifling cause, and in a trifling operation, if they conform to a scientific instead of a blundering method of

Doing Whitewashing.

The best whitewash contains no quicklime at all, but is made of pure whiting, which is a soft kind of chalk, ground very fine, washed so as to separate all the coarse and gritty particles, and formed into lumps in the process of drying. Good whiting, beaten up with water so as to form a milky liquid free from lumps, and mixed with a little good strong size, forms a whitewash that cannot be rubbed off, and will give a very brilliant white surface. This is substantially the material known as Kalsomine, something old but never appreciated until it received a high sounding name. The whiting used to make this whitewash or kalsomine, is sometimes called Spanish white, Paris white, etc., etc. They are all the same thing, and the only point is to select the finest and whitest material offered to you, and take it under any name the vendor chooses to sell it, provided he does not ask too much for it, for it is only whiting after all. Some receipts name Sulphate of Baryta, a beautiful white powder, as the only material for making kalsomine. It answers very well, but is not easily procured, and more than half the time common whiting is sold for it. The size for mixing with the whiting is most easily prepared from glue, and as it is necessary that the whitewash should be permanent and as little liable to decay as possible, we must select a good article of glue. Directions upon this point could not be easily followed by housekeepers; let us therefore advise them to go to a respectable dealer and buy the best. Professional artists in the science of kalsomining, generally use the cheapest, and most recipes direct the use of a cheap article, but it will be found that it is most judicious to use the very best. The better the glue is, the less liable is it to decay in damp weather, and thus create disease. Moreover, when it is good, less of it is required, and the less glue you use, the purer will be the color of your kalsomine. To prepare the glue, soak it in water over night—not any longer, however, or it will begin to decay. It will absorb water and swell up, but will not dissolve. Pour the water off, add a little fresh, and boil until it forms a thin fluid. Beware of burning it, and to avoid this, the glue is best melted in a tin pail, set in an iron pot which contains some water. The whiting having been mixed with boiling water, as previously directed, the melted glue is added, and the whole diluted with hot water until it is of the consistency of ordinary whitewash. A quarter of a pound of good glue to eight pounds of whiting, is a very good proportion. It should be applied while hot, with a common whitewash brush. Owing to the fact that in damp places glue easily decays and produces poisonous vapors, kalsomine should not be used in damp basements or cellars. Any color may be given to this material, and in Europe many houses have the walls finished with light shades of pink, blue, green, etc., instead of paper, and the effect is very pleasing.

When walls have been previously covered with successive coats of common whitewash it will be necessary either to remove this or "kill" the lime. After taking off all that will come away by scraping and washing, the wall should be washed with a solution of vitrol—two ounces dissolved in a pail of water. This will "kill" the lime; in other words the white vitrol will be decomposed, and the wall be coated with plaster of Paris and white zinc, to which the kalsomine will adhere very readily. If these precautions be not taken, the kalsomine will very probably peel off.—*Manufacturer.*

TOMATO SAUCE.—The Melbourne *Leader* gives the following recipe:

Take forty pounds of tomatoes, wipe clean, and boil or bake till soft; then squeeze through a sieve that will retain the seeds and skins. Boil for an hour in order to get rid of some of the watery portion, and then add half a gallon of best brown vinegar, 1½ lbs. salt, 2 oz. cloves, 3 oz. allspice, 2 oz. cayenne pepper, 3 lb. white sugar, 4 oz. garlic and 2 oz. black pepper. Boil a sufficient time; two hours will usually suffice, but the sauce will not be boiled enough until it has become tolerably thick, and all the watery appearance has gone. Bottle without straining into perfectly dry bottles, and cork them securely when cold. The garlic must be peeled, bruised and tied up in a bag; all the spice must be ground; the quantities may be increased or diminished according to taste. We have kept sauce made from this receipt three years.

Dried Figs to Substitute Bread.

Chemists who have given the matter consideration are agreed as to the high nutritious quality of figs.

The richness of the fruit in saccharine matter offers a material equal to the starch of wheaten bread in a directly soluble form, which is more congenial to the human system. On the other hand, the oily and nitrogenous compound in the dry fig do not rank nearly so high as in wheaten bread. But these deficiences of gluten (and oil), so essential agents to nutrition may be easily made up by meat; and by calling on the animal kingdom for more fat and nitrogenous food may get the greatest benefits from the fig family.

The great facility which the climate of California affords for raising this nutritious fruit should encourage its more general use here. The people of every climate should accustom themselves to the more general use of such fruits as are suited best to such climates. The testimony of science, and the history and customs of many nations, both ancient and modern, teach us the economic and health giving nature of the fig as food.

In the Bible, figs are mentioned as amongst the food of man, and the tree, by its abundant yield of fruit and its protecting shade, whilst giving place to many a beautiful simile, is also made the emblem of domestic felicity. In one passage we have figs mentioned as provision in war, and a famishing Egyptian in the routed Edomite camp was nourished and invigorated by the fig-cake and raisins given him by the Israelitee. As there can be no doubt of the Israelites having an eye to the portability, as well as the nutritiousness of the life-sustaining provisions they carried with them in the war, the fact of dry figs and raisins having been amongst their most valued supplies would proclaim such fruits well worthy of our serious attention.

Nor have we many difficulties in the way. Nature has highly developed the fig tree in California, and thus gives us a broad hint of what we might do by way of more thoroughly economizing its product; the fig is already grown extensively, but not as it deserves to be.

The fig-tree with us requires but little culture, and an acre or so devoted to it on any farm would certainly prove a great acquisition of comfort, and a saving of money.

The fig-tree is long-lived, specimens some hundreds of years of age being known even in Britain. It claims naturally drained land, hill sides, or artificial drainage as a leading feature of its sucessful establishment. For home consumption the fruit may be sun or stove dried, and when dry may be packed and pressed away in boxes or barrels.

Summer Drinks.

Ice water should be drank but sparingly. A most excellent substitute for it is pounded ice taken in small lumps into the mouth and allowed to dissolve upon the tongue. This will prove very refreshing and much more enduring in its effects.

Lemonade is a simple and grateful beverage. To make it: Roll the lemons on something hard until they become soft; grate off the rinds, cut the lemons into slices and squeeze them in a pitcher (a new clothes-pin will answer for a squeezer in lieu of something better;) pour on the required quantity of water, and sweeten according to taste. The grated rinds, for the sake of the aroma, should be added too. After mixing thoroughly, set the pitcher aside for half an hour; then strain the liquor through a jelly strainer, and put in the ice.

Travelers who find it inconvenient to use lemons can carry a box of lemon sugar prepared from citric acid and sugar, a little of which in a glass of ice-water will furnish quite a refreshing drink, and one that will help oftentimes to avert sick-headache and biliousness. Citric acid is obtained from the juice of lemons and limes.

Perry is a delicious beverage made from cherries, and will keep a year or more. Take six pounds of cherries and bruise them; pour on a pint and a half of hot water, and boil for fifteen minutes; strain through a flannel bag, and add three pounds of sugar. Boil for half an hour more, or until the liquid will sink to the bottom of a cup of water (try it with a teaspoonful of the liquid); then turn it into jelly cups and cover with paper dipped in the white of an egg.

To prepare the drink: Put a spoonful of the jelly into a goblet of water, and let it stand about ten minutes; then stir it up and fill with pounded ice. Currants and raspberries made into "shrub" furnish a pleasant and cooling drink when mixed with ice-water. Pounded ice is also an agreeable addition to a saucer of strawberries, raspberries or currants. Pound it until it is almost as fine as snow, and spread it over the berries. With fruit it is also an excellent substitute for cream.

Water ices are always acceptable. Those made of lemon, orange, currants, strawberries, and pineapple, are much improved by adding the stiff beaten whites of four eggs to every two quarts of the liquid. Put it in just as it is turned into the freezer, and it will freeze in a foam.—*Scribners' for July.*

SILVER POLISH.—Very many, indeed most of the compounds sold by itinerant venders for silver polish, are not only worthless for silvering purposes, but positively injurious, from the fact that they contain mercury. The following receipt will enable any person to give to a piece of brass or copper a thin coating of silver, and this without the aid of heat. Take of nitrate of silver, 30 grains; common salt, 30 grains; cream of tartar, 3½ drms. Grind together thoroughly, and when you wish to apply it, moisten it with a little water, and rub on the article with a piece of buckskin or other soft leather. Remember, however, that the coating thus imparted is very thin, and will not bear much wear or hard usage. It is valuable for coating the scales of instruments like thermometers, as it gives a dead-white silver surface that shows the figures plainly, and when varnished with some colorless varnish it lasts a long time.

GREEN POTATOES.—The *Food Journal* gives its opinion on the use of green and air-exposed potatoes after the following style: "Even a short exposure to air and light spoils potatoes for food. The use of potatoes is a preventive against scurvy, if not an actual cure for it. Potatoes that have been exposed to the air, and have become green are unwholesome; and new potatoes—unripe ones—have much to do with the prevalence of cholera and such like diseases during the summer months."

Practical Receipts.

CREAM PIE.—1 pint milk, 1 cup sugar, 2 eggs, ½ cup flour. Flavor to taste. Equal to custard.

KEEP sweet oil in a cool place if you wish to retain its sweetness for any length of time in warm weather. The oil should be supplied to the castor daily, and all returned to the bottle that is not used.

TOMATO CUSTARD.—This is said to be a beneficial diet for consumptives. It is made by straining finely stewed tomatoes through a course seive, and adding two pints of milk and one pint of tomatoes, four eggs, one teaspoonful of sugar. Bake in small cups quickly.

FROSTING FOR CAKE.—Beat the white of an egg until you can turn the plate over without the egg running off, then add five heaping tablespoonfuls of pulverized sugar, and one of starch. This quantity will frost one small cake. Flavor to taste.

WAY TO COOK CHEESE.—Cut a quarter of a pound of cheese into small slices, and boil a minute in a teacupful of water; beat one egg and tablespoonful of flour together, adding gradually one pint of milk, pour into the boiling cheese and stir, which after a minute's cooking is fit to serve for a supper relish.

BLACK CURRANT JELLY.—To each pound of pickled fruit, allow one gill of water; set them on the fire in the preserving pan to scald, but do not let them boil; bruise them well with a silver fork or wooden spoon—take them off and squeeze them through a hair sieve; and to every pint of juice allow a pound of loaf or raw sugar; boil it ten minutes.

HAM TOAST.—Chop some ham (which has been previously dressed) very small, and to a large teaspoonful of it add an egg well beaten up, a small bit of butter, and a little cream. Have ready some neatly cut pieces of bread, about the size of a silver dollar, but a little thicker, fried in good butter; spread the mixture on these, and serve them on a napkin.

TO MAKE THE MOCK CREAM.—Put one pint of milk over the fire, wet a tablespoonful of corn starch or maizena in a very little cold milk, add one egg, one large tablespoonful of white sugar, one-fourth teaspoonful of salt, and a little lemon, rose water or nutmeg. When the milk is ready to boil, stir in the mixture and let it boil about two minutes, taking care that it does not burn on. Let it get cold before filling the tarts. Corn starch is so largely adulterated now that sometimes a tablespoonful may not be quite enough, but one trial will determine it.

LOBSTER AND FISH SALADS.—A very nice and elegant dish may be made with all kinds of cold fish, and some kinds of shell-fish. The following way of dressing is for a small lobster-salad, and will do for all fish salads: Have the bowl half filled with any kind of salad-herb you like. Then break a lobster in two, open the tail, extract the meat in one piece, break the claws, cut the meat of both in small slices, about a quarter of an inch thick; arrange these tastefully on the salad; take out all the soft part of the belly, mix it in a basin with a teaspoonful of salt, half a one of pepper, four of vinegar, four of oil; stir it well together, and pour on the salad; then cover it with two hard eggs, cut in slices, a few slices of cucumber, and, to vary, a few capers and some fillets of anchovy.

MUTTON SOUP.—Cut a neck of mutton into four pieces, put it aside, take a slice of the gammon of bacon, and put it in a saucepan with a quart of peas, with enough of water to boil them; let the peas boil to a pulp, and strain them through a cloth; put them aside, add enough water to that in which the bacon is to boil the mutton; slice three turnips, as many carrots, and boil for an hour slowly; add sweet herbs, onions, cabbage and lettuce, chopped small; stew a quarter of an hour longer, sufficient to cook the mutton, then take it out, take some fresh green peas, add them, with some chopped parsley, and the peas first boiled, to the soup; put in a lump of butter rolled in flour, and stew till the green peas are done.

The Next Ore Strike.

Now that the great ore deposit of the Crown Point and Belcher mines has become so well developed and defined, a natural anxiety exists as to which will be the lucky mine in which a similar rich and extensive body will be found. So far as at present known, the next best indications of such deposit, outside of the Yellow Jacket, lie at the bottom of the Savage and Hale and Norcross mines, yet the promises in that direction are nothing as compared with those given in the Crown Point from the very first.

The Gould and Curry, nor the Ophir show anything very encouraging at the lowest levels, and the good, excellent paying ore bodies of the Chollar-Potosi are all in the old upper part of the mine, nothing whatever having been found in the deepest explorations. It may be that it is now the turn of the Imperial-Empire to "strike it," and indeed the result of the present deep explorations are watched with eager interest.

These explorations are now where good bodies of ore ought to exist, even though they do not, and in the long distance which the drifts have to run in passing through the ledge to the east wall, something good in that line ought surely to be developed. We notice, however, that the good bodies of ore generally run in clusters, or in the vicinity of each other, therefore we incline to the opinion that the deep explorations of the Yellow Jacket, Kentuck, or Overman, on either side of the Crown Point and Belcher deposits are more liable to develop similar deposits than any other mines farther remote. However, time will show. *Gold Hill News, June 27.*

ANTIMONY.—Zuck & Hoover and M. E. Hunter, of this city, have discovered a rich antimony mine about twenty-six miles southeast of this city. They have had workmen prospecting and developing the mine for several months. Vast deposits—in fact the entire mountain for hundreds of yards is rifted with rich veins of the ore. Mr. Zuck had an assay made this week, the result of which exceeded his most sanguine expectations.—*Gilroy Advocate.*

THE Pacific Railway Companies have certainly been very liberally treated by the United States Government. Bonds amounting to $64,623,512 have been loaned to them on which interest amounting to $1,938,705.36 has accrued and not yet been paid. Though other bills granting subsidies in land and money were brought before the last Congress for other roads, we do not think any were passed.

CINNABAR has been discovered about 50 miles north of Salem on the headwaters of the Mollato, in Oregon.

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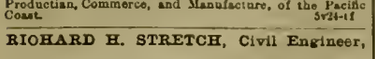
O. MULLER, Optician,
135 Montgomery street, near Bush, Russ Block, opposite the Occidental Hotel.

JOHN ROACH, Optician,
429 Montgomery Street,
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Surveying Instruments made, repaired and adjusted 22v17-3m

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Stair Builder, Wood Turner, and
SCROLL SAWYER,
No. 485 Brannan Street.....SAN FRANCISCO.
And No. 9 Q St., bet. First and Second, 21v23-tf SACRAMENTO.

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BARTLING & KIMBALL,
BOOKBINDERS,
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Manila Rope of all sizes. Also, Bale Rope and Whale Line constantly on hand. Tarred Manila Mining Ropes of any size and length manufactured to order.
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J. F. PAGES,
SEAL ENGRAVER,
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Brass and Steel Stamps and Dies, 608 Sacramento street, San Francisco. Orders by express promptly attended to.

The Merchants' Exchange Bank
OF SAN FRANCISCO.
Capital, One Million Dollars.
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No. 415 California street, San Francisco.
25v20-qy

FRED. KRAJEWSKI,
MANUFACTURER OF TOOLS
—FOR—
Molding, Turning, Carving, Etc.
Mortise Chisels, Blind Chisels, Crotchet Chisels, and also all kinds of Screws for Stair Work and Sash Joints on hand and made to order.
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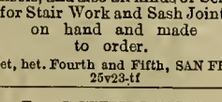
PIONEER
Meerschaum Pipe Manufacturer,

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The first and only Manufactory on the Pacific Coast. MEERSCHAUMS MOUNTED WITH SILVER. Meerschaum Pipes Boiled and Repaired. Amber Mouth-pieces Fitted.

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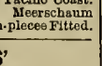
GRAND, SQUARE AND UPRIGHT.
Pianos to Let.

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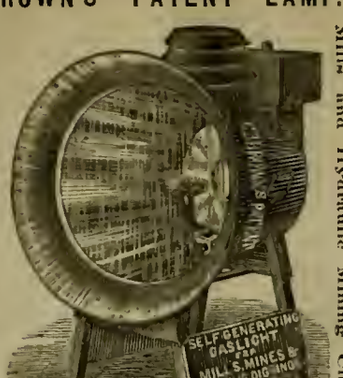
ma18-tf Opposite old Capitol, SACRAMENTO.

BROWN'S PATENT LAMP, FOR Mines and Hydraulic Mining Claims.


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One of these Lamps, when placed at a distance of 200 feet from the bank, will light up a bank surface 250 feet in length and 100 feet high, and to a much better advantage than any other light heretofore tried, and at an expense not to exceed five cents per hour. Lamps furnished at short notice.
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STROUDSBURG, PA.,
Sole Manufacturers of
THE TANITE EMERY WHEEL,
And builders of Emery Grinders, Saw Gummers, Etc., Etc.
Emery Grinding Machines,
At $15, $30, $50, $75, and $110. DIAMOND TURNING TOOLS, $15 each.
SOLID EMERY WHEELS,
From 40 cents to $113 each.
Every IRON FOUNDER can save money by using these Wheels to grind the sprues and gates off of castings. Every MACHINIST can save money, files, and labor, by using them to shape his lathe tools, to grind off chilled edges, to finish nuts, etc., etc. Every BRASS WORKER can use them on Brass. Every WOOD WORKER can use them to gum his saws, to sharpen his planer knives, to make his moulding cutters. For illustrated circulars address THE TANITE Co., Stroudsburg, Monroe county, Pa.
13v24-tf

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OF CALIFORNIA.
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OFFICERS:
JAMES GAMBLE, President. | L. A. BOOTH, Treasurer.
EXECUTIVE COMMITTEE:
N. W. SPAULDING, GEORGE C. POTTER, N. P. PERINE.
This Company will contract to furnish or put up the heaviest, strongest and most elaborate and elegant Fire-proof Stone Fronts, of any design, and every style of Plain and Ornamental Door and Window Caps, Keystones, Sills. Water Tables, Coping Ashlars, Plain and Ornamental St no Work of every description. Fire-proof Buildings and Bank Vaults, Cemetery Work, Curbing Stones, Fountains, etc., all at prices far below native cut stone, and equal, in all respects, as to strength and durability.
Architects and Builders, before letting their contracts for Stone Work, are requested to call at the office of this Company, and examine certificates, specimens and photographs of buildings already constructed of Frear Stone in Chicago and other Eastern cities.
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AGENTS FOR
Thomas Firth & Sons' Cast Steel.

MANUFACTURERS OF
Sledges, Hammers, Stone Cutters', Blacksmiths' and Horse-Shoers' Tools.
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10v14qr

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MANUFACTURERS, IMPORTERS AND DEALERS IN
GLUE, CURLED HAIR,
—AND—
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Store.....408 Market Street,
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21v24-3m

Dupont's Gunpowder, Safety Fuse,
—AND—
WINCHESTER REPEATING ARMS.
DUPONT'S Superior Mining Powder (saltpetre), F FF-FFF.
DUPONT'S Blasting Powder, in air-tight corrugated Iron Kegs, C-F-FF-FFF.
DUPONT'S Celebrated Brand, Diamond Grain, Nos. 1 2, 3 and 4, in 1 lb. and ½ lb. canisters.
DUPONT'S Unrivalled Brands, Eagle Duck and Eagle Rifle, Nos. 1, 2, 3, in half kegs, qr. kegs, 5 lb. tins, and in 1 lb. and ½ lb. canisters.
DUPONT'S Standard Rifle, Fg-FFg-FFFg, in kegs, half kegs and qr. kegs, and in 1 lb., ½ lb., and ¼ lb. canisters.
DUPONT'S Superior Rifle, A. F. & Co., F-FF-FFF, in kegs, half kegs, qr. kegs, and in 1 lb., ½ lb. and ¼ lb. canisters.
DUPONT'S Cannon, Musket, Meal and Fuse Powder.
EAGLE SAFETY FUSE (manufactured near Santa Cruz, Cal. by the L. S. & P. Co.) Constantly on hand full supplies of their Celebrated Brands, Waterproof and Submarine, Triple Taped, Double Taped, Single Taped and Hemp Fuse. Fuse made especially to explode the Giant Powder and Hercules Powder Caps. The above named Fuse are warranted equal to any made in the world.
WINCHESTER REPEATING ARMS (Henry's Improved) and FIXED AMMUNITION.
A large and complete stock of these celebrated arms constantly on hand, to wit:
Repeating Sporting Rifles—Oiled Stocks.
Repeating Sporting Rifles—Varnished Stocks.
Gold, Silver and Nickle-plated Rifles—beautifully Engraved.
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Repeating Carbines—Gold, Silver and Nickel-Plated and Engraved.
Muskets—Angular or Sword Bayonets.
Full stock constantly on hand of all the different parts of the Winchester Arms.
Cartridges in cases (Brand H), manufactured by the W. R. A. Co. expressly for their arms.
A full and complete stock of the above named merchandise always on hand and for sale by
JOHN SKINKER, Sole Agent,
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The California Powder Works
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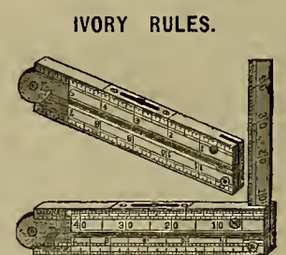
Manufacturers and have constantly on hand
SPORTING,
MINING,
And BLASTING
POWDER,
Of SUPERIOR QUALITY, FRESH FROM THE MILLS. It being constantly received and, transported into the interior, is delivered to the consumer within a few days of the time of its manufacture, and is in every way superior to any other Powder in Market.
We have been awarded successively
Three Gold Medals
By the MECHANICS' INSTITUTE and the STATE AGRICULTURAL SOCIETY for the superiority of our products over all others.
We also call attention to our
HERCULES POWDER,
Which combines all the force of other strong explosives now in use, and the lifting force of the BEST BLASTING POWDER, thus making it vastly superior to any other compound now in use.
A circular containing a full description of this Powder can be obtained on application to our Office.
16v20-3m JOHN F. LOHSE, Secretary.

STEPHENS & CO.,
MANUFACTURERS OF
U. S. STANDARD BOXWOOD AND IVORY RULES.

ALSO EXCLUSIVE MANUFACTURERS OF
L. C. Stephens' Patent Combination Rule.
This cut represents the COMBINATION RULE, which comprises a Foot Rule, Spirit Level, Try Square, Bevel, Plumb, Slope Level, Etc.
It is made of the very best quality of Turkey Boxwood, heavily bound with brass, and is graduated with mathematical accuracy.
The Square is adjustable, and can be tested and made perfectly true by the aid of a small screw-driver, but this is seldom required.
In its application as a Slope Level it is especially adapted for Miners' use, as it shows the PITCH TO THE FOOT, and DEGREE OF INCLINATION at once. It is six inches long when folded, by one and three-eighths wide, and three-eighths inches thick, the cut being just one-fourth size.
"By the use of one of these, a builder, mason, carpenter, or other workmen, can always have in his pocket the most valuable of his apparatus used in construction, combined in a portable, useful and cheap form."—*Scientific American.*
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$1,000 REWARD! For any case of Blind, Bleeding, Itching, or Ulcerated Piles that De Bing's Pile Remedy fails to cure. It is prepared expressly to cure the Piles and nothing else. Sold by all Druggists. Price $1.00.
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By this invention, one man, with one horse and five cars, does the work of ten men, ten horses and ten carts.
Highly Approved by all who Use Them.
CARS AND TRACKS FOR SALE OR TO LET.
Samples at the office. Illustrated Circulars free.
State and County Rights for Sale.
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ROCK DRILLS
AND
AIR COMPRESSORS.
The Burleigh Rock Drills, which have stood the test of five years constant use at the Hoosac Tunnel, and which are now in use in nearly every State in the Union, as well as in Europe and South America, are unequalled in efficiency and economy by any other Drilling Machine. They are of various sizes, and equally well adapted to Tunnelling, Shafting, Open Cut or Quarrying, and will drill six to ten inches per minute in granite. They are driven by steam above ground, or compressed air when under ground. The Burleigh Air Compressor is the best engine yet devised for furnishing the "air motor" for the many purposes to which it is now being applied.
Send for illustrated pamphlet to
BURLEIGH ROCK DRILL CO.,
FITCHBURG, MASS.
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REMINGTON'S
BREECH-LOADING
Sporting, Hunting, and Target Rifles.
Same system as the "Remington" Celebrated Military Rifle, of which over half a million have been sold. Its simplicity unsurpassed. For strength and durability unequalled. In accuracy unrivalled. In range, penetration, and ease of manipulation, without comparison.
The "Sportsman's" Delight, the "Hunter's" Favorite, the "Target-Shooter's" Pride. Also
REVOLVERS FOR HOUSE USE.
In these days of thieves and Burglaries, every householder should have a revolver for home protection.
REMINGTON'S RIFLE CANE.
Every gentleman should have one for protection against dogs and rowdies, and for field use.
E. REMINGTON & SONS,
19v24-6m 193 Broadway, N. Y.

SHEET IRON PIPE.
THE
Risdon Iron and Locomotive Works
Corner Howard and Beale Streets,
Are prepared to make SHEET IRON AND ASPHALTUM PIPE, of any size and for any pressure, and contract to lay the same where wanted, guaranteeing a perfect working pipe with the least amount of material.
Standard sizes of railroad Car Wheels, with special patterns for Mining Cars. These small wheels are made of the best Car Wheel Iron, properly chilled, and can be fitted up with the improved axle and box—introduced by this company, and guaranteed to outlast any other wheels made in this State.
☞ All kinds of Machinery made and repaired.
24v22-3m JOSEPH MOORE, Superintendent.

I. S. VAN WINKLE. C. W. DAVENPORT.
VAN WINKLE & DAVENPORT,
IMPORTERS AND DEALERS IN

Iron, Steel and Heavy Hardware,
CUMBERLAND COAL,
Axlee, Springs, Blacksmith's Tools, Etc.,
Removed from Sacramento to
Nos. 413 and 415 Market street, San Francisco, Cal.
21v24-1y

California File Manuf'g Co.
Potrero, Solano street, bet. Tennessee and Minnesota streets, SAN FRANCISCO.
Manufacturers of New Files.
Old Files re-cut and warranted equal to new.
REAPER AND MOWER SECTIONS, BARS AND KNIVES COMPLETE,
at a saving of 50 per cent. Orders from the country promptly attended to. 9v19-hy

☞ BUY BARBER'S BIT BRACE. ☜

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[From Official Reports to DEWEY & CO., U. S. and Foreign Patent Agents, and Publishers of the Mining and Scientific Press.]

FOR THE WEEK ENDING JULY 2ND.

FENCE-PANEL ADJUSTER.—Francis M. Ranous, Yreka, Cal.

SELF-ACTING EXPANSION RAIL AND CHAIR.—William Close, Sacramento, Cal.

MEDICAL COMPOUND FOR THE TEETH.—John Condon Hassell, Nevada City, Cal.

METHOD OF ELEVATING THE MERCURY IN AMALGAMATING APPARATUS. — Ottokar Hoffman, Ellsworth, Nev.

ORE CONCENTRATOR.—Morgan Hungerford, S. F., Cal.

FURNACE FOR ROASTING ORE.—Richard F. Knox and Joseph Osborn, S. F., Cal.

METALLIC PACKING FOR STATIONARY JOINTS.—Ira J. Saunders, Davisville, Cal.

CAN FOR LIQUIDS.—Andrew V. Smith, S. F. Cal.

MEDICAL COMPOUND FOR COUGHS, COLDS, ETC.—John Willey, Oakland, Cal.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency

HALLIDIE'S WIRE TRAMWAY.—The wire tramway which was sent with all the necessary appliances, a few months since, to Freiburg District, about eighty miles from Eureka, Nevada, is working finely. The owner of the mine writes that it is a perfect success, discharging ten tons of ore per hour, with two mens' labor. As far as he can judge there is nothing about it to ever get out of order. While it requires but about 2,500 feet of wire he sees no reason why it could not be extended almost indefinitely with equally good results. The carrying capacity might be doubled or quadrupled if desired. After several weeks trial at the mine the unanimous verdict of all who have seen it, is that it is a complete, unquestioned success. So says Mr. C. C. Goodwin, the owner of the mine at which the tramway is located. There is little doubt but that Mr. Hallidie will be well rewarded for his invention, for it is an apparatus which can be introduced with a great saving of time, labor, and money at many of the mines on the Coast. Its success, and the approbation of the owner of this mine, will do much towards introducing the tramway into general use.

MINING PATENTS.—The Commissioner of the Land Office at Washington has issued a circular explaining the new law, and giving instruction for Registers, Receivers and Surveyors-General in each State and Territory containing gold or silver mines. The new law is especially favorable for obtaining patents economically and with little trouble, and numbers of miners are patenting their ground who never would have done so under the old system. Everybody holding mining ground should secure themselves by the acquisition of good titles to their claims which can now be done easily and with little expense.

SACRAMENTO FOUNDRY CHANGE.—The Union Foundry, at Sacramento, is now run by Root, Nelson & Co., successors to "Williams, Root and Nelson. This foundry does a wide range of work, and is one of the oldest and most prosperous in the State.

DIED.—A. B. Lindsay, a well known miner of Nevada county, died in this city on the 10th inst. He leaves an estate of about $160,000, accumulated by his industry in the mines.

LITTLE COTTONWOOD.—Large and distinctive bodies of ore are reported in the English Emma Illinois mines. The Vallejo mine has struck deposits of ore at a depth of 200 feet.

MINING SALES.—The following mining property, in Gold Run District, has been sold by W. H. Kinder to the Gold Run Ditch and Mining company for $80,000 according to the Auburn *Stars and Stripes*. Two-fifths, undivided, of the Druid claims; one-half, undivided, of the Gold Run claims; one-half, undivided, of the Gold Run ravine, the flume therein and the mining ground belonging thereto, extending up the ravine as far as the Rawley claim; one-half, undivided, of the Bay State claims No. 2; the Mechling claims; the Pine Top claims; Kinder's right, title and interest in the Red Dog claims; three-fourths undivided, in the Kinder Co., tail flume, in Squire's cañon; Kinder's interest in the Abeel & Co., flume, being a remaining term of three leases of undivided parts, together with tenements, tools and machinery. Thus it appears that within a brief period, to say nothing of small transactions to the amount of $20,000 or less, there have been sales of mining and ditch property in the Dutch Flat and Gold Run Districts, by James Teaff for $100,000, by Bradley & Gardner for $375,000, and by W. H. Kinder for $80,000, or three sales aggregating five hundred and fifty thousand dollars.

The Schell Creek *Prospect* says that E. P. Rainea and J. Farron have purchased nearly all the mines in the Hunter District for $100,000. A large force of men will be put at work.

New Incorporations.

KATE CAMERON S. M. Co.—July 11. Location: Utah Territory. Capital, $3,000,000 in 30,000 shares. Trustees—George O. Ecker, Madison H. Turrill, Benjamin A. Patteu, F. E. Vonder Meden and Thomas Davis.

DIAMOND S. M. Co.—July 13. Location: Tintic Mining District, Utah Territory. Capital stock, $30,000. Trustees—Wm. Sherman, John Morton, W. M. Brewer, Peter Saxe, and O. H. La Grange.

PRUSSIAN HILL G. M. Co.—July 15. Location: Railroad Flat, Calaveras county. Capital, $2,000,000 in 20,000 shares. Trustees—S. De Greayer, Victor David, W. H. Wright, H. C. Kibbe and J. M. Buffington.

MANHATTAN GRAVEL Co.—July 15. Location: Placer county. Capital stock, $2,000,000 in 20,000 shares. Trustees—George W. Thomas, W. B. Clary, Phillip Stoner, William Hollis and D. L. McDonald.

ENTERPRISE CO-OPERATIVE PUBLISHING Co.—July 12. Object: To purchase, print and publish the Enterprise and Co-operator Newspaper; Capital stock, $10,000, in shares of $20 each. Trustees—W. W. Swadley, D. S. Cutter, R. D. Pitt, J. G. Mullinax, J. R. Pico, J. Newcomb Jr., and L. L. Bullock.

BROOKLYN LAND Co.—July 12. Object: To purchase real estate in Alameda county, and improve the same. Capital stock, $96,000 in shares of $100 each. Trustees—Geo. Tait, C. W. Hathaway, Edward McLean, W. S. Lyon and A. Holmes.

EMMA HILL CONS. M. Co.—July 12. Location: Utah Territory. Capital stock, $2,000,000. Trustees—J. D. Frey, D. C. Haskins, J. P. Jackson, L. C. Fowler

WHITE AND SHILOH CONS. M. Co.—July 15. Location: Butte Mountain Mining District, Humboldt county, Nevada. Capital stock, $3,000,000 in 30,000 shares. Trustees—George W. Clark, S. H. Knowles, John O. Earl, Alpheus Bull and L. A. Booth.

CASTINE S. M. Co.—July 15. Location: Ely M. District, Nevada. Capital stock, $3,000,000 in 30,000 shares. Trustees—Robert Sherwood, George A. Treadwell, R. H. Rogers, Chas. F. Hamilton and C. B. Land.

REMFIELN G. AND S. M. Co.—July 17. Location: White River M. District, Tulare county. Capital stock, $1,000,000 in 10,000 shares. Trustees—Edward Ralston, David F. James, Q. A. Chase, W. H. White and A. Kohler.

ESTHER TUNNEL AND M. Co.—July 17. Location; Little Cottonwood Cañon, Utah Territory. Capital stock, $1,000,000, in 40,000 shares. Trustees—J. Bluxome, A. S. Carpenter, J. S. Bouker, E. J. Hutchinson and J. F. Nesmith.

GRANITE TUNNEL AND M. Co.—July 17. Location: El Dorado county, Cal. Capital stock, $2,000,000 in 20,000 shares. Trustees—J. J. Holmes, Isaac Jessup, W. H. Martin, J. W. Moyle and John R. Logan.

Meetings and Elections.

On the 9th inst. the Central Railroad Co. elected the following Directors for the ensuing year: A. W. Bowman, Horace Davis, A. J. Gunnison, Thos. R. Hayes, George H. Howard, Reuben Morton, Calvin Paige, A. J. Pope and Michael Reese. On the 12th inst., the Board of Directors organized by the election of the following officers: President, Reuben Morton; Vice-President, A. W. Bowman; Treasurer, A. J. Gunnison; Secretary, N. D. Arnot, Jr.

At a meeting of the Trustees of the Pea Vine Silver Mining Company, held the 12th inst., J. B. Dayton was appointed Superintendent of the Company.

The Belmont Mining Co. elected the following Trustees on the 12th inst.; M. J. McDonald, J. W. Gashwiler, J. B. Haggen, Victor Fernbach and S. B. Boswell.

The Trench Gold Hill Mining Co. held their annual meeting on the 15th inst., and elected following Trustees: H. H. Flagg (President,) F. Locan, Charles Foreman, E. F. Stone, Geo. Treat; Joseph Marks was elected Secretary.

At the annual meeting of the stockholders of Eastport Coos Bay Coal Mining Co., held on the 15th inst., the following were elected Trustees for the ensuing year: Levi Straus, Claus Spreckles, J. T. Dean, William H. Sharp, Oliver Eldridge, J. W. Raymond and Lawrence Pool.

The El Dorado South Consolidated Mining Co. have elected the following officers: Trustees; J. S. Slauson (President,) I. Steinhart, A. Hayward, W. F. Leon, H. Epstein, W. S. McCormick and H. Mayers; Secretary, J. W. Clark; Superintendent, W. S. McCormick.

The Savage Mining Co., at the annual meeting, held on the 10th inst., re-elected the following Trustees: J. A. Pritchard (President), J. F. Miller, B. Pearl, Wm. Kahlana, S. Steinhart; A. C. Hamilton, Superintendent; E. B. Holmes, Secretary.

A DISPATCH states that both coal and petroleum have been discovered on the Little Colorado in Arizona.

BULLION YIELD.—The following table of the bullion product of the coast has been compiled by J. J. Valentine, General Superintendent of Wells, Fargo & Co's Express, for the first six months of this year. The sums reported have passed through the hands of the express company, which is considered the best authority we have on the subject. Undoubtedly many small sums have been shipped through private hands of which no record can be had, so this table shows as nearly as can be arrived at the product of precious metals on this coast.

	Silver Bull.	Gold Dust or Bullion.	Total.
California	$1,392,112	$11,728,131	$13,120,243
Nevada	12,981,321	152,411	13,133,732
Oregon	4,800	638,570	643,370
Washington Ter.	.....	99,711	99,711
Idaho Ter.	194,288	745,402	939,600
Montana Ter.	35,325	1,245,514	1,280,939
Utah Ter.	1,073,644	21,722	1,095,365
Arizona Ter.	8,744	75,712	84,456
Colorado Ter.	105,195	964,298	1,069,493
Bellevue	65,494	.....	65,494
Victoria, B. C.	.....	486,950	486,950
Totals	$15,860,923	$16,158,521	$32,019,444

Mining Shareholders' Directory—Meetings, Assessments and Dividends.

[Compiled weekly from advertisements in the MINING AND SCIENTIFIC PRESS and other S. F. journals.]

ASSESSMENTS.

NAME, LOCATION, AMOUNT AND DATE OF ASSESSMENT.	DAY DELINQUENT.	DAY OF SALE.
Alpe M.Co., Ely Dist. Nev., June 18, 50c,	July 26	Aug 19
Arizona&Utah M.Co., Nev., June 4, 50c,	July 10	July 31
Balt. American, Gold Hill, July 13, $1.	Sept. 2	Sept. 20
Bellevue, Placer Co., Cal., June 20, 50c.	July 29	Aug. 19
Bowery Cons., Ely Dist., July 9, 75c.	Aug. 15	Sept. 9
Cherokee Flat B.G. Co., Cal. June 8, $1,	July 10	July27
Corona Cons., Eureka Dis, Juno 25, 10c.	July 31	Aug.22*
Crown Point Revine M.Co., May 3, $5.	June 20	July 29
Daney, Lyon Co., Nev., July 3, 75c.	Aug. 6	Aug. 25
DefianceM.Co.,GrassValley, June 3, 50c,	July 5	July 22
Diamond S.M Co., White Pine, June 29,15c,	Aug 1	Aug20
EckendornM.Co.,CalavarasCo., June 8,$3,	July 12	July28
Empire, Gold Hill, July 10, 50c.	Aug. 13	Sept. 2
Excelsior M. & M., Nev., June 20, $2.	July 27	Aug. 19*
Exchequer Gold Hill, June 26, $3.	July 31	Aug. 22
Francie, Mariposa Co., Juno 18, $1.	July 20,	August 13
Golden Chariot, Idaho, June 22, $2.20.	July 28	Aug. 17
Dutch Flat B. G. Co.,Cal.,June 11, $1.25,	July 16	Aug 6
Howard Hill M.Co.,G.Valley, June 4, $5,	July 5	July 20
Hudson G. M. Co., Cal., June 18, 10c.	July 27	Aug. 17*
Hahn & Hunt, Ely Dist., May 29, 50 etc.	July 5	July 26
Ida Elmore M. Co., Idaho, May 24, $3.	June 29	July 27
Ingomar M. Co., Ely Dist., June 5, 25c	July 15	August 9
JacobLittleM.Co.,Virginia,Nev.May 30,$5,	July 1	July31
Kincaid Flat M. Co., Cal., July 17, $3.	Aug. 23	Sept. 14*
Kentuck M.Co.,Gold Hill,Nev.,June 12,$10,	Ju 16	Aug 5
Kentucky, Ely Dist., July 2, 50c.	Aug. 10	Aug. 31
Knickerbocker, Nev., May 30, $1.	July 3	July 23
Lemon M. & M. Co., Nev., May 29, $1.	July 6	Aug 10
Louise S. M. Co., Nev., July 3, 10c.	Aug. 10,	Sept. 7*
Mammoth S.M.Co.,White Pine,June 27,10c,	Aug1	Aug27
Minnesota M. Co., I. T., May 12, $1.50.	June 22	July 20
Morning Star. Alpine Co.,July 12, $1.	Aug. 20	Sept. 14*
National M. Co., Nye Co., July 11, 50c.	Aug. 19	Sept. 14
Nevada Land & M. Co., Nev., July 18, 8c.	Aug 31	Sep 19*
Newark M.Co.,Ely Dist.Nev.,June 12, 50c,	July 22	Aug 17
Newton BoothCons.M.Co.,Nev.June 6,30c,	July 12	Aug5
New York Con., Gold Hill, June 21, 50c.	June 22	Aug 9
Noonday S. M. Co., White Pine, July 2, 25c.	Aug 5	Aug 26
Norman G. M. Co., Cal., June 27, 5c.	Aug. 1	Aug. 22*
Ohio Cone. M. Co. Cal., May 21, 10c.	June 20	July 20
Ophir, Virginia, Nev., July 17, $5.	Aug. 21	Sept. 11
Overman M.Co.,Gold Hill,Nev.,Juno 5,$4,	July 13	Aug 7
Pacific Borax Co., Nov., July 5, 15c.	Aug. 6	Aug. 30
Pacific Ramie Co., Juno 11, 20c.	July 13	Aug. 9*
Pennsylvania, White Pine, June 14, 40c,	July 22	Au 13
Phenix S. M. Co., Eureka, July 6, $1.	Aug. 12	Sept. 2
Piermont M. & M. Co., Nev., July 10, 60c.	Aug. 12	Sep 10*
Pioche W. Ex. Co. Ely Dist., July 12, 30c.	Aug. 22	Sep 15
Potomac S.M.Co.,Nye Co.,Nev,June 5,50c	July 15	Aug19
Roxby, Gold Hill, June 3, 50c.	July 5	July 27
Sapphire S. M. Co., G. H., July 16, 30c.	Aug. 17	Sept. 6
Senator S. M. Co., Nev., July 6, 25c.	Aug. 10	Aug. 30
Southern Gold Hill, Nev., June 24, 25c,	Aug 3	Aug 26
Spring Mountain Tunnel, July 9, 30c.	Aug. 16	Sept. 7*
Star Cons., Eureka Dist., June 20, 25c.	July 29,	August 20
Sterling M. Co., Ely Dist., July 15, 50c.	Aug. 21	Sept 12
St. Louis M. Co., Placer Co., July 1, $1.	Aug. 6	Aug. 27
St. Patrick M.Co.,Placer Co.,Cal.,June 19,	$3, Ju 27	Aug19
Union G. M. Co., Cal., June 25, $1.	July 29	Aug. 19*
William Penn Cone., Nev., July 3, 10c.	Aug. 5,	Sept. 2*
Winnemucca Chief, Nev., June 19, 15c.	July 30	Aug. 20*

MEETINGS TO BE HELD.

Alhambra Hill M. Co.	Special Meeting, Aug. 19*
Arkansas M. Co.	Annual Meeting, July 22
Belcher M. Co.	Special Meeting, July 25
Calaveras G. M. Co.	Annual Meeting, July 22
Cascade Blue Gravel Co.	Annual Meeting, July 22
Cons. Gold Hill Quartz M. Co.	Annual Meeting, Aug. 3
Dayton G. and S. M. Co.	Annual Meeting, July 25
Eliza M. & M. Co.	Annual Meeting, July 25
Ida Elmore M. Co.	Annual Meeting, Aug. 5
Julian G. M. Co.	Annual Meeting, July 20
Kentucky G. & S. M. Co.	Annual Meeting, June 29
Mammoth Grove M. Co.	Annual Meeting, July 22
Original Schell Creek M. Co.	Annual Meeting, July 25
Pictou M. Co.	Annual Meeting, July 22
Piermont M. & M. Co.	Annual Meeting, July 24
Pride of the Mountain M. Co.	Annual Meeting, Aug. 12
Puebla G. S. & C. M. Co.	Annual Meeting, July 29
South Cverman S. M. Co.	Annual Meeting, July 27
Stanford S. M. Co.	Annual Meeting, July 22
Tecumseh G., S. & C. M. Co.	Annual Meeting, July 18
Tyler Mining Company	Annual Meeting, July 22*
Union Cons. S. M. Co.	Annual Meeting, July 20
Virginia & Gold Hill Water Co.	Annual Meeting, July 25

LATEST DIVIDENDS—(Within Three Months).

Belcher M. Co., $30	Payable July 5
Black Diamond Coal Co., ½ per cent.	Payable June 28
Crown Point G. & S. M. Co., $3.	Payable July 5
Eastport, Cooee Bay, Coal M. Co., $5.00.	Payable July 12
Keystone Quartz Mining Co., 50c.	Payable July 10
Keyetone M. Co,, $7.50.	Payable April 10
Meadow Valley M. Co., $1.00.	Payable June 20
North Star G. M. Co., $7.	Payable April 9
Pioche S. M. Co., $1.	Payable July 5
Raymond & Ely M. Co., $7.	Payable July 5

—*Advertised in this journal.

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Mining and Other Companies.

Owing to the time necessary to mail the present large edition of the M. & S. Press we are obliged to go to press on Thursday evening—which is the very latest hour we can receive advertisements.

Office of Alhambra Hill Mining Company,

San Francisco, July 14th, 1872.

In accordance with a resolution adopted at a meeting of the Board of Trustees of the Alhambra Hill Mining Company, Pinto Mining District, White Pine County Nevada, held this day, a special meeting of the stockholders of said Company is hereby called, the same to be held at the office of the Company, 512 Clay street, San Francisco, California, on Monday, the 19th day of August, 1872, at four o'clock, P. M., to take into consideration and decide upon the proposition to increase the capital stock of said Company, from five hundred thousand dollars, divided into five thousand shares of the par value of one hundred dollars each, the present capital stock, to five million dollars, divided into fifty thousand shares of one hundred dollars each.

(Signed) ROBT. C. JOHNSON.
E. J. MOORE,
L. JACOBI.
H. G. LANGLEY.

jul20-4t

Corona Consolidated Mining Company—

Location of works, Eureka District, Lander County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 25th day of June, 1872, an assessment of Ten Cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No. 409 California street, up stairs, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 31st day of July, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the 22d day of August, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. F. CRONISE, Secretary.

Office, 409 California street, San Francisco, California.
Jun29-3t

Eagle Quicksilver Mining Company---Lo-

cation of mines, Eagle Mining District, Santa Barbara County, California.

Notice.—There are delinquent upon the shares of the following named persons, on account of assessment levied on the 8th day of May, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Bush, A T	Unissued.	1	$40 00
Burton, L T	Unissued.	1	40 00
Burton, Benj	Unissued.	1	40 00
Brinkerhoff, S B	Unissued.	2	80 00
Church, Thos. R	Unissued.	1	40 00
Crane, A. M	Unissued.	1	40 00
Fernald, Chas	Unissued.	1	40 00
Kyle, J. J	Unissued.	2	80 00
Ploche, F. L. A	Unissued.	2	80 00
Richards, Jarret T.	Unissued.	1	40 00

And in accordance with law, and the articles of agreement of said Company, and an order of the Board of Trustees thereof, made on the 8th day of May, 1872, the whole or such undivided part of each delinquent share in said mines, as may be necessary to pay said assessment upon each, will be sold to the highest bidder, at public auction, for cash, in United States gold coin, at the office of the Company, Room 5, No. 302 Montgomery street, San Francisco, California, on Monday, the 15th day of July, 1872, at the hour of 2 o'clock, P. M., of said day, to pay the said delinquent assessment thereon, together with costs of advertising and expenses of sale.

WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery street, San Francisco, California.
San Francisco, July 13, 1872. jy13-1t

POSTPONEMENT.—The above sale is hereby postponed until Monday, the Twenty-second day of July, 1872, and will be held at the same hour and place.

By order of the Board of Trustees.

WM. H. WATSON, Secretary.

San Francisco, July 13, 1872.

Excelsior Mill and Mining Company—Lo-

cation of works, Cope Mining District, Elko county, State of Nevada.

Notice is hereby given, that at a meeting of the Trustees of said Company, held on the 20th day of June, A. D., 1872, an assessment of Two Dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the company, No. 415 Montgomery street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Saturday, the 27th day of July, A. n., 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 19th day of August, A. n., 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. FRANK SWIFT, Secretary.

Office, No. 415 Montgomery street, San Francisco, Cal.

Hudson Gold Mining Company—Location

of works, Cherokee Mining District, Plumas county, State of California.

Notice is hereby given, that a meeting of the Trustees of said Company, held on the 18th day of June, A. n., 1872, an assessment of Ten Cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the company, No. 411 California street. Any stock upon which said assessment shall remain unpaid on Saturday, the 27th day of July, A. n., 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 17th day of August, A. n., 1872, to pay the delinquent assessment, together with costs of advertising and expenses of the sale.

J. L. KING, Secretary.

Office, 411 California street.

Kincaid Flat Mining Company—Location

of Works, Tuolumne County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 17th day of July, 1872, an assessment of Three Dollars per share was levied upon the capital stock of said company, payable immediately, in United States gold coin, to the Secretary, at his office, No. 220 Clay street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 23d day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Saturday, the 14th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. H. CORNELL, Secretary.

Office, 220 Clay street, San Francisco. jul20-4t

Nevada Land and Mining Company—Lo-

cations, Spruce Mountain, Clifton, and Antelope Mining Districts, Elko County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 18th day of July, 1872, an assessment of Eight Cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office. Any stock upon which said assessment shall remain unpaid on Saturday, the 31st day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the 19th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery street, San Francisco, California. jul20-4t

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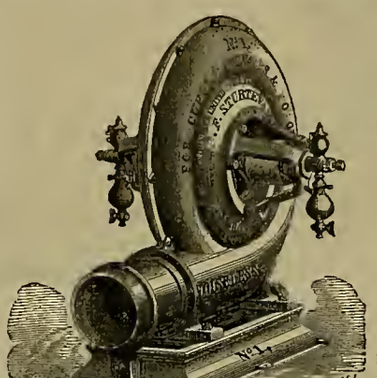

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Louise Silver Mining Company—Location

of works, Ploche, Ely Mining District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 3d day of July, 1872, an assessment of ten cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, room 5, No. 302 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Saturday, the 10th day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 7th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees. WM. H. WATSON, Secretary.

Office, room 5, No. 302 Montgomery street, San Francisco. jul6.

Norman Gold Mining Company---Location

of works, Aqueduct Mining District, Amador County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said company, held on the 27th day of June, 1872, an assessment of five cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary at the office of the company, room 5, No. 302 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Thursday, the 1st day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the 22d day of August, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office—Room 5, No. 302 Montgomery street, San Francisco.

Tecumseh Gold, Silver and Copper Min-

ing Company—Location of Works, Gopher District, Calaveras County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 26th day of June, 1872, an assessment (No. 14) of ten (10) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, F. J. Herrmann, at the office of the Company, No. 634 Washington street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 31st day of July, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the 22d day of August, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

F. J. HERRMANN, Secretary.

Office, 634 Washington street, Room No. 2, up stairs, San Francisco, Cal. Office hours from 11 A. M. to 2 P. M.

Morning Star Gold and Silver Mining

Company—Location of works, Great Mogul District, Alpine County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 12th day of July, 1872, an assessment of One Dollar per share was levied upon the capital stock of said company, payable immediately in United States gold and silver coin, to the Secretary, at the office of the Company, Room No. 43, New Merchants' Exchange, (3rd floor,) California street, in the City and County of San Francisco, State of California. Any stock upon which said assessment shall remain unpaid on the 20th day of August, A. n., 1872, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Saturday, the 14th day of September, A. n., 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. H. BOGART, Secretary.

Office, Room No. 43, Merchants' Exchange, California street, San Francisco. jul20-4t

Piermont Milling and Mining Company—

Location of works, Piermont Mining District, White Pine County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 10th day of July, A. n., 1872, an assessment of Sixty Cents per share was levied upon the capital stock of said company, payable immediately, in United States gold coin, to the Secretary, at the office of said Company, Room No. 2, 418 California street, San Francisco. Any stock upon which said assessment shall remain unpaid on Monday, the 12th day of August, A. n., 1872, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Tuesday, the 10th day of September, A. n., 1872, at the office of the Company, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

jul20-4t J. W. CLARK, Secretary.

Union Gold Mining Company—Location of

works, Howland Flat, Sierra County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 25th day of June, 1872, an assessment of one dollar ($1.00) per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company rooms, No. 22, Merchants' Exchange, California street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 29th day of July, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 19th day of August, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

ALFRED K. DURBROW, Secretary.

Office, room No. 22, Merchants' Exchange, California street, San Francisco, Cal. June29-3t

Spring Mountain Tunnel Company—Lo-

cation of works, Lincoln County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 9th day of July, 1872, an assessment of thirty cents (30) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary. Any stock upon which said assessment shall remain unpaid on the 16th day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 7th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.

Office, Room 37, third floor, New Merchants' Exchange, California street, San Francisco, California. july13

Office of the Tyler Mining Company, San

Francisco, July 9th, 1872.

The regular annual meeting of the stockholders of the Tyler Mining Company will be held at the office of the Company, Room No 22, Merchants' Exchange, California street, San Francisco, California, on Monday, the 22d day of July, 1872, at 1 o'clock P. M., of said day.

jul13-2w ALFRED K. DURBROW, Secretary.

William Penn Consolidated Gold and Sil-

ver Mining Company—location of works, Devil's Gate District, Storey County, State of Nevada.

Notice is hereby given, that at a meeting of the Trustees of said Company, held on the 3d day of July, A. n., 1872, an assessment of ten cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No. 6, Montgomery street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 5th day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 2d day of September 1872, to pay the delinquent assessment, together with the costs of advertising and expenses of sale. By order of the Board of Trustees.

JNO. F. POPE, Secretary.

Office, No. 6 Montgomery street, San Francisco, California. July6-4t.

Winnemucca Chief Silver Mining Com-

pany—Location of Works, Humboldt County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 19th day of June, 1872, an assessment of fifteen cents per share was levied upon the capital stock of said Company, payable immediately, in United States Gold coin, to the Secretary, at the office of the Company, No. 409 California street, up stairs, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 30th day of July, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the 20th day of August, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. F. CRONISE, Secretary.

Office, 409 California street, San Francisco. Cal.
June29-3t.

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ESTABLISHED 1851.

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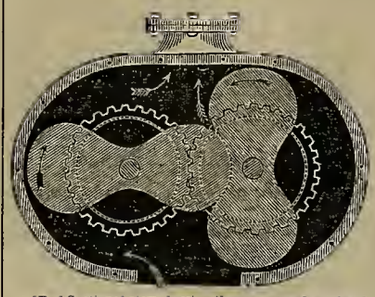

[End Sectional view showing the pistons and gearing.]

Awarded the First Premium at the Paris Exposition.—Patented November 1, 1864; July 24, 1866; and October 9, 1866.

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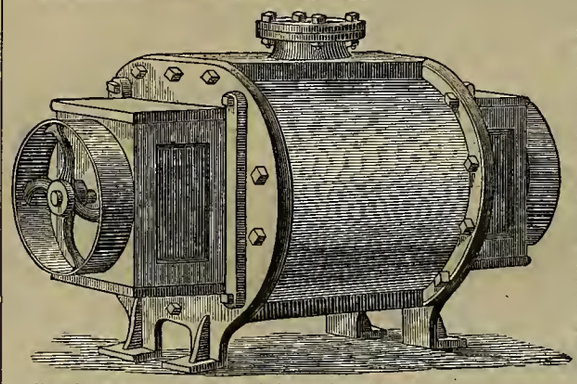

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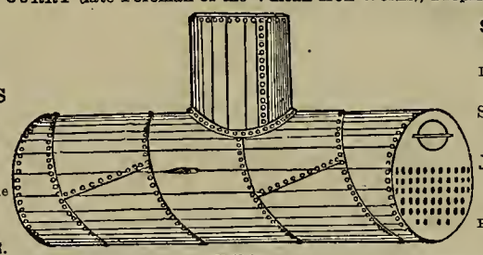

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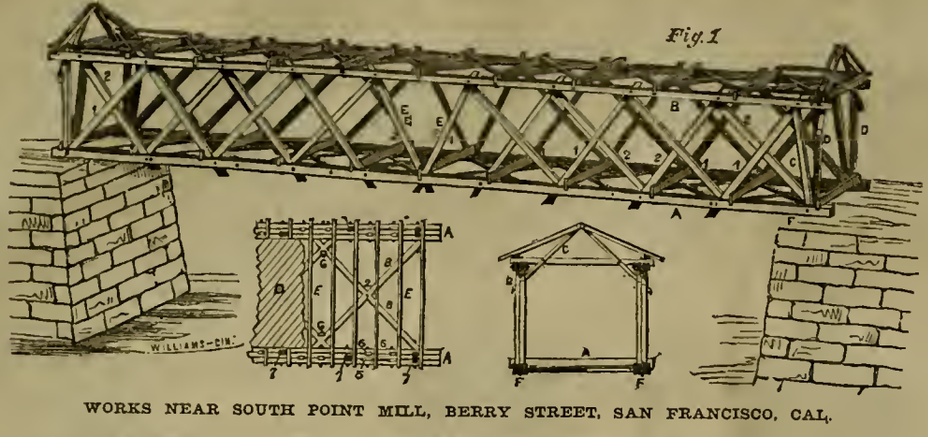

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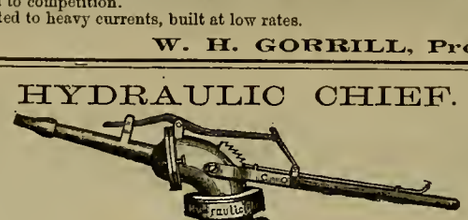

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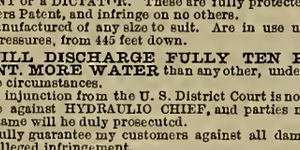

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Save from 75 to 95 per cent. of oil used on shafting or machinery bearings. No better investment for the amount can be made by any person having machinery or running shafting. They are widely known for their rellability and economy. All the trouble of "oiling up" is avoided. There is no waste of oil, and no cans are needed A single trial will prove their valne. We will put them into any mill, and if not perfectly satisfactory, they may be returned at our expense, and the price will be refunded. We have a large stock on hand, of all sizes, adapted to all description of boxes.

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532 California street, corner Webb street.

For the half year ending with 30th June, 1872, a dividend has been declared at the rate of nine and six-tenths (9 6-10) per cent. per annum on Term Deposits, and eight (8) per cent. per annum on Ordinary Deposits, free of Federal Tax on deposits, payable on and after 10th July, 1872. By order.

jy13-1m LOVELL WHITE, Cashier,

SAVINGS AND LOAN SOCIETY,

No. 619 Clay Street,
SAN FRANCISCO, July 9, 1872.

At a meeting of the Board of Directors, held this day, a dividend of nine per cent. per annum for the six months ending June 30, 1872, was declared on all deposits, free of Federal Tax, and payable on and after Monday, July 15, 1872.

2v25-2w CYRUS W. CARMANY, Cashier.

LEA & PERRINS'

CELEBRATED

Worcestershire Sauce.

Declared by Connoisseurs to be the only good SAUCE

Caution Against Fraud.

The success of this most delicious and unrivalled Condiment having caused certain dealers to apply the name of "Worcestershire Sauce" to their own inferior compounds, the public is hereby informed that the only way to secure the genuine is to ASK FOR LEA & PERRINS' SAUCE, and see that their names are upon the wrapper, labels, stopper and bottle.

Some of the foreign markets having been supplied with a spurious Worcestersbire sance, upon the wrapper and labels of which the names of Lea and Perrins bave been forged, L. and P. give notice that they have furnished their correspondents with power of attorney to take instant proceedings against manufacturers and vendors of such, or any other imitations by which tbeir right may be infringed.

Ask for LEA & PERRINS' Sauce, and see name on wrapper, label, bottle and stopper.

Wbolesale and for export by the Proprietors, Worcester; Crosse & Blackwell, London, &c., &c., and by Grocers and Oilmen universally. 15v24-eow-tf

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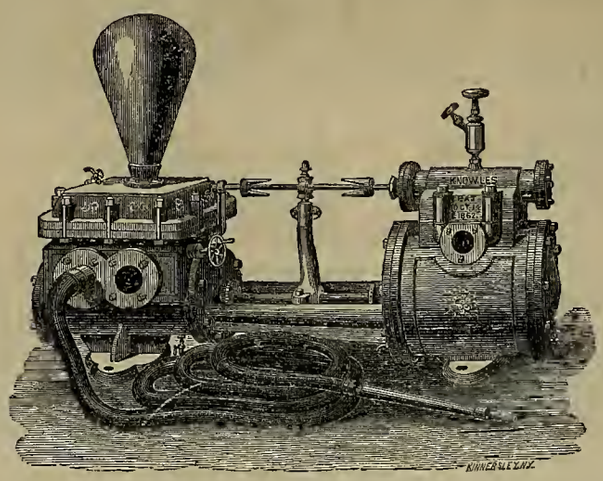
KNOWLES' PATENT STEAM PUMP.

Extract from Official Report of Mechanics' Institute Fair of San Francisco, 1871.

"In the foregoing trials it appears that the most efficient Pump on exhibition is the KNOWLES. The workmanship on this Pump is also very good. We would therefore recommend that this Pump receive a Silver Medal. (Diploma awarded). Signed by the Committee:

G. W. DICKIE, H. B. ANGELL,
CHAS. R. STEIGER, W. EPPELSHEIMER, MELVILLE ATWOOD."

v113-awbp



It has no Cranks or Fly-Wheel, and has no dead points where it will stop, consequently it is always ready to start without using a starting-bar, and does not require hand-work to get it past the center. Will always start when the steam cylinder is filled with cold water of condensation.

The trial of Steam Pumps at the Eighth Industrial Fair in San Francisco, by a Committee of Five of the most thoroughly practical mechanics on this coast, showed the Knowles Pump to lose but 11⅓ per cent., while others lost as high as 40 per cent., showing great difference in economy.

WE BUILD AND HAVE CONSTANTLY ON HAND

THE LARGEST STOCK OF PUMPS IN THE WORLD,

And for Every Conceivable Purpose.

A. L. FISH, Agent.

No 9 First Street, San Francisco, Cal.

P. S.—All kinds of new and second-hand Machines on hand. 3v24-eow-bp

BLAKE'S PATENT STEAM PUMP.

From the Report of the Committee on Steam Pumps, at the Seventh Industrial Exhibition of the Mechanics' Institute, San Francisco

BLAKE'S STEAM PUMP.—This Pump yielded the best results as to the quantity of water diacharged as compared with its measured capacity. The valves are of brass, and well arranged. The steam valves are well arranged for operating the pumps, either fast or slow.

We recommend that a Medal be awarded to it, as THE BEST STEAM PUMP. [Awarded a SILVER MEDAL, the first premium.] (Signed) JAS. SPIERS, WM. H. BIRCH.

From the Report of the Committee on Steam Pumps, at the Eighth (or *last*) Industrial Exhibition of the Mechanics' Institute, San Francisco:

BLAKE'S MINING PUMP.—This is an excellent Pump, well made, and gives a high per cent. of duty. We recommend a Diploma for this Pump. (Signed by the Committee.)

G. W. DICKIE, H. B. ANGEL, CHAS. R. STEIGER,
W. EPPELSHEIMER, MELVILLE ATWOOD.

[No other Steam Pump rceeived other than a Diploma or honorable mention at the LAST Mechanics' Exhibition, *all other assertions to the contrary notwithstanding*. Hooker's Hand Pump was the *only* Pump of any kind whatsoever, that received a MEDAL and FIRST PREMIUM (highest award to pumps) at the *last* Exhibition, for which we are also selling agents.—*See official Report of the above Committee.*]

The trial of Steam Pumps at the Eighth Industrial Fair in San Francisco, by a committee of five of the most thoroughly practical mechanics on this coast (as above named), showed that the Blake Pump gave 86 per cent. of utilized power, while others gave but 60 per cent., showing great difference in economy.

The Blake Pump is the ONLY Steam Pump that EVER RECEIVED A SILVER MEDAL at any Exhibition of the Mechanics' Institute ever held in San Francisco or California.

☞ A complete stock of all sizes constantly on hand at the Machinery Warehouse of the Agents,

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THE TRUTH!

A. L. FISH, Agent Knowles' Steam Pump—Dear Sir: In answer to your inquiries, we state that the highest award for Steam Pumps at the Eighth or last Mechanics' Fair in San Francisco, was a *First Premium* and Diploma, awarded to the Knowles' Patent Steam Pump, as published in the Official List September 23d, 1871.

A. S. HALLIDIE, President Board of Managers.
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Are now manufacturing besides the famous regular

GIANT POWDER, A NO. 2 GIANT POWDER,

Somewhat slower in its Explosion, which we recommend for

BANK BLASTING, COAL MINES,

AND FOR ALL SUCH WORK WHERE THE ROCK IS NOT VERY HARD

It is fully as safe as the other and evolves neither smoke nor noxious fumes when exploded.

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MINING AND SCIENTIFIC PRESS.

An Illustrated Journal of Mining, Popular Science and Progressive Industry.

BY DEWEY & CO., Patent Solicitors.

SAN FRANCISCO, SATURDAY, JULY 27, 1872.

VOLUME XXV. Number 4.

Fire Damp from Anthracite.

It has, until quite recently, been thought that fire damp would never he encountered in Anthracite coal mines. The theory has been that the heds of hard coal have been subjected to snch long continued heat that all ths volatile hydrocarhons, (firo damp) have heen so effectually driven off that it would be impossible for a snfficient quantity to be developed to render the same explosive, when diffused through the atmosphere of mine chambers or drifts. It appears, however, that some threo months ago. while a party of engineers were examining with a naked light, an Anthracite mine, near Wilksharre, Penn., an explosion of fire damp occurred by which three ot the party were instantly killed, while a fourth barely escaped with his life.

It should he stated, however, that work in the mine had been suspended for a long time, from which, and the further fact that no inflammable gasses had heen perceived during the working of the mine, it may be reasonably inferred that the accumulation had heen very slow, and wonld not have reached a dangerous extent, if a proper circulation of air had been kept up, as would have been the case had work regularly continned in the mine. Still the bare fact that snch gases may accumulate even in an anthracite mine, is one which should be borne in mind, and placed upon record as one of the possibilities connected with that class of mines.

The periodical immolation of scores and hundreds of victims in the English coal mines, to say nothing of similar occurrences which are hecoming alarmingly frequent in our own, appeals to the duty and humanity of inventors to devise some means hy which sneh accidents may be avoided. From the experience of coal mining in England it is clear that unless some such device is perfected, the time will soon arrive when onr own mines will reach a point in depth which will greatly increase the danger of life in working them; and in view of the fact that the material interests of every citizen is more or less dependent upon the lahors and exposures of the delvers after coal, may it not become the duty of the Government to take action in the matter by throwing safeguards around them, by which they may at least be protected from the cupidity or ignorance of those who may he placed in charge of such works. The *Gas Light Journal* suggests, and we heartily endorse the idea, that a scientific commission of skillfull chemists and experienced mining engineers be appointed hy the Government to investigate the questions of lighting, veutilating and seeuring mines from fires, and providing means of escape in case of the latter emergency. Let such a commission make a report to he placed in the hands of proper persons to frame from it a law, which shall enforce such management as shall protect, as far as human foresight and intelligence can do, this useful aud most necessary class of our citizens from tho dangers incident to their calling. They ought at least to he guarded against the cnpidity of employers, and the results of the carelessness of the more reckless of their own uumher.

Prospectors.—The Inyo *Independent* says there is a good chance for prospectors in the foothills west of Bishop Creek and Round Valley. There are numerous ledges, and in the gulches small particles of gold have been found on the surface, bnt no one has yet tried to sink to bed rock.

Canal Boat Propulsion.

Ths propulsiou of canal boats by steam power has occupied the inventive mind of the United Statos for some time past, on account of the large premium offered by the State of New York for the best method of propelling canal boats, without injury to the canal itself. Various plaus have been forwarded from every State in the Union, and California, being as prolific in invention as in fruits, has produced many ingenious methods. One of the latest—which has received our supervison, is a plan proposed by Messrs. Stebbins and Browne of this city.

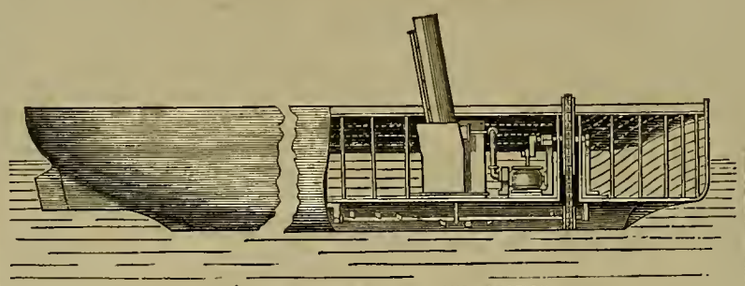

FIG. 1—LONGITUDINAL VIEW AND SECTION.

The accompanyiug cuts, 1, 2 and 3 respectively, represent a longitndinal view and section, a plan, and a cross section. The motive power used is a propeller, composed of any numher of hlades attached to a shaft placed near the bows and running, say one-third the length of the boat, the blades increasing in diameter and pitch (as they approach the stern) in such a manner as to render every blade effective, so that the water thrown hack by the first blade is taken up by the second, on account of the increased speed of the external portion of the hlade, and so on to the last, each hlade acting as an independent motor, and the whole united developing any required power, according to the diameter and number of the blades nsed.

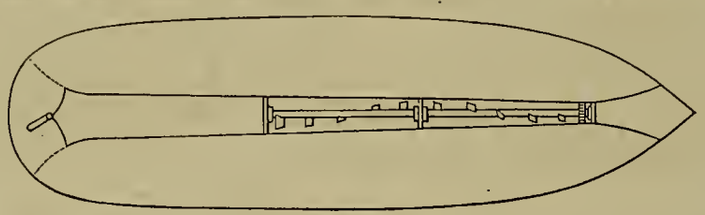

FIG. 2—PLAN.

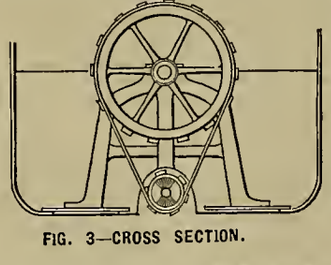

FIG. 3—CROSS SECTION.

This propeller, or serew, works on a hollow or funnel in the bottom of the boat, and open to the water, extending from where it cuts the lines of the vessel from stem to stern, as shown in Fig. 1 and 2. This funnel is hell shaped at the hows till it reaches the screw and its smallest diameter, from this point it expands to the stern, parallel to the screw, thns taking a conical or wedge shape, as in Fig. 2. The motive power is a compact engine placed at any convenient part of the vessel, driving from the flywheel, by means of an endless chaiu to a drum or pulley on ths propeller shaft, (as shown in Fig. 1 and 3) the arms of which sre composed of two hlades, thus formiug the first wing of the screw. The center of the driving wheel being above the level of the water and cased iu similar to the center board of a yacht prevents leakage.

The merits of this plan arc the small diameter of the propeller used, thns disturbing the water less than a propeller of ordinary form and size and at the same time developing similar power, and secondly the longitudinal shape of the hollow, or funnel, in which this screw works. We will briefly describe the action and effect of a screw of this kind working in a conical funnel. The water being open to the action of the screw is sncked in by the first hlade through the bell-shaped mouth, taken up by each succeeding hlade, and the resultant of power of the current thus formed, expanding in the funnel, is parallel to the course of the hoat, which is to say that the current formed hy the screws in this expanding fnnnel expends its force in forcing the boat ahead and not retarding its course hy friction, and dies away gradnally before reaching the stern. From experiments made the plan has been found effective, scarcely disturhing the equilihrium of the water.

We are not informed as to whether the inventors intend entering this device for the premium or not.

Dividends and Assessments.—The assessments of the principal mines of Nevada for the past three months amounted to $831,300, while the dividends aggregated $2,801,000, leaving a profit to stockholders of $1,969,700. For this month the assessments of fifteen companies amounted to $278,000, and the dividends of five amounted to $852,000, leaving a halance of $573,300 to the credit of stockholders.

The Bellingham Bay coal mine, which was flooded with water some time since to put out a fire, has heen pumped out and is now in order to be worked.

Academy of Sciences.

Want of space prevented our giving a full report of the meeting of the Academy in our last issue, and the interesting discussion which was called ont hy Dr. Stout's theory of the formation of the magnetic iron sands was therefore omitted. After exhibiting specimens of the iron, he said that it evidently came from the bottom of the sea, probably from a volcanic origin, and became condensed in the form of crystals hy contact with the cold water.

Dr. Gibbone did not agree with Dr. Stont in his theory of the formation of this iron. He rather thonght its existence on the beach was to be attrihuted to the detrition of strata containing iron. These strata wearing down in the usual manner the heavy sand would naturally separate by washiug, from the rocky detrites. The value of iron deposits depends entirely on the location and snpply of fuel. The hest ore in the world would be valuless if there were no fuel near hy. It has to be associated with coal to be made availahle.

Enterprises Projected.

Dr. Stont said that by a process recently patented, (White's) this irou could be ntilized hy using petrolenm for fnel. Gen. Hewston stated that he had met a gentleman from New York recently, who had come here with a newly patented apparstus for separating magnetic iron from ores. The only obstacle that gentleman had to meet in this country was to find availahle deposits. Dr. Stout proposed to satisfy him in that particular. The agent of White'e patent is also here, and proposes introducing it on this coast. The requisite mahinery for hoth these processes will prohahly be in this city shortly.

An Interesting Discussion

Ensued as to the formation of this irou. In reply to the remarks of Dr. Gibbons, Dr. Stout was convinced that the disintegration theory would not explain the origin of this peculiar form of iron sandstoue as any silicious form of iron would be in the shape of bog iron, or the common protoxide. This magnetic iron was apparently the result of igneous action or condensation from vapor. If you examine the deposits on the seashore, it will he found that the particles further from the water, and longer exposed to the effects of solar heat and light, exhibit a tendency to decompose, and in placee can be found in a state of transition into black and red oxides.

Gen. Hewston said a great deal of this sand will hefound to be in the form of crystals. It will he found a permanent oxide. It will stand a great deal of light and heat, without decomposition. He concurred with the views of Dr. Gibhons, in regard to the iron heing formed from the disintegration of strata containing iron. The particles on the heach are evidently washed from iron-bearing strata in the ocean.

Mr. Stearns said this magnetic iron existed in great abundance, in the country rock in the Lake Superior Copper region, so much so that the ordinary compass was rendered unfit for runuing levels.

Among the contrihutions to the cahinet, was a steel turning, turned from the tire of a locomotive whcel, in the Southern Pacific R. R. Co's. shop, which was 38 feet long, equivalcnt to a shaving 100 feet long. It proved the tenacity and strength of the Firth Steel, such as is imported hy Nelson & Doble of this city.

An exceedingly rich gold mine is reported as having heen discovered in Baker County, Oregon; $4,000 was taken out of one pocket in four days and the average quartz is said to yield $600 per ton.

CORRESPONDENCE.

Notes of Travel in Lander County, Nevada.

[By our Traveling Correspondent.]

Eureka.

Thie thriving mining town is located 70 milee eaet of Anetin, the county eeat of this County, and 84 miles south of Pal-Palisade, or 657 miles from San Francisco. It contains about 5,000 inhabitants, and the district ahout 12,000. The cost of getting to this place from your city, is $56 for fare, besides incidental expenses. On arrival here the traveller can be accommodated with board and lodging, at from $2.50 to $5.00 per day, at four different very good hotels, viz., the "International," "Turner House," "Parker House" and "Eureka Hotel." The altitude of this place ahove the sea level is 6,651 feet. They have a good fire dspartment, and ahove all, good drinking water. Another necessary convenience, the inhahitants are furnished with, are nice warm ewimming baths, in a pond 50x100 feet surface, by from 5 to 7 feet deep at 50 cents a swim, by Gilmore & Co. This place supports a banking house, that of Paxton and Co., and two hardware merchants, Messrs. Mott, Fish & Co., and Maupin & Cromer. The former are also agents of the Giant Powder Co., of your city, which explosive is used in considerable quantities here; 4 diffsrent blacksmithing firms are doing a thriving business, and there are some 30 different mercantile firms here. Messrs. Wise & Henderson do the commission and Storage businees, and C. S. Cardoso sells all the lumber—about 2,000,000 ft. annually. One of the largeet interests represented here outside of mining is that of

Fast Freight Lines.

There are two, that of W. L. Pritchard, and the Nevada Transportation Co. The former run 12 and 14 mule teams, on three different kinds of time, from Palisade to this point; the tast line comes through in 36 hours, next in 2 days, and the slowest in 4½ days; price of freight varies accordinfi to the season, and speed required in tranportation—from 1¼ to 4½ cents per lb. at this writing. The Nevada Transportation Co., run 14 14-mule teams from Palisade; 45 hours is their time. I will now attempt to give your readere a slight description of the mines in this dietrictand their developments.

The Mining Belt

Of base metal ores is ahout 10 milee long by 2 wide; to enumerate the mines or the working claims, we will begin at the north end of the district and give you their names in rotation. First is the

Bullwhacker,

Which is incorporated and belongs to an English company; H. Heyneman of San Francisco, is President, and L. N. Dougherty, Superintendent; they have a shaft down 100 fest, working a numbsr of men, and raising a large quantity of valuahle ore; this incorporation comprises the Dunderberg," "El Dorado," and several other important mines. Smelting works are about to be erected.

Silver West

Comes next. This is the proporty of Col. T. J. Taylor; he has about 450 tons of ore on the dump. He is erecting smelting works which will be completed about the 25th of July.

The Silver West mine ie about 2 miles in a weeterly direction from the town of Eureka. The developments consist of one shaft ore incline with a dip of about 70 degrees. At a depth of 15 feet the incline passed through a horizantal vain of high grade ore 2 feet thick; at a point 10 feet lower it cut a floor of ore 6 feet thick; 3 feet lower it cut a floor 4 feet thick; 4 feet lower it cut a floor 6 feet thick; and at a point 2½ feet lower it cut a floor 3 feet thick. The rock found between the ore beds ie porphyry. The only work done ie on the second floor from the bottom which consiets of a cut or drift north and south 70 feet, with the etrike of the vein, with two parallel cuts east and west ahout 30 feet, apart, and fifty feet in length, in a continuous body of ore. Said drifts have yielded about 800 tons ore, contain about 50 per cent. of lead and from $60 to $120 per ton in silver.

The Excelsior Series

Are on Prospect Mountain, at the head of New York Cañon about 4 milee eoutherly from the town of Eureka. The developments consist of 7 ehafts, all of which disclose fine high grade ore beds. The amount of ore in eight, is estimated at 1,000 tons.

"The Silver West" and "Excelsicr" are the property of John W. Brummagim of San Francisco, John Perchbaker of Napa City, and Thomas J. Taylor of Eureka, Nevada. The next is tho

Silver Lick,

Which is located one-half mile eouth of the "Silver West," owned by Shoenbar & Adams; they have oue shaft down 75 feet, and have on the dumps about 100 tons of good milling ore. Half a mile east is the

Adams Hill Co.

This is an incorporation with a capital stock of $5,000,000 in 50,000 shares. G. T. Lawton is President, W. W. Traylor, Secretary, and A. M. Ellsworth is Suporintendent. This company have a tunnel in 295 feet on the ledge, and a ehaft down 200 feet. Steam hoisting works have just been erected. This company also own the "Wide West," which has heen pierced by a shaft 150 feet deep; 35 men are employed in working these two mines. This company own eix mines. Two are being worked with all the energy possihle, and have any amount of ore. That from the Wide West shaft ie undoubtedly the best ore in the district; the samples assayed vary from $200 to $1,100 per ton. Are now shipping 100 tons to San Francisco of that grade. The Lee mine has oue level 300 feet long on ore all the way. Also the second level, 140 feet deep ie about 70 feet long in ore—good $100 average. It has also another shaft 480 feet distant which is 140 feet desp—all the way on the lead from top to bottom; and the levels are being pushed to connect with that shaft, for air and working purposes.

The Wide West ehaft ie now 150 feet deep; ore at the bottom, and nobody knows how much deeper. The hoisting works are working beautifully, and evsrything scems to give proof that this company have eome of the best mines in this place or even all of Eastern Nevada. The deepest shaft on the Lee mine is 160 feet deep, and the vein eeeme to be a true fissure vein; working about 35 men night and day.

Immediately east of the Adams Hill M. Co., are situated the minee of the

Magnolia M. Co.

An incorporation with a capital stock of $3,000,000, divided into 30,000 shares. N. P. Copp is the general Superintendent. This company have one ehaft down 130 feet, and have 100 tons of good milling ore on the dump; working 6 men. The next on the south, are the mines of

Ths Star Consolidated Co.

The property of this company consist of 24 minee and prospects. Incorporated with $5,000,000 capital, in 50,000 ehares. O. F. Griffin is Preeident, Geo R. Spinney Secretary, and L. C. McKenney, Superintendent. This company have one tunnel in 280 feet, and one in 140 feet; one shaft down 110 feet, one 90 feet, two 75 feet and one 60 feet deep, with varions othere of lesser depth. Working 20 men; 500 tons of extra milling ore on the dump. Next in order is the property of the

Phoenix Silver Mining Co.

An incorporation with a capital etock of $5,000,000 in 50,000 ehares; office No. 26 Hayward's building, S. F. Robert Sherwood is President, and Joscph Maguire Secretary; and E. Caldwell Superintendent. The Phoenix company is situated on Ajax Hill, a emall ravine dividing it from Ruby Hill. Ite western boundary is about 300 feet from Eureka Consolidated eastern boundary, and it is on the eame ore channel. The claim has a perpendicular ehaft 300 feet deep, which is the deepest of any in the district. On the 300 foot level fine ore has been fonnd and is going down. The work dcne underground embraces three different stations, with drifts running off in different directions amounting to nearly 1,000 feet, besides stopes and other prospecting work. Good tracks are laid underground in the different drifts and all ore and waste ie delivered into cars from the shute, and taken to the cage and hoisted up. The underground workings have developed a large body of fine ore which ie being taken out and delivered at their furnace. The ore is of fine quality showing about $50 per ton in silver and gold and 30 per cent. lead on the average. The compauy have constructed hoisting works complete in every particular, with power to hoiet 1,200 feet. They have tracks, ore dump and all arranged for convenient and economical working. The eteam ie controlled as well as the brakes by one man, from a platform adjoining the shaft who also dumps the car. The eteam works are on the Adams & Farren and Drap minee; the company have on Adams Hill two minse, the "Empire" and "Lexington"—both of which contain fine ore, some of high grade, going $300 to the ton. A tunnel location has been made for the benefit of the company running through the Hill and through both claims. Ore now is being hauled to the furnace from these claims; the ore is milling, but excellent for fluxing purposes, to mix with galena oree. The company also own the "Othoo" and Jerry Lynch mines, both rich in galena ores and showing fine bodiee of ore. They are now being worked. The com-company in all six minee. The furnace property consists of a euitable building, 30 horse-power engine, and two furnaces of 35 tons capacity for 24 hours—thus smelting 70 tons per day. About 27,000 hnshele of charcoal and 900 tons of ore on hand, ready to start up with.

The Jackson Mining Company,

Has a capital stock of $5,000,000, in 50,000 shares; J. D. Fry is President, and H. C. Kibbe, Secretary. The Jackson Company's claim is on the same ore belt as the Phœnix, Eureka Consolidated, and Richmond mines. At the opening of the mine, some very rich ore was found near the surface, and the principal work done was when the ore was first etruck, until the past few months, whsn later developmente have shown that the pitch of the ore channel was to the north, and with the elope of hill corresponding with the ore channel of Ruby Hill and Ajax Hill. The company have up a new whim, and a double shaft down a depth of 170 feet, and well timbered. It will be eunk 300 feet before drifting, unless the ore channel is cut eooner. This claim adjoins the Phœnix on the east, and from its location must etrike ore at a greater or less depth. The claim is under the same euperintendency as the Phœnix. One-half mile east of the Star Consolidated above mentioned, is the property of the

Louisville M. Co.,

Lately incorporated, with $5,000,000 capital, in 50,000 sharee; John Howell ie Supt. This company own some 8 or 10 ledges, all of which are situated on "Adame Hill;" it is little developed as yet, but eaid to have rich ore in eight. Next, going south, is the

Ruby Hill Tunnel Co.,

Which ie not incorporated. Thie Co. have a tunnel in 140 ft. in ore; it is located on the north eide of Ruby Hill; working 6 men regularly. Next in order above are the minee of the

Eureka Con. M. Co.,

Which is an incorporation of $5,000,000 capital stock, with 50,000 ehares. G. T. Lawton, President; W. W. Traylor, Secretary and W. S. Keys, Superintendent. The mines of this incorporation are located on Ruby Hill, 2½ miles southwest of the town of Eureka, and consiste of 15 different locations, taking up abont four-fifths of the entire hill, the majority of which are covered by U. S. patente.

Their developments and improvemente consist of 10 different shafts, varying from 70 to 225 feet deep, following the ore doposite, which vary from vertical to an angle of 45 deg.; 120 men find regular employment in this mine; extracting 120 tons daily (24 hours). They have one tunnsl 657 ft. in lsngth, with a branch tunnel 208 ft. long; this tunnel taps the ore bed at 175 ft. from the eurface. Arrangemente are being made to work by steam hoieting apparatus, now in course of construction, when it is expected that nearly douhle the amount of ore will be taken out daily. The ore contains lead, silver and some gold; 20 per cent. lead, $28 in silver and from $20 to $30 per ton in gold. The ore ie brought by teams to the oompany's

Smelting Works,

Which are located in the euburbs of the town of Eureka, 2½ miles distant from the mine, at tho cost of $2 per ton. This company's smelting furnaces are considered the most extensive in the world, covering an area of 200 feet long by 100 feet wide, and run by a 40-horse power engine, driving four of Sturtevant'e blowers of the largest size, and one rock-breaker of the Blake pateut, largest size, which has a capacity of reducing 180 tons daily. With their new furnaces 250 tons of metal will be turned out daily. They are expected to be in rnnning order by August 1st, this year; 75 men are regularly employed at this establishment.

Vein Formation.

The lodes are considered regular contact veins. The front vein is encased in limestone, hoth hanging and foot-wall varying from 10 to 125 feet thick, the back vein encased with a limeetone hanging wall and a quartzite foot-wall. Thie vein is 300 feet in width; the ore hody varies from a few feet up to 40 or 50 feet in width. There are thought to be from 40,000 to 50,000 tons of ore in sight. The average run of bullion for the past two month was 410 tons monthly; 11 tons per day now. On the advent of their new engines 600 tons of bullion will, I am informed, he turned out monthly. Next in order is the

Richmond Consolidated M. Co. (Limited.)

This company are ownere of the Richmond, Colorado, Virginia and Tip Top mines—all in Ruby hill, about two miles in a westerly direction, from the town of Eureka. The smelting works of the company are situated in the southern end of the town, upon the sito of the reduction worke of the old Richmond mining Company.

Prof. R. A. Fisher (formerly of the University of California) assumed the management upon transfer of the property to the present owners, and immediately commenced opening up the mine on an extentensive scale, and enlarging and improving the smelting works. These are now, in respect to the facilities for handling ore and charcoal by a complete eystem of railwaye and other arrangements for eaving labor, and above all, preserving the health of the workmen, the model smelting worke of the Pacific Coast. One of the most valuable of the improvements rsferred to is the

Utilization of the Waste Wind.

By a moet simple contrivance, the wind can be partially or entirely turned from the interior of the furnace and made to pass through a series of pipes placed outside the furnace and under a hood that completsly surrounde it, and thence up the ventilating shaft in front of the furnace. During ths process of "barring out," all the wind thrown by a No. 8 Sturtevant Blower paeses through the ventilating shaft, and the result ie that the workmen at the Richmond furnace are no longer "leaded"—(poisoned by lead fumes.) The universal adoption of Prof. Fisher's systsm must be only a question of time at any lead emelting works where the health of the workmen is at all considered.

Anothsr valuable invention of Prof. Fisher, is a very simple coutrivauce for detecting a

Leaky Tweer.

Tweere often burn out or spring a leak, and the result is that a stream of water is poured into the furnace. Hitherto the only method by which to discover a leaky tweer was by removing tweer after tweer from the furnace, until the impsrfect one was discovered. By thie invention every tweer in a furnace can be perfectly tested in a few minutes.

There is but one furnace now running at the Richmond reduction works, but this is of moneter eize. It has smelted 70 tons of ore in 24 houre. It reduces on the average ahout 2,000 tons per month. A furnace of still greater capacity is now in process of rapid construction.

I was informed that the

Expense of Reducing Ore

At the Richmond furnace, according to laet report made to the Board of Directors wae $13.02 per ton, against $19.12 per ton—the cost of reducing 18,325 tons at the emelting works of the Eureka Con. M. Co's furnace—$6.10 per ton. A nice little dividend on 2,000 tons per month.

The queetion of

Supplies of Fuel

Will be a serious one in the future, with the emelters of Eureka Dietrict. The manager of the Richmond, seems to have taken time by the forelock. The charcoal bine of the company have a capacity of about 300,000 bushels, and are already about half full. We were informed that on or before December 1st, the bins (notwithstanding the enormous monthly consumption of charcoal) would be filled—to furnish a supply for the six months following. Such an amount of money locked up in charcoal requires precautionary measures against firo. These are abundant at the Richmond Furnace. A wooden tank holding 16,000 gallons, stands (filled with water) upon the hillside, elevated 100 feet above the furnace floor and a second tank (entirely built of stone), holding 11,000 gallons at a less elevation, supplies the tweers with water. A 12-inch Cameron steam pump, placed in the well thirty feet below the surface, furnishes a most abundant supply of water, clear as crystal. In case of fire, the water can be at once turned off from the stone cistern, and the whole force of the pump brought into use on the fire.

The Richmond Mine.

We did not visit this mine, but learned from the best authority the following facts

in regard to it. Since September 1st, there has been raised nearly 11,000 tons of ore. This vast amount was raised entirely by windlass. During the present week a powerful donkey engine has been put into successful operation. The engine was built by Messrs. Hawkins & Cantrell of San Francisco, after a new pattern designed by this firm.

We learn that the body of ore in this mine is immense—the breadth of the vein at one point reaches one hundred and thirty feet, the breadth of timbering probably exceeding anything of the kind in the world. It has been predicted that the Richmond never could be so securely timbered as to stand. But the skill and experience of Mr. Patrick Rossiter, the foreman, has overcome every obstacle, and the interior of the mine is to-day as safe as before any of the ore had been worked out.

The ores of the Richmond mine are the so called "carbonates" (of lead), but contain as well a certain amount of galena. Experience has proven that as the ore is richer in lead it contains more silver and less gold. The furnace product ("base bullion") of an assay value of $300 or more per ton is shipped by teams to Palisade, (85 miles distant,) and thence on C. P. R. R. to San Francisco. In San Francisco it is either sold to Selby & Co., or shipped thence to New York.

Charcoal.

This interest, in this section, is one of the first, for it is the fuel that is used by all of the mills and smelting works in the district. Among the principal dealers in this line in Eureka are Whisler, Reilly & Lockwood. This firm burn and dispose of from 700,000 to 1,000,000 bushels annually, employing 400 men and upwards in the business. This coal rates at from 30 cts. to 35 cts. per bushel; 78 yoke of cattle are owned and brought into requisition by this one firm. The coal kilns are located from 8 to 35 miles distant from Eureka.

Home Ticket S. M. Co.

This company's mines are situated about 3¼ miles southwest from the town of Eureka. The Home Ticket proper has an incline shaft on it of 143 ft. deep at an angle of about 35°. The ledge or vein is pitching in the hill to the northwest. The body of ore is about 7 ft. wide—value of ore from $75 to $80 per ton in silver and from 20 to 30 per cent. in lead. Adjoining that on the east is the "Walter," which has a shaft down perpendicular 100 ft. showing a continuous body of ore. At a depth of 100 ft. the body of ore pitches to the northwest. Adjoining that on the east is the "Selby" mine, which has a shaft down about 50 ft., showing ore from top to bottom.

Southwest is the "Oro Cash"—with a shaft sunk 58 ft. deep perpendicular, ore pitching to the northwest. P. H. Smith is Supt. of the above mentioned mine. Southwest of this is situated the

Orange Mine,

The property of Dr. J. A. Nesbit; a shaft is down on this mine 320 feet, with a drift 80 feet to the west in ore, working some 8 men. They have on hand about 100 tons of ore and have never used one pound of powder to get it out. Mr. N. has shipped during the last year over $20,000 worth of ore, gross. Above the Orange on the same mountain, is located the property of the

Lander Cons. M. Co.,

An incorporation of $5,000,000 in $50,000 shares. John Harrold is Superintendent. This company own five different mines or locations; have a shaft down 50 feet deep, and some ore on the dumps. Next in order comes the

South Eureka M. Co.,

An incorporated mine developed to a depth of at least 100 feet by shaft, working about 6 men, under charge of Major Drieshach. There are some 1,200 other different locations in this district, not above enumerated, all of which are more or less developed, and are now being worked. There about 60 tunnel locations under the the new law.

The Coy Hill Mines.

Some of the very best milling ores in this district are of recent discovery, and this discovery has an important bearing on the future of the district, from the fact that it is a real development of milling ores in quartzite formation, the general opinion being that such veins are apt to prove true fissures.

Coy Hill, on which this recent discovery was made, is located on the west side of Eureka Valley, nearly opposite the mouth of New York cañon. The mines were first located and brought into notice about the first of April last by Geo. W. Kinney, the District Mining Recorder, and M. G. Cavanaugh. They consist of a series of *gash* veins, having an east and west course, and spreading north and south a distance of seven or eight hundred feet. These gash veins are from a few inches to fifteen and eighteen feet in thickness, and yield fine ores; assays varying from $30 to $2,000 per ton. About fifty tons of ore have been worked at the Lemon Co.'s mill and the Richmond furnace, running from $109 to $175 per ton.

The Paul Jones, Wild Rover, Selden and Dick mines show the best ores. The Bonito, Winnemucca, Douglass, Horse Shoe and Lassie also show good ores, but are undeveloped.

The quartzite formation extends from Secret Cañon to and terminates in Coy Hill, a distance of fully three miles, and is yet to a great extent to be prospected.

The Phenix and the Lemon Mill and Mining companies are among the important companies here that I failed to get any particulars of. From White Pine in my next.

L. P. MO.

Scientific Progress.

Vegetable Physiology.

Some interesting researches have lately been made into the character and movements of the chlorophyl grains in the cells of leaves. Sachs was the first to discover that the chlorophyl or green substance of leaves were less intense under the direct sunlight than under diffused daylight. This discovery lead to the further fact that, in the movement of the grains of chlorophyl, they group themselves during the day (but only under the action of the more refrangible solar rays) upon the more illuminated horizontal cell walls, and withdraw at night to the perpendicular walls. The *direct* sunlight causes the same movement of the green particles that darkness does.

In the action of light in assimilation, in the decomposition of carbonic acid and in the formation of chlorophyl, all the researches go to confirm the generally received view that such phenomena are dependent solely upon luminous intensity, and that the most refrangible rays are most efficient. It is found that in plants where

White light decomposes	100	parts of	carbonic acid,		
Red and orange	"	32.1	"	"	"
Yellow	"	46.1	"	"	"
Green	"	15.0	"	"	"
Blue, indigo, violet	"	7.6	"	"	"

As to the phenomena which result from the absence of light, Kraus has studied the difference between stems and leaves when subject to the bleaching effect of the direct rays of the sun, and has found that the limbs of leaves undergo complete arrest of development in darkness, while the space between the joints of stems elongate much beyond their normal dimensions. The blade of the leaf completes its growth, after coming into the light solely from the materials which it assimilates into starch or its equivlent. Starch in older times is of no use to it. In darkness none of this is produced, and so its growth is arrested.

The Spring Period of the Maple.

Schroeder has devoted much attention to the successive phases presented in the development of vegetation from the ascent of the sap at the moment when the expanded leaves begin to decompose carbonic acid.

The maple, under the latitude of Breslau, "*weeps*" for about a month; the sap rises gradually to a certain level, when it descends again by degrees, in proportion as the development advances. Holes pierced in the trunk, at different hights, enabled this sap to be collected daily; and very numerous analyses keep us informed of the smallest variation in its composition. It always contains sugar, a transitory product of the transformation of the starch accumulated in the tissues during the preceding summer, and destined to become retransformed when it reaches the buds. The proportion is but slight, at the first awakening of vegetation; it increases gradually up to a certain maximum, in proportion as the vital phenomena acquire more intensity; and, finally, it diminishes when the young organs, approaching the term of their development, are on the verge of sufficing for themselves. These facts are perfectly in accordance with such a theory of growth as has been established by the researches of modern observers. The albumen and the mineral salts and their dissemination in the sap, at different hights at the same moment, and at different periods, is exactly governed by the different phases of development.

The Microscopic Examination of the Bud.

The different substances which are called upon to assist in the development of the young leaf are traced by means of the microscope and re-agents from cell to cell. Two, especially, give origin to detailed observations, namely starch and tannin. The dissemination of the former in the different tissues, its transportation through the starchy layers of the fibro-vascular bundles, its disappearance toward the point of vegetation, at the surface of which it speedily reappears as cellulose—all these different phases have been carefully studied and followed up. As to tannin, it is developed in all the cells of the bud; and when once it has made is appearance it persists there, without appreciable change. Its function has greatly embarrassed M. Schroeder, as he was unable to recognize in it any of the characters of an excrementitial product, properly so called. The fact that it is constantly to be found in the youngest tissues (in which life is most intense), seems to indicate that it is a sort of final product, charged with a still unknown office in the life of the cell. If the true chemical nature of this substance were better known, the solution of the problem would, perhaps, become easier.

The above has been condensed from a communication in the July number of the *American Journal of Science*.

The Pacific Ocean.—Under the authority of an Act passed at the last session of Congress, active preparations are now being made for a hydrographic survey of the Pacific Ocean, from the fortieth parallel of north latitude to the fortieth of south latitude. Seventeen lines parallel with the equator and 5°, or 350 miles, apart are to be run across the ocean, and frequent observations are to be taken on each line, of the depth and temperature of the water, the character of the bottom, the course and speed of the currents, etc. This programme is not adapted to immediate national and commercial interests. The survey *should* begin at Behring Straits and be finished thoroughly to the Northern Tropic before anything is done in the Torrid or South Temperate Zone. This selection of the parallel of 40° as the northern boundary of the survey would leave Oregon, Washington and Alaska out in the cold.

A Singular Meteor.—A meteor fell in Westphalia about a year ago which, on analysis, proves to consist of but a single mineral—bronzite, made up of silica 54.51, protoxide of iron 17.53, protoxide of manganese 0.29, magnesia 26.43, lime 1.04, alumina 1.26=101.06. Only one other mineral was ever found similarly constituted; while only two others have ever been found to consist of a single mineral only, one of which was olivine and the other enstatite.

An Enormous Ruby.—Prof. Sheppard, of Amherst College has recently made a valuable addition to his splendid cabinet of minerals. This addition consists of a ruby of enormous size—the largest in the world—weighing 316 pounds! It was discovered in one of the Southern States, and was about to be taken to Europe when the Professor secured it by an offer of $300. Cheap enough.

The Planet Jupiter.—*Cornhill* contains a very interesting article entitled: "A Giant Planet," in which the late observations on the planet named are admirably collated. The substance of these observations lead to the belief that this planet is in an incandescent state; that it is in reality a star to its own system of planets, or moons, as indeed all the planets having attendant satelites no doubt once were.

The Smell of Onions.—In the onion there is found a peculiar oil containing sulphur, called the sulphuret of allyle. The odor of the breath after eating onions is caused by the presence of a small quantity of this oil, which is exhaled when breathing.

Mechanical Progress.

Steam in its Fickle Moods.

A writer in the *Railway Review* says: The notion prevails that a sound steam boiler, well supplied with water, will never burst at any reasonable pressure. Unfortunately engineers act upon this hypothesis, and still more unfortunate is it, that *when not to do so*, and *why* is almost impossible of demonstration. Facts, well known to every practical engineer, show that every little while a boiler which, under apparently identically the same circumstances in every particular, on one day makes steam enough, on the very next day will not, and can not be made to generate enough for more than light duty. Train dispatchers occasionally find their trains thrown into confusion from unexpected delays, and upon careful inquiry into the cause, are informed that for some unexplained and mysterious reason, the engine men cannot make steam enough to do their ordinary work.

Again every little while a boiler explodes, for which no possible cause can be assigned. And not only this, but such like "acts of God," very often follow each in quick succession for short periods. Three were reported on one day, within the past year and only a hundred or so miles apart. In short, it seems to be conceded that steam, in boilers, may be generated in greater volumes in the same given time (and that, too, very quickly) on some days than upon others; and hence it is reasonable to conclude that what would be prudent management of a boiler at one time, might be very imprudent at another.

To ascertain this accurately is certainly a desideratum. It may be that the condition of the atmosphere has something to do with the abnormal eccentricities of steam boilers. A close watch of barometric changes at those times when the generation of steam is found difficult, electro-metric observations—as far as instruments are perfected for that purpose—in short, in search into "Æther" by competent scientific analysts, might, possibly, reveal their causes and supply the engineer with means of knowing when danger threatens, just as our seamen are warned and protected by the storm signals which have been found so beneficial.

As yet, whatever investigations, if any have been made in this direction with reference to such an end, are not made known. Probably very little inquiry has been had; owing, perhaps, to the fact that so few of our practical, mechanical engineers are scientific men. Many, indeed the great majority, are skillful in manipulating their engine and faithful and fearless in the discharge of duty. But these men who are the very ones to know, and who do know, when strange phenomena are manifested, are not the ones to search for causes. They are not educated to the point where such investigations are possible for, or interesting to them to make. Their knowledge ends with their experience of the facts.

We indulge the hope that our meteorologists may take this subject under serious consideration, with a view of ascertaining what are the indications of the atmosphere on those occasions so unfavorable to the generation of steam; the great obstacle being, after all, that they can not know of them at the precise time.

In this connection it is naturally suggested, as we have repeatedly urged upon the attention of railway managers and others interested in the employment of steam, that our practical engineers should be afforded a good educational institution, where preliminary training would beget a taste for, and supply the means of making scientific researches, with the view to elucidating many just such phenomena as we hint at. And we have faith to believe that the day is near when they and their laws and operating causes will be fully understood, and men will wonder how this knowledge could have been dispensed with so long with so few dissasters.

American Locomotives for Europe.—The Baldwin Locomotive Works of Philadelphia, build locomotives cheaper and better than similar works in England or Belgium, and this establishment exports engines constantly to foreign countries. Its business in this particular line has not been restricted by any inability to compete against European builders, but solely by the enormous extent of the American market. Since the accession of the present management, M. Baird & Co., the concern has been enlarged very greatly, and is now producing at the rate of four hundred and thirty locomotives a year. It is now working upon a Russian contract, but at the same time is making engines for all parts of America.

Indelible Ink for Zinc Labels.—A New York correspondent of the *Gardener's Monthly* in relation to making zinc labels, lately inquired for in the *Western Rural*, says: First let the label oxidize a little by dipping it in water for a day or two before using, and then write with a common lead pencil. We have seen labels in use for twelve years so written, as "black as ink," and with all the appearance of lasting for half a century. This plan was discovered, we believe, by Col. Wilder, and was first communicated by Mr. E. V. Petticolas, of Cincinnati.

Paper as a Means of Defence.—Colonel Muratori, says *Engineering*, has made a successful application of paper as a defensive material in the construction of a cuirass, which, weighing the same as the ordinary service cuirass, is capable of far greater resistance. It will turn a regulation pistol bullet fired from a distance of three feet, and is equally capable of resisting a bayonet thrust. The inventor claims that the fabric can used for armor plating ships of war, and especially suitable for covering bottoms of vessels to protect them from explosions of torpedoes.

Another Monster Ship.—It is said that specifications are at present in the hands of several Clyde shipbuilders for a vessel to be built for the National Steamship Company, of dimensions only second to the Great Eastern. Her length is to be 576 feet over all, and she is to be fifty feet beam and thirty-five feet in depth. It is expected that the great steamship will make the voyage from Liverpool to New York in seven days.

Puddling by Petroleum.—It is asserted by the French technical journals that the experiment of using petroleum as fuel in the puddling furnace, which has been in progress at a large iron producing establishment during three months, has proved itself to be very successful. In point of convenience, efficiency and in the superior quality of the iron produced, it is asserted that petroleum affords the best fuel that has yet been employed.

A machine at New Haven performs the whole process of making needles without the manual labor of any person, and turns out 30,000 to 40,000 of them daily. Another machine picks them up and arranges them heads and points together, and the third piece of mechanism puts them into paper.

Railway Progress.—At the commencement of 1871 Europe had 63,182 miles of railway in operation; America had 54,438 miles, of which 50,000 miles were in the United States; and Asia, Africa and Australia had 6,495 miles. The total milcage for the world was 123,115 miles of railroad.

MINING SHAREHOLDERS' DIRECTORY—Meetings, Assessments and Dividends.

[Compiled Weekly from Advertisements in Mining and Scientific Press and other S. F. Journals.]

ASSESSMENTS.

Name of Co.	Locatiou.	Secretary.	Office in S. F.	Assm't.	Levied.	Delinq't.	Sale Day.
Alps M. Co.	Ely Dist.	Chas. S Neal.	419 Cal. St.	50.	June 18.	July 26.	Aug. 19.
Arizona and Utah.	Gold Hill.	Chas. H. Fish.	419 Cal St.	50.	June 4.	July 10.	July 31.
Arkansas M. Co.	Ely Dist. Nev.	Geo. Davidson.	734 Montgry St.	25.	July 23.	Aug. 20.	1Sept.123.
Baltimore American.	Gold Hill Nev.	J. L. King.	411 Cal. St.	$1 00.	July 13.	Sept. 2.	Sept. 20.
Bellevue M. Co.	Placer Co.	T. F. Croniee.	409 Cal. St.	50.	June 20.	July 29.	Aug. 19.
Bowery Cons.	Ely Dist., Nev.	Chas. E. Elliot.	419 Cal St.	75.	July 9.	Aug. 15.	Sept. 9.
Cherokee Flat B. G.	California.			$1 00.	June 8.	July 10.	July 27.
Corona Cons. M. Co.	Eureka Dist.	T. F. Croniee.	409 Cal. St.	10.	June 25.	July 31.	Aug. 22.*
Crown Point Ravine.	Gold Hill.	J. M. Buffington.	Merchants' Ex.	$5 00.	May 4.	June 20.	July 29.
Coney M. Co.	Lyon Co., Nev.	Geo. R. Spinney.	320 Cal. St.	75.	July 3.	Aug. 6.	Aug. 26.
Diamond S. M. Co.	White Pine.	W. H. Codington.	402 Montgomery.	15.	June 29.	Aug. 1.	Aug. 20.
Eckendorn M. Co.	Calaveras Co.	Louie Terme.	513 Jackson St.	$3 00.	June 8.	July 12.	July 28.
Empire M. Co.	Gold Hill, Nev.	W. E. Dean.	419 Cal. St.	50.	July 10.	Aug. 13.	Sept. 2.
Excelsior M. Co.	Cope Dist., Nev.	Frank Swift.	415 Montg'ry.	$2 00.	June 29.	July 27.	Aug. 19.*
Exchequer M. Co.	Gold Hill, Nev.	D. T. Bagley	401 Cal. St.	$3 00.	June 26.	July 31.	Aug. 22.
Francis M. Co.	Mariposa Co.	T. F. Croniee.	409 Cal. St.	$1 00.	June 18.	July 29.	Aug. 13.
Gillis G. M. Co.	Tuolumne Co.,	Daniel Buck.	331 Montgry St.	10.	July 20.	Aug. 19.	Sept. 20.
Golden Chariot M. Co.	Idaho.	Louis Kaplan.	Merchants' Ex.	$2 20.	June 22.	July 23.	Aug. 17.
Dutch Flat B. ·. Co.	Cal.	D. T. Bagley.	401 Cal. St.	$1 25.	June 11.	July 10.	Aug. 6.
Hudson G. M. Co.	Plumas Co., Cal.	J. L. King.	411 Cal. St.	10.	June 18.	July 27.	Aug. 27.*
Ida Elmore M. Co.	Idaho.	Wm. Willis.	419 Cal. St.	$3 00.	May 21.	June 29.	July 21.
Ingoman M. Co.	Ely Dist., Nev.	Chas. S. Neal.	419 Cal. St.	25.	June 5.	July 15.	Aug. 9.
Jacob Little M. Co.	Virginia, Nev.			$5 00.	May 30.	July 1.	July 31.
Kincaid Flat M. Co.	Tuolumne Co.	R. H. Cornell.	220 Clay St.	$3 00.	July 17.	Aug. 23.	Sept. 14.*
Kentuck M. Co.	Gold Hill, Nev.	Frank Swift.	415 Montgry.	$10 00.	June 12.	July 16.	Aug. 5.
Kentucky M. Co.	Ely Dist., Nev.	J. P. Cavallier.	509 Sac. St.	10.	July 2.	Aug. 31.	Aug. 5.
Lane & Kurtz M. Co.	Brit. Columbia.	B. B'Minor.	411½ Cal. St.	$5 00.	July 23.	Aug. 26.	Sept. 14.
Lemon M. & M. Co.	Eureka Dist.	I. T. Millikin.	608 Merchant.	$1 00.	May 29.	July 6.	Aug. 10.
Louise S. M. Co.	Ely Dist., Nev.	Wm. H. Watson.	302 Montgomery.	10.	July 3.	Aug. 10.	Sept. 7.*
Mammoth S. M. Co.	White Pine.	J. L. King.	411 Cal. St.	10.	June 27.	Aug. 1.	Aug. 21.
Morning Star M. Co.	Alpine Co., Cal.	O. H. Bogart.	Merchants' Ex.	$1 00.	July 12.	Aug. 20.	Sept. 14.*
National M. Co.	Nye Co., Nev.			50.	July 4.	Aug. 19.	Sept. 14.
Nevada L. and M. Co.	Elko Co., Nev.	Wm. H. Watson.	302 Montgomery.	8.	July 18.	Aug. 31.	Sept. 19.*
Newark M. Co.	Ely Dist., Nev.	D. T. Bagley.	401 Cal. St.	50.	June 12.	July 22.	Aug. 17.
Newton Booth Cons.	Ely Dist., Nev.	R. F. Scott.	338 Montgomery.	30.	June 8.	July 12.	Aug. 5.
Noonday S. M. Co.	White Pine.	Thos. H. Fish.	419 Cal. St.	25.	July 2.	Aug. 5.	Aug. 26.
Norman S. M. Co.	Amador Co.	Cal. Wm. H. Watson.	302 Montgomery.	5.	June 27.	Aug. 1.	Aug. 22.*
Ophir S. M. Co.	Virginia. Nev.	Joe. Marke.	Merchants' Ex.	$5 00.	July 17.	Aug. 21.	Sept. 11.
Overman S. M. Co.	Gold Hill, Nev.	T. J. Owens.	Cor. Cal. & My.	$4 00.	June 5.	July 18.	Aug. 17.
Pacific Borax Co.	Nevada.	R. B. Noyes.	Merchants' Ex.	15.	July 5.	Aug. 17.	Aug. 30.
Pennsylvania.	White Pine.		331 Montgomery.	40.	June 14.	July 24.	Aug. 13.
Phœnix S. M. Co.	Eureka, Nev.	Chas. H. Fish.	419 Cal. St.	$1 00.	July 6.	Aug. 12.	Sept. 2.
Piermont M. & M. Co.	White Pine.	J. W. Clark.	418 Cal. St.	60.	July 10.	Aug. 12.	Sept. 10.*
Pioche W. Ex. Co.	Ely District.	T. W. Colburn.	419 Cal. St.	30.	July 12.	Aug. 22.	Sept. 16.
Potomac S. M. Co.	Nye Co. Nev.	M. Lynch.	316 Cal. St.	50.	June 6.	July 15.	Aug. 19.
Roxby M. Co.	Gold Hill, Nev.	J. Perrault.	318 Cal. St.	50.	June 3.	July 6	July 27.
Sapphire S. M. Co.	Gold Hill, Nev.	J. F. Lightner.	438 Cal. St.	30.	July 16.	Aug. 17.	Sept. 6.
Senator S. M. Co.	Nevada.	T. B. Winzard.	3?8 Cal. St.	25.	July 6.	Aug. 10.	Aug. 30.
Southern Gold Hill.	Gold Hill, Nev.	David Wilder.	Merchants' Ex.	25.	June 28.	Aug. 3.	Aug. 24.
Spring Mt. Tunnel.	Ely Dist., Nev.		419 Cal. St.	30.	July 9.	Aug. 16.	Sept. 7.*
Star Cone. M. Co.	Eureka Dist.	G. R. Spinney.	320 Cal. St.	25.	June 20.	July 29.	Aug. 20.
Sterling M. Co.	Ely Dist., Nev.	H. C. Kibbe.	419 Cal. St.	50.	July 15.	Aug. 21.	Sept. 12.
St. Louis M. Co.	Placer Co., Cal.	T. F. Croniee.	409 Cal. St.	$1 00.	July 6.	Aug. 3.	Aug. 27.
St. Patrick M. Co.	Placer Co., Cal.	D. A. Jennings.	401 Cal. St.	$3 00.	June 19.	July 27.	Aug. 19.
Tellurium G. & S. M.	Amador Co. Cal.	Wm. H. Soery.	K'ny & Clay.	$1 00.	July 22.	Aug. 23.	Sept. 16.
Union G. M. Co.	Sierra Co., Cal.	A. K. Durbrow.	Merchants' Ex.	$1 00.	June 25.	July 29.	Aug. 19.*
Wm. Penn Cone.	Nevada.	J. F. Pope.	6 Montg'ry St.	10.	July 3.	Aug. 5.	Sept. 2.*
Winnemucca Chief.	Nevada.	T. F. Croniee.	409 Cal. St.	15.	June 18.	July 30.	Aug. 20.*
New York Cons. M. Co.	Gold Hill, Nev.	H. C. Kibbe.	419 Cal. St.	50.	June 21.	July 22.	Aug. 9.

MEETINGS TO BE HELD.

Name of Co.	Location.	Secretary.	Office in S.F.	An'l or Sp'l.	Date.
Alhambra Hill M. Co.	White Pine, Nev.	H. G. Langley.	612 Clay St.	Spccial.	Aug. 19.*
Bismarck S. M. Co.		F. Swift.	415 Montgomery St.	Annual.	Aug. 6.
Cons. Gold Hill Quartz.	Storey Co., Nev.	R. Wegener.	414 Cal. St.	Annual.	Aug. 3.
Genesee Valley M. Co.		F. Swift.	415 Montgomery St.	Annual.	Aug. 1.
Ida Elmore.	Idaho.	Wm. Willie.	419 Cal. St.	Annual.	Aug. 5.
Lucin M. Co.		J. W. Clark.	418 Cal. St.	Annual.	Aug. 5.
Oakville Quicksilver Co.	Napa Co.	W. H. Mott.	432 Montgomery St.	Annual.	Aug. 31.
Occidental M. Co.		C. E. Elliot.	419 California St.	Annual.	Aug. 17.
Pride of the Mountain.	Winnemucca Dist., Nev.	T. W. Colburn.	419 Cal. St.	Annual.	Aug. 12.
Puehla G., S. & C. M. Co.	Humholdt, Nev.	A. J. Chambers.	404 Montgomery St.	Annual.	July 29.
Pennsylvania M. & M. Co.	White Pine, Nev.		331 Montgomery St.	Special.	Aug. 14.
Providence M. Co.		W. H. Knight.	331 Montgomery St.	Annual.	Aug. 24.
Tintic Eureka S. M. Co.		J. L. King.	415 Montgomery St.	Annual.	Aug. 5.

LATEST DIVIDENDS—Within Three Months.

Name of Co.	Location.	Secretary.	Office in S. F.	Amount.	Payable.
Belcher M. Co.	Washoe.	H. C. Kibbe.	419 California St.	$30.	July 5.
Black Diamond Coal Co.	California.			½ per cent,	June 28.
Crown Point G. & S. M. Co.	Washoe.	C. E. Elliot.	419 California St.	$3 00.	July 5.
Eastport Coos Bay Coal.	Oregon.	I. L. Pool.	Merchants' Ex.	$5 00.	July 12.
Keystone Quartz M. Co.	California.	L. Vesaria.		50.	July 10.
Meadow Valley M. Co.	Ely Dist., Nev.	T. W. Colburn.	419 California St.	$1 00.	June 20.
Pioche S. M. Co.	Ely Dist., Nev.	C. E. Elliot.	419 California St.	$1 00.	July 5.
Raymond & Ely M. Co.	Ely Dist., Nev.	A. J. Moulder.	419 California St.	$7 00.	July 5.

—* Advertised in this journal.

STOCK SALES FOR WEEK ENDING JULY 25—S. F. Stock and Exchange Board.

NAMES OF COMPANIES.	Feet in Mins.	Shs. in ft.	Total Shs.	FRIDAY. Shs	Prices.	SATURDAY. Shs	Prices.	MONDAY. Shs	Prices.	TUESDAY. Shs	Prices.	WEDNESD'Y Shs	Prices.	THURSDAY. Shs	Prices.
Alpha	300	20	6000	50	53½@55	40	55 @56	450	65 @80	290	65 @69	290	58 @64	110	55 @57½
Alps	800	37½	30000									100	3¾	265	5¾
American Flag	2,600	11½	30000	320	51	280	22½@23½	250	22½@23	493	22 @23	1020	21 @22	855	20 @21
Belcher	1,040	10	10400	70	1035@1040	70	1070@1080	50	1060	22	1050@1055	35	1050	85	1045@1075
Baltimore	1,200	20	24000	250	3 @ 3¼	480	3 @ 3¼	130	3¼	350	2¾@ 3	250	3		
Bowery	1,000	30	30000	300	2¾	100	2¾	50	3	50	3	110	2¾	200	2¾
Bacon				55	75 @80	200	77 @80	160	82½@85	15	90	40	82½@85	30	75
Buckeye			16000	50	3¾			25	3¾			10	5¼		
Chollar	2,800	10	28000	140	107 @114	83	115 @117			150	119 @122	200	110 @114	122	111 @116
Caledonia	5,000	4	20000	385	60 @63½	140	63 @64	170	64 @67	185	68 @72	600	69 @72	570	64 @68
Cons. Virginia	1,160	20½	23600	70	38 @38	190	36 @37	250	37½@39	545	39 @41	330	39 @42	405	41 @42½
Confidence	130	192	24960	800	0¾@1¼	410	1¼@12¾	1555	12¾@14	390	12¾@13¾	265	12	330	12 @13½
Crown Point	600	166⅔	100000	321	145 @156	230	148 @150	170	147 @149	150	145 @147	260	146 @154	270	153 @157
Daney	2,000	12	24000	75	2	80	2¼	20	2¾	190	2¼@ 2¾			125	2 @ 2½
Eureka Cons			5000	1480	22½@23½	560	22½@23¼	685	22½@23	485	22 @23¾	330	23 @23½	370	22 @24
Eureka	1,650	12	2000					100	16	24	16				
Exchequer	400	20	8000	50	16 @17	50	17 @17½	45	22 @25	220	22 @25½	2200	15½@23	35	19
Eclipse	70	357	25000	90	10½@10¾	295	11 @12	2200	13½@14½	925	13¾@14½	800	12¾@14	1301	11½@14
Empire Mill	75	16	1200	2896	19 @11¼	1050	14¾@15½	2529	18 @20	865	17 @17½			1093	14 @15½
Gould & Curry	1,200	4	4800	72	175 @190			105	192 @200	61	204 @206	106	210 @212	40	192 @195
Golden Chariot	750	13½	10000			30	6	85	8	35	12	75	12 @14	120	113 @114
Hale & Norcross	400	40	16000	280	80 @85			255	95 @100	475	100 @107	290	95 @108	270	98 @102
Huhn & Hunt	3,600	8½	30000	125	2¾@ 3	300	2½	300	2¾@ 3	500	2¾@ 2¾	200	2¼	400	3¼@ 3½
Ida Elmore	1,300	17½	10000	300	16½@17	30	16	75	17 @18	730	17 @19	350	19 @21	265	17½@19
Imperial	184	543	99000	930	14 @14¾	1220	15½@15¾	1500	16 @16½	1020	14½@15¼	1025	14½@15½	3300	11½@14¾
Julia	2,000	15	30000	370	6½@ 7	260	6½	100	6¾	450	6¾@ 7¼	30	7	330	6¾
Justice	3,000	10	30000	170	17 @18	170	17 @18	110	16	270	16 @16¾	125	15½@16		
Kentuck	95	21	2000			5	310			30	310 @315	2	305		
Knickerbocker	1,200	20	24000	1175	8 @ 8⅞	980	9 @ 9½	300	9¾@10	580	9¾@10	1385	9¾@10¾	1113	8½@ 9
Mammoth	1,800	20	36000	50	60c	100	60c	100	59c	75	56c	100	60c	50	50c
Meadow Valley	24,923	8¾	8000	163	15¾	320	15¾@15¾	165	15½@16	275	16 @16¾	275	16½@17¼	535	17 @17¾
Mahoney	72	137½	10000	210	18 @18½	245	19 @20	355	21 @22	70	19 @22	1200	19 @20	200	19½@20½
Ophir	1,400	12	16800	610		80	42 @43½	145	44 @45	605	45½@47½	325	46½@47½	290	47 @50
O. H. Treasure	800	268⅞	21333	35	8¾	80	8 @ 8½	150	8	90	6¾@ 7¼	425	7 @ 7⅝	150	7¾@ 8
Overman	1,2 0	10	12400	3089	@90	2590	@91	160	92 @94½	85	85 @97	300	90 @100	220	91 @95
Occidental	800	26	40000					50	2	150	2½	250	2		
Pioche	1,000	20	20000	355	22 @23¾	493	25 @25½	760	27½@30½	795	33 @34½	1263	36½@39½	1230	28 @32½
Page & Panaca	2,4 0	16⅔	40000			50	2	150	2½			1250	2	100	2
Phœnix			50000	450	3¾@ 3¾	300	3¾@ 3¾	520	3½@ 3¾	650	3½@ 3¾			200	3½
Raymond & Ely	4,000	8	32000	1300	13¾ @140	145	146 @147	1145	145 @147	1145	145 @147	1135	145 @146	1135	140 @145
Savage	800	20	0	190	144 @160	145	152 @160	175	150 @165	511	175 @210	355	193 @210	185	187 @195
Seg. Belcher	160	40	6 0	85	119 @120	115	122 @124	46	125 @126	165	120 @125	205	116 @119	727	115 @117
Sierra Nevada	3,000	7½	20000	205	16 @16¾	20	17	70	15½	815	15½@16¾	80	16¾		
Succor	7,600	3	22800	250	5 @ 5⅝	700	5 @ 5¼	860	5½@ 6	210	5¾@ 5¾	370	5 @ 5½	330	5 @ 5½
St. Patrick	1,800	23⅓	6000												
South Chariot	660	30⅓	20000					200	3½@ 3¾	450	3½@ 3¾	300	3¾	80	3¾@ 4
Wash. & Creole	200	150	30000			25	4			255	5 @ 5⅝			190	4½@ 4⅝
Yellow Jacket	1,200	20	24000	130	141 @144	180	146 @148	260	148 @152	24	155 @162	225	156 @158	360	148 @154
Yule Gravel	400	25	10000					50	2¾						

NOTES.—†—California. *—Washoe. ‡—White Pine. §—Ely District. ¶—Eureka District. ‖—Idaho. ⁞—Nearly. ⁂—Over.

S. F. Stock and Exchange Board.

Thursday, July 25, 1872.

The Sales at the San Francisco Stock Board for the week ending Friday, the 18th inst., amounted to $3,188,000. The feature of the week was the operations in Imperial. The North Star mine raised 106 tons of ore last week, and 130 tons were reduced, leaving 47 tons on dumps. The Hale & Norcross mine turned out over 707 tons during the same period; the Savage 1,037 tons, assaying $27.51 per ton. From the 8th to the 22d inst. $51,000 was shipped from the Meadow Valley mine. The Eureka clean up last week was 675 ounces of gold amalgam. Ore extracted from Crown Point for week ending July 19th, 3,021 tons valued at $107,839.98; ore extracted from Cholar Potosi for week ending July 20th, 920 tons; hullion shipped from Raymond and Ely mine on 21st inst., $33,216, making a total of $280,374 on July account.

News from all the mining Districts is favorable with the exception perhaps of Reese River. The *Reveille* complaine that, with the exception of a few of the principal mines, work is not being pushed with the energy noticeable for some months past. A number of small mines have shnt down, most of them temporarily, and recently the chloriders have been gradually quitting work. The reasons are that they have to wait too long to get their ore worked, and the cost of reduction reuders all low-grade ores—from $30 to $50 rock—utterly valueless. Small operations do not pay. The *Reveille* says the district will have to contend with the latter objection until some cheaper means of reducing their peculiar class of ores ie discovered. Wood, freight and lahor are high. It has heen aserted hy parties who pretend to know, that the ores can he worked to a profit to the mill for $25 per ton, which would render the $40 or $50 rock availahle, hut all efforts to do eo have proved thus far failures.

The developments in the Imperial are proving satisfactory. The Superintendent's letter of the 18th, eaid the ore in the 1,600-fool level showed 9 [feet wide and not yet through. Assays run high, from one-third to one-half gold. On the 19th it showed 10 feet wide. On the 20th the cross-cut ehowed ore 12 feet wide, etill in good face. A letter of the 21st statee that the cross-cut showed ore freely 15 feet wide, and work was stopped on account of indication of water, until a pump could he put in the incline. On the Daney the main shaft is down 612 feet, and they expect to pierce the vein at a depth of 650 feet.

A dispatch from the Pioche mine dated 22d inet. saye that the ore in the face of the drift has come in three and one-half feet wide and averages $350. A dispatch dated the 24th etates: "The face of the drift (80 feet) of the first level has ore three and one-half feet which assays $300; the north winze is down sixteen feet, showing ore two and one-half feet wide, assaying $240; the south winze is down twenty-seven feet; the ore in the bottom, two feet wide, is first-clase."

On Saturday stocks were in good demand and most prices were higher than on the day previous. Compared with highest prices on Friday, Alpha advanced $1; American Flag, $2; Belcher, $35; Caledonia, $2; Chollar-Potosi, $8; Confidence, $1.50; Eureka Consolidated, $1; Hale & Norcross, $8; Imperial, $1; Kentuck, $20; Mahogany, $1.50; Pioche, $3.50; Raymond & Ely, $7; Savage, $5; Segregated Belcher, $2.50, and Yellow Jacket $4. Gould & Curry declined $10; Crown Point, $5; Golden Chariot, $2; Ida Elmore, Justice, Ophir, Original Hidden Treasure aud Overman, each $1.

On Friday considerable activity mauifested itself in Ely District shares, and the transactions were as large as on the previous day. Monday the features were Bacon, Imperial, French, Empire and Eclipse. All the Comstock shares was higher. The Pioche is expected to pay a dividend of at least $1.50 next month. It is understood that the Baltimore, Baltimore American and other mines will he consolidated under the name of the Baltimore Coneolidated Mining Company.

On Friday morning, the 19th inst., stocks were irregular. From higheet rates on Thursday Caledonia advanced $4; Consolidated Virginia and Crown Point each $2; Confidence, $1; Gould & Curry and Hale & Norcross each $5; Justice, $1; Ophir and Overman each $2; Sierra Nevada, $1. Alpha declined $1; Belcher, $16; Chollar-Potosi, $3; Exchequer, $1; Savage, $3; Segregated Belcher $2, and Yellow Jacket $1.

On Monday there was considerahle excitement in the market and prices still advanced. From Saturday's sales Alpha advanced $14, Bacon $10, Caledonia and Consolidated Virginia each $2, Chollar-Potosi $4, Eclipse $2, Exchequer $7 50, Empire $4, Gould & Curry $20, Hale & Norcross $10, Ophir $2, Overman $3, Segregated Belcher $4, Succor $1, Trench $3.50, Yellow Jacket $5. Belcher was $15 lower and Justice $2.

On Tuesday the feature of the market was the continued advance in Gould & Curry, Savage and Hale & Norcross. Compared with higheet morning ratee, Caledonia advance $2, Consolidated Virginia $1, Gould & Curry, Hale & Norcrose and Kentuck each $5, Ophir $2, Overman $3, Savage $53 and Yellow Jacket $7. Alpha declined $1, Bacon and Belcher each $5, Crown Point, Exchequer, Imperial and Segregated Belcher each $1, Empire Mill aud Trench each $2.

On Wednesday the market was etrong at higher pricee. At the afternoon Board prices closed generally higher. Pioche, $4; Raymond & Ely, 2; Savage, $22; Meadow Valley, [$1; Eureka Con., $1; Overman, 4; Gould & Curry, $6; Crown Point, $5; Con. Virginia $1; Chollar, $1. Alpha fell $10; Bacon, $1; Imperial, 50 cents; Empire, $1; Kentuck, $7; Jacket, $1.

To-day stocks were rather weak. From highest rates yesterday morning Crown Point advanced $5; Consolidated Virginia and Ophir each $1. Alpha declined $7; Bacon, $10; Caledonia, $4; Gould & Curry, $17; Hale & Norcross, $8; Imperial, $2.50; Overman, $6; Savage, $15; Segregated Belcher, $2; Yellow Jacket, $8; Confidence, Consolidated Gold Quartz, Eclipse, Empire, Exchequer, Knickerhocker and Trench each $1.

[The laet reports concerning the progress of work and the latest developments in all the prominent mines on the coast, will he found iu our "Mining Summary."]

Mining Summary.

The following ie mostly condeneed from journals published in the interior, in proximity to the mines mentioned.

California.

ALPINE COUNTY.

Good Ore.—Monitor *Miner*, July 13: Extra good ore is coming out No. 3 of the M. & N. W. Co., and also of the lower works of the Schenectady.

AMADOR COUNTY.

Union Mine.—Jackson *Ledger*, July 20: Work was commenced a few days ago. The hoisting works over the main shaft are completed, the water drawn from the mine, and workmen are taking out rock.

BUTTE COUNTY.

Big Lump.—Chico *Enterprise*, July 19: The mines about Nimshew are paying well. Last week the Indian Spring Co. picked up a nugget weighing 36 ozs. The Sigby claims are paying well.

CALAVERAS COUNTY.

Upper Country.—Calaveras *Chronicle*, July 20: Items.—The east chimney of the Prussian Hill ie gradually improving....J. C. Herzer cleaned up 62 tons of assorted quartz at Railroad Flat; No. 1 ore paid $53 per ton; No. 2, $37½ per ton. Over 200 tons on dump, yet....In the Wolverine in raising from the 200-ft. level, on the middle chimney, the pay ore widened to 3 ft., showing free gold all through it. A etreak nearly 10 in. wide will mill not lese than $400 per ton....32 tons of San Bruno ore produced 72 oze. of retorted amalgam....The Soap Root mine has heen honded for a large amount ....Henry & son are running a tunnel to tap two parallel veine, Madre and Valentine, at the depth of about 100 ft. The tunnel is 320 ft. iu lengh; 70 ft. farther, it will cut the Madre; Morse & Co. have some 60 tons of firstrate ore on the dump....Rumor has it that a portion of the Bartolo is about to change hande at a large figure. Late developmente in the shaft prove that the mine is a permanent euccess....Ore iu the Blazing Star shaft is gaining in gold....thc unnsually rich rock in the Wolverine, Bartolo and Blazing Star create considerable excitement.

State of Maine.—A battery of five stamps has recently heen put up and the work of prospecting the vein is being prosecuted with euergy. The ledge is a wide one, and the rock will average $25 per ton.

Crushed.—Ten tone of qnartz from the Sau Bruno mine, Mosquito Gulch, recently crushed in Harris' mill, ehowed an average yield of $70 per ton.

Completed.—Champion & Dunston, who had a contract to run a hedrock tunnel 800 ft. in length, for W. V. Clark, Railroad Flat, have completed the work.

Furgerson.—San Andreas *Citizen*, July 20: The Furgereon mill, at Sheep Ranch, has commenced crushing rock.

EL DORADO COUNTY.

Mendon.—Placerville *Republican*, July 18: Mining prospects are hrightening. Wm. Barney has run a tunnel in the hill on the north side of Stouy Gulch, and is getting hig pay. A Mr. Claypole has run a prospecting tunnel on the south side of Cedar Creek, near Cedarville, which he says pays a dollar to the foot.

Pocahontas.—Placerville *Democrat*, July 20: The mill has been closed for some little time for repaire. It will start up about the middle of next week. The Co. have about 600 tons of good rock on the Dump.

INYO COUNTY.

Bullion.—Inyo *Independent*, July 13: Hiskey & Walker shipped from their Deep Spring mill 10 hare, weighing 3,664 oz., valued at $4,-000, the product of Lida Valley ore.

NAPA COUNTY.

Improvement.—Napa *Register*, July 20: The parties purchasing the Whitton Quicksilver Mine intend in a short time to commence the erection of extensive improvements on their minee. New and improved machinery will he put in, huildings will hc erected, and other necessary work will he done. The whole will coet over $20,000.

NEVADA COUNTY.

Reese's Claims.—Grass Valley *Union*, July 20: Theee claims are on Randolph Flat. Last week Reese panned out the precious at the rate of $10 to the pan.

The Mines.—Maryeville *Appeal*, July 16: The mines at Camptonville, (Yuba Co.), North

San Juan, Sweetland, Buckeye, (Yolo Co,), Forest City, (Sierra Co.), French Corral, etc., all have plenty of water, and never yielded better. The strike made in Bald Mt., near Forest City, some months since proves to be permanent, the gravel developing into a perfect lead of richness.

PLACER COUNTY.

MICHIGAN BLUFF.—Cor. Auburn *Stars and Stripes*, July 18: The Van Emmon Bros. are the owners of the most extensive and valuable mine in this place. We were shown this evening the finest pan of gold dust that it has ever been our fortune to witness. It was taken from 150 ft. of the upper end of their flume. It contained between 2 and 300 ounces, and is valued at $5,000.

ENTERPRISE.—A Co. of S. F. capitalists have it in contemplation to commence systematic operations at an early day, having in view the opening and thorough development of the Manhattan, a short distance above Michigan Bluff.

AUBURN CO.—Auburn *Herald*, July 20: The shaft is 125 ft. deep, and from 90 to 125 ft. the ledge has uniformly increased both in extent and richness. The pay ledge is 2¼ ft. thick, besides about 1¼ ft. of decomposed strata, making about 4 ft. in all, between the walls. The rock taken out at present prospects very rich; 10 men are employed, and the work of sinking and hoisting goes on day and night.

PLUMAS COUNTY.

NEW DITCH.—Quincy *National*, July 13: The new Co. in possession of the Hungarian Hill claims are running a line of ditch from a point about 200 ft. above the highest ground on their claim, towards Mill Creek.

NEW DIGGINGS.—A Co. has recently opened a claim in the gravel range in the Mountain Meadows, and are making good pay.

LA PORTE.—Marysville *Appeal*, July 17: Yesterday we were shown a very fine nugget of gold panned out of the mine of Conly & Gowell. There are engaged in cleaning up their ground after 4 months' run of ground sluicing or hydraulic washing. About 150 days' work have been put in. They expect to take up $125,000, possibly $150,000 for their seasons' run. Our informant visited most of the diggings about La Porte, and in one claim saw $80 taken from a single pan of dirt, and saw several other pans washed, ranging from $30 to $50. New diggings are being struck, and rapidly developed.

SAN DIEGO COUNTY.

BULLION.—San Diego *Union*, July 11: W. F. & Co. shipped to S.F. by the Orizaba, gold bullion valued at $1,659 from the Julian mines.

GOOD PROSPECTS.—The Kentuck has cleaned up 30 tons of ore, which yielded $49.85 per ton, in all $1,495.50.

THE MINES.—The Redman mill, Banner Dist., started up on Tuesday on Kentuck ore, and it will next crush 200 tons from the Golden Chariot which is expected to realize from $20,000 to $25,000. At Julian the San Diego and Helvetia mines are showing some splendid rock.

SAN LUIS OBISPO COUNTY.

JOSEPHINE.—San Luis Obispo *Tribune*, July 13th: At the Josephine ore is being smelted for quicksilver, and produces a fair yield. At the Libertad some good-looking ore has been taken out, and work is being continued with a fair prospect of success.

SANTA CLARA COUNTY.

MCLEOND DIST.—Gilroy *Advocate*, July 20th: The Cold Spring Co. in opening a cut for running a tunnel, struck a vein of ore upon which they have sunk 7 ft. The ore was assayed and showed $49.02 silver, 2¼ per cent. antimony, no gold, and over 50 per cent lead, pronounced by the assayer to be good working galena. In the Gilroy Con. Co.'s claims, a vein over a foot wide is in sight in the croppings. A piece of top rock contained 71 per cent. of antimony and over $13 to the ton in gold and silver. Afterwards while prospecting the cropping a veiu of cinnabar a foot wide was discovered. Work has been commenced on this claim. The Cold Spring Co. will be incorporated and work vigorously prosecuted. Mr. Stayton is driving his tunnel in as fast as possible, and expects to drift into his deposit of cinnabar within 15 ft. Work has been commenced on the old Gomaz claim by a S. F. Co. The Condon Bros. have located a claim for cinnabar and have taken out some beautiful specimens. The above claims are about 26 milee southeast of Gilroy.

TRINITY COUNTY

COX'S BAR.—Weavervillo *Journal*, July 20th: The season is over at Cox's Bar. McElvancy & Wiltsoire's claim has paid them well, and Joh Hedges has taken out hig pay, making more this year than for several seasons past.

TUOLUMNE COUNTY.

CHUNK.—Sonora *Independent*, July 20th: A large chunk of quartz rock was found this week on the claim of Myers and Peters, in Sonora. The rock weighed 51 lbs. and is thickly studded with gold.

Nevada.

ELKO COUNTY.

THE MINES.—Elko *Iudependent*, July 13th: In Railroad Dist. the Walla Walla Chief has developed a large body of high grade ore. The Rogers from Buena Dist. Reports the discovery of a 4 ft. vein of good milling ore. The Austin Co. at Mineral Hill has resumed work on its mines and will erect a mill this Summer. At Bull Run the mines belongiug to the Chellie Co. have yielded more than fairly. At Buel it is reported that the Buel smelting works will be started up under a lease.

EUREKA DISTRICT.

SHUT DOWN.—Eureka *Sentinel*, July 19th: All of the furnaces of the Eureka Con. have heen shnt down for some days for repairs.

STAR C. M. CO'S. TUNNELS.—The Griffin tunnel is over 300 ft. long, and is 150 ft. below the surface of Freeman's Hill. The Williams' tunnel, is over 150 ft. long. It will cross 6 ledges in which there are splendid developments of ore to 75 ft.

MAONOLIA.—The indications are flattering for the development of a body of ore on the lowest level.

NEW WORKS.—L. N. Dougherty, will probably break ground next week for new reduction works of mammoth proportions. The contemplated improvements will have a tendency to liven up matters in this section.

SILVER WEST FURNACE.—Supt. Taylor is getting along splendidly with the furnaces of the Silver West Con. He will be ready to fire up in about two weeks.

ELY DIST.

BULLION.—Ely *Record*, July 14: During the past week W. F. & Co. have shipped bullion valued at $130,118.37.

Since July 1st the Pioche Co. have shipped bullion valued at $18,176.98.

The Summit shaft of the Meadow Valley Co. will soon start up.

CHIEF OF THE HILL.—Since our last review all work has been suspended in the upper portion of the mine, for the purpose of tracing out the ledge at the point where it has been cut by the Burke tunnel in running into the hill. Mr. Hardy, Supt., from surveys obtained will have to sink eight feet from the present depth of the winze on his lower level to strike the level of the tunnel where it cut his ledge, and will then have to run a drift 50 ft. west to intersect them at the point where the ledge was tapped. All other work will be suspended until this has been finished.

AZTEC.—Prospects are looking better than for the past forty ft., showing at a depth of 80 ft. a well defined ledge, from 24 to 30 inches wide, assaye from which run from $85 to $300 per ton.

MOCKINO BIRN.—The shaft is down 50 ft., with ore in the bottom constantly improving and the ledge widening as sunk upon, and much more solid. The chloride streaks mentioned in our last review as coming in on the bottom of the shaft is gradually widening, and shows from 6 to 10 inches of good free ore. During the past week assays have averaged from $60 to $250 per ton.

CONDOR.—Suspended sinking of main shaft and are running a drift east. At 5 ft. from the shaft cut into the ledge in the face of the drift, and it shows 3 ft. in width, and the ore assays as high as $231 per ton.

MEADOW VALLEY.—The Summit shaft is below the level of Fitzhugh tunnel, and the machinery, etc., is all in position.

GREY EAGLE.—Work was resumed on Friday, a contract to sink 60 ft. having been commenced at that time.

LOUISE.—The Anna Dickenson shaft, down 75 ft., shows constant improvement, with the ledge showing 4 ft. wide on bottom. The Grattan and Goodspeed shafts are also improving.

BOWERY.—The mill continues running steadily on ore from the Pioche and is in every particular a success.

NEWARK.—Timbering of shaft continues. The hoisting machinery left Palisades on the 8th inst., and is contracted to be delivered here on the 23d or 24th.

STIRLING.—Work on the new contract to sink 50 ft. was commenced on Monday, and when this is completed the shaft will be 200 ft. in depth. Assays from ore during the past week have averaged $112 and a constant improvement is noticed as the ledge is sunk upon.

WASHINGTON & CREOLE.—Still running east drift, which is in between 70 and 80 ft., and sinking the shaft. Machinery for hoisting purposes has been contracted for in S. F.

CHAPMAN.—A contract to sink the shaft 50 ft. deeper was commenced on Friday last. Stopes continue to look and yield well.

Work on the Condor mill is soon to be pushed ahead with alacrity.

INGOMAR.—In regard to the strike recently made, the ledge is improving continually, both in appearance and the quality of ore extracted.

PIOCHE.—On Thursday we visited this mine. At the first station Mr. James informed us that we were 110 ft. below the surface. A drift south to cut the ledge has been run from this point 12 ft. After conducting us through the various angles of the dips and spurs of the old ledge, we were brought to the new strike. The ledge at this point averages about 5 ft. in width, and runs nearly north and south. It was struck 205 ft. north of the shaft, although in a direct line it could not exceed 30 ft. A winze is being sunk to the second station, and is down 15 ft. We took some samples of ore from the ledge, at the bottom of this winze, had the same assayed and the result obtained was $2,327.75, and the sample was not more than average rock. The ore from the different stopes in this level is mixed before it comes to the surface, and runs about $500 to the ton.

On the second station drift to the ledge, 110 ft. in length, stoping going on and raising considerable good milling ore. The ledge is about 2½ ft. wide of good mineral, running east and west. On the 385-ft. or third station a drift had to be run 234 ft. to ledge; a drift 225 ft. east resulted in finding a body of ore 3 ft. wide, very rich; a very little water is to be found on this level.

On the fourth level, 460 ft. down, drift to ledge 300 ft., striking the ledge 625 ft. below the surface, as the ledge from the opening is pitching at about 62°. A large amount of ore is raised and much more could be if milling facilities were at hand. The Supt. is working about 45 men, eight-hour shifts, and is raising about 11 tons of ore daily.

RAYMOND & ELY.—Yesterday we visited these works; they have on the dumps near or quite 4,000 tons of third class ore, that is estimated to mill from $60 to $70 to the ton. After looking through blacksmith, carpenter and machine shops, we were lowered to the 423-ft. level. Seventy-seven feet south from the shaft the ledge was tapped, about 8 ft. in width, but with a small streak of waste rock, varying from 12 to 20 inches in width running through the center, leaving the mineral about 6½ ft. wide. They have drifted west on the ledge about 12 ft., and east 70 ft.; raising ore to 3d level by incline winze 103 ft. deep. On this level is stored some 70 tons of waste rock, which will be raised soon. The face of drifts looks much better as work advances. Mr. Clark is working over 200 men—8 hour shifts.

HUMBOLDT.

BULLION.—Unionville *Silver Slate*, July 20: Amount shipped from the Arizona since our last issue, was $4,839.

CENTRAL DIST.—Phillip Mullen has purchased the Evans & Jennings quartz mill, and is making arrangements to have it taken to Central Dist. The Teamster mine is tolerably well developed.

ADAMS MINE.—The ledge is nearly 3 ft. thick in the face of the tunnel, and samples of ore yield from $200 to $500 per ton in silver. The tunnel is in over 100 ft.

RELIEF DIST.—The news of an important strike in Relief Dist. is confirmed. The Batavia Co. struck a large body of ore in the C. P. R. R. mine, on last Monday.

REESE RIVER.

SEMANTHA.—Reese river *Reveille*, July 13: Incline being sunk on the ledge, which promises well and has good ore.

STAR OF NEVADA.—Main tunnel going ahead; but little being done elsewhere.

PRUIN & PULLIN shut down.

FLORIDA.—Prospecting continues; 8 men at work; some first rate ore coming out, but in small quantities.

LANE & FULLER.—(Pacific Co.)—Some new contracts have been let; large force employed; last month's yield from the mine being worked at the Manhattan Mill.

FREEHOLD.—On account of bad air work has been suspended on the ledge for two weeks past. An air shaft is being sunk which will soon be completed, when the extraction of ore will be resumed.

MORGAN & MUNOEY.—Ten men working in different parts of the mine; looks well at all points; ore good.

DIANA.—Shut down the first of the week.

SOUTH AMERICA.—This mine is to be started up again soon.

GROVE TUNNEL.—Turner and Co., who have a lease in the 200-ft. west level, are getting some high grade ore; mine generally looks fair.

ISABELLA.—Looks well at all points. A crushing of ore last week went $1,000 per ton.

GIRARD.—Work progresses slowly; a little good ore coming out.

SAYBROOK.—Good ore coming from the 150-ft. level.

DOLLARHIDE INCLINE.—Shut down.

OREGON SHAFT.—Heavy work going on, lots of ore in the mine; large number of men employed.

SARATOOA—Continues good; sent 45 tons of beautiful ore to the mill yesterday.

IRONCLAD.—Work suspended.

CAMAROO.—Shut down.

YANKEE BLADE — KLING & KELLEY.—Been raising an air chute for 6 weeks past. Now stoping at the 150 ft. level; ore fair.

SLOAN & COOPER.—Sinking incline on the ledge; down about 80 ft.; some of the ore coming out is first-class.

ENSIGN & SOUTHALL.—Getting good ore from their incline.

VIRGINIA.—Running a new tunnel to cut the ledge at a greater depth.

PATRIOT.—Sinking from the tunnel and getting good ore.

WASHOE.

SAVAGE.—LOCAL SUMMARY—Gold Hill *News*, July 20: Daily yield 170 tons, worth $28. Last Sunday evening a very fine appearing body of ore was struck in the east cross-cut of the south drift on the 1,500-ft. level.

The indications thus far are certainly flattering for finding a good body of ore on this level, but the development as yet shows nothing better than ore of a low grade, assaying from $15 to $30 per ton. Sinking the main incline is progressing a little slower than at our last report, the rock being somewhat harder. It is down about 90 ft. below the 1,500-ft. level.

OPHIR.—The work of repairing the 700-ft. level is completed, and a drift running west from a point 360 ft. north of the main west tunnel has just been started.

WOONVILLE.—Yielding about 35 tons of ore per day. All the levels and ore breasts are looking splendidly, and the ore coming out is the best yet produced from the mine. The Thompson & Ramsdell mill will start up on ore from this mine next Tuesday, and before the end of the week still another mill.

BELCHER.—Daily yield, 275 tons. The cave in the Crown Point mine did not effect the Belcher, heinging 100 ft. north of it. The 1,000-ft level is looking splendidly. The main incline has about 50 ft. further to go to meet the drift west from the 1,100-ft. level.

CHOLLAR-POTOSI.—Daily yield 200 tons, worth $42 per ton, principally from the Belvidere and Blue Wing sections. Repairing the shaft is completed to about 800 ft. below the surface.

CONS. VIRGINIA.—The main drift on the 1,163 ft. level from the Gonld & Curry shaft is in 100 ft. north of the south line of the Cons. From this point it is the intention to immediately start a cross-cut west for the main ledge. Crosscuts are started both east and west at the extreme south end of the south drift at the 500-ft. level, drifting through fine bodies of low-grade ore each way.

JUSTICE.—The new pumping machinery keeps the water out, and drifting to the east is actively prosecuted, with prospect of having good ore soon. The north drift from the south shaft is in 200 ft. showing good milling ore throughout.

YELLOW JACKET.—Daily yield 25 tons. The drift north at the 1,300-ft. level is progressing well.

IMPERIAL-EMPIRE.—The new ore-body at the 1,650-ft. level has widened out to 12 ft., and assays from the face of the drift this morning yielded as high as $180 to the ton.

JACON LITTLE.—A large amount of excellent grade ore is ont on the dump ready to be hauled to mill, and the ledge shows plenty more of the same.

OVERMAN.—Shaft down to 1,100-ft. level, and station at that point being opened. The main west drift is in 425 ft. running through ledge matter with good indications in the face.

SILVER HILL.—The new hoisting works are in full operation, the shaft is bailed out and enlarged for the first 100 ft. of its depth, and the first or 100-ft. level is opened, a drift being run from the shaft nearly to the ledge, which it will intersect about 40 ft. from the shaft, where good ore is anticipated.

BUCKEYE.—Sinking the main incline deeper is progressing well, although in hard porphyry. The ore breasts are looking and yielding well, and the last run of 170 tons yielding $2,950. The south stopes are looking especially well and showing improvement.

HALE & NORBROSS.—Daily yield about 50 tons of ore. The incline is down 60 ft. below the 1,500 ft. level, in fair sinking ground. Prospecting at the 1,500-ft. level is actively continued.

SIERRA NEVADA.—Daily yield 40 tons, keeping the mill steadily running. A good little streak of ore, about 4 ft. wide, was found in the lower part of the mine a few days ago, which promises well.

KNICKERBOCKER.—New shaft down 400 ft., and sinking suspended until the 400-ft. station can be put in, when sinking will be resumed.

DANEY.—Shaft down 110 ft. below the 500-ft. level, and sinking somewhat impeded by increase of water. The drifts at the 500-ft. level are in favorable indications yet.

SUTRO TUNNEL.—Total length, 2,968 feet.

GOULD & CURRY.—Drifting at the new lower levels opened, is actively prosecuted with no very favorable developments as yet. The main incline is down 100 ft. below the lower level.

KENTUCK.—Daily yield about 60 tons from the old workings.

OCCIDENTAL.—The contract drift, north, is in 118 ft., and almost the entire distance in good milling ore.

CALEDONIA.—Sinking the shaft is suspended at present, and the 700-ft. level is being opened. Prospecting in other parts of the mine is actively progressing.

BALTIMORE.—New shaft down 165 ft. The ground works well and some little water is coming in.

UTAH.—The hoisting works are completed, and everything in splendid running order. Sinking the shaft deeper is resumed with vigor.

RED JACKET.—This mine is yielding some very fine ore which assays very rich. The pay streak is about 2 ft. wide, and widens as sunk upon.

WHITE PINE.

TREASURE HILL MINES.—White Pine *News*, July 13th: O. H. Treasure. The ore in the lower tunnel has improved since last report. Work in the Wheeler tunnel progreseing rapidly, with good indications in sight. The Big Smoky mill is running steadily on ore from the Co's. mine.

PENNSYLVANIA.—The formation in the shaft has changed favorably since last reported.

SAN JUAN DEL RIO.—Contractors working day and night sinking in ledge matter. A good character of ore is in sight in the bottom of the shaft.

HAMILTON M. & M. Co.—The mill of the Co. started up to-day, to test the machinery. The mines of the Co. have changed for the better since last reported. North Emersly and Othello are looking well.

EBERHARDT & AURORA Co.'s MINES.—The mines of the English Co. are improving daily, in all the works. The De Pase chamber is showing a breast of ore 35 ft. wide, and promises to excel in richness and extent any deposit of ore yet found on Treasure Hill.

BEECHER CON. M. & M. Co.—Working East from the Old chamber, in good ore. Have in sight a body of ore large enough to keep the Manhattan mill running steadily. The Edgar mine, will when the whim is complete, be worked with a full force of men.

SUNBEAM.—The Moscow shaft is down 75 ft. in good ore. The East and West drifts are pushed ahead with energy, and ore improving daily.

EAST SHEBOYOAN.—Ore of good grade is obtained in Exchange drift. A part of the force of men is employed in the southwest drift, running into the hill, and showing a fine body of fair milling ore.

COPPER GLANCE,—Work goes ahead by contract. Good progress is made in the northwest drift and north shaft. A good quality of ore is coming out.

[Continued on page 60.]

The Pacific Coast and San Francisco.

The fntnre greatness of San Francisco will depend mainly upon the thrift and general prosperity of the iuterior, and the development of its vast resources. The physical conformation of the State, with its two great interior valleys and system of rivers, natnrally make a large part of California directly tributary to Ssn Francisco in the disposition of its already large and rapidly increasing commerce. The coast range of mountains completely shutting in this commerce from the sea, at all central points except at the Golden Gate, gives to San Franoisco an advantage of position hardly equalled by any other sea port in the world.

Now with this great advantage in her hands, Sau Francisco, that has been built np in a great measure hy the power and quickening impulses of vast streams of gold and agricultural products, wrought from the hard rocks and soils by the will and nerve of a mining and rural population, should now in turn lend a helping hsnd, in aid of a continuance of these tributary streams of wealth.

Agriculture and Mining.

The great agricultural interest ie hampered in its progress by the want of more railroads, and San Francisco should help hnild them. Innumerable mines of nntold wealth, yet lie nndeveloped in all the vast ranges of the Sierras, and the money of San Francisco should be freely given to nnfold their riches, or to the hnilding of roads, making them accessible, that the very riohes they contain may be in turn more easily ponred into the lap of the mistress of the commerce of the Pacifio seas.

The iron we are consnming year by year, at the cost of millions of dollars, should be wrought out of onr owu mines by San Francisco capital, keeping our money at home and giving employment to thonsauds now here, and to thousands more who stand ready to come whenever capital will give them the work to do.

The Power of San Francisco.

San Francisco by the great vote ehe wields, now carries a moral power for good or evil to the yet undeveloped interior, that shonld he felt on the side of right and justice. She ehould use her vote and her influence in the advancement of edncation, liberally allowing the publio school moneys to find their way among the valleys, among the mines and recesses of the monntains, nntil their population shall be as renowned for intelligenoe as are they of Switzerland.

We want her power for good, hut not in aid of another gigantic lottery by which to wring ont the last dollar from an already purse depleted people. San Franciscans are ahle by their influence to *break up*, instead of bnilding up, monopolies and "rings" for crnshing the struggling energies of a people, who have to a great extent given them or contrihnted to the wealth and power they now possess; and San Francisco should lead in doing it.

Low Freights and Fares.

They shonld aid in establishing a system of low freights and low fares, that the produce of the interior can be placed on shipboard for exportation withont ahsorbing the entire profit of cnlture and production. Give us a free port, inviting the merchant fleets of the world to our shores, if needs be, that we may have transportation at something less than absolutely ruinous rates. Give us low fares that all may visit now and then the seat of so much wealth and power.

It is simply strange that the people of San Francisco while talking through a committee of one hundred on the subject of a trans-continental railroad, by which San Francisco is to be particularly benefitted, cannot see the need of a strong and earnest competition or opposition transit line of communication by rail or steamer between the bay city and interior places. Not an opposition to he honght off or trifled with, but one tbat would assure to the people of the interior a passage to and from San Francisco at a moderate cost.

Relativs Conditions Changed.

In the strange, wild days of '49, the mining counties with their teeming popnlation of gold seekers, swayed the destinies of the State, controlled the election of her offioers and held a taut rein upon the "cow counties" and their cities. El Dorado county alone, giving a larger vote than the city of San Francisco; and giving rise to prejndices and jealousies not altogether unfounded, which engendered a bitterness of feeling.

But time has wrought its changes, snd now the "cow counties" rule, whilst San Francisco alone, casts a full third of the entire vote of the State. With the growth of her power, should he the throwing off of old prejudices against the interior, and in its stead should he exercised a magnanimity in keeping with her great and unprecedented prosperity.

A New Class of People.

San Franciscans should throw off some of their exclusiveness; mingle more with the people of the interior; see how greatly they differ, the men and merchants of the present, from those of '49; visit them at their homes; enter with spirit into the enterprises that are projected for the general good of the people; give them hanks, where money can be had on good security at a reasonable rate of interest; or, take a hand in some of the vast schemes for irrigating the otherwise half productive lands of the great valleys, that cannot hut serve to enrich alike the prosecutors, country and the city; loan a part of your great wealth, for the building np of manufactories, and to responsihle young men, who are ready to engage for a term of years, in the breeding and rearing of sheep and the Cashmere goat, throughout the length and breath of the great western watershed of the Sierras.

Then let our snccessfnl Metropolitan merchants reach out their hands in aid of the interior, and find pleaeure in investing their earnings on this coast instead of retiring to what they term their (Eastern) "homes." By so doing, they will soon find the false prejudice of the interior broken down, and a genuine satisfaction awarded to them, and to their everlasting memory.

The time is not distaut when this city will extend for miles over the entire peninsular. But this cannot occur until the uncalled for animosity existing between the Bay City and interior are hlotted out. Not until her vast fields at her back become an empire hesming with life throughout, with a population numbering from a million npwards, of the most intelligent and progressive people on the face of the earth—a chosen popnlation, as it were, from the fonr quarters of the globe.

Notabls Examples.

Do what Chicago has done; cause railroads to radiate from the city in every direction in which there is land, to hold them np, and if there is uo land bnild hridges, make a foundation of something, so that the great northern half of the State can get to the city without heing ohliged to swim, or go a hundred miles out of the way to get there on land.

If you hav'nt enough of good water to drink, go to work and get it, there is enough in Lake Tahoe; and if the water of your rivers don't run the right way to suit your oonvenienoe, do again as the Chicagosns have done, turn it round and make it run the other way. Have some "snap," and let the result of it be seen in the increased facilities for communication with the interior; and not let another little trio of Sacramento country merchants turn a "Dutch Flat swindle" into a grand transcontinental railway right before your eyes, withont taking a dollar of the stock except what is wrung out of yon hy the nerve, effort, influence, and good sense of a few comprehensive minds.

A Singls Exception.

San Francisco does present one notable instauce of enterprise and thoughtfulness in reference to the wants of the interior. It is found in the vast scheme, now in the process of accomplishment, for the reclamation of the half snbmerged lands and islands at the confluence of the Sacramento and San Joaquin rivers. But there should be more men in Sau Francisco, with their large wealth, ready to embark in other great and paying enterprises, as were the men of the Reclamation Company.

There should be found men ready to assist in bringing out new machinery and appliances for levee building, ditching and steam plowing; helping the poor but intelligent and scientific inventor, at least to the hread he needs, while putting the conceptions of his hard worked hrain into practical shape for the good of mankind.

Steamship Lines.

It is not time yet or becoming in San Francisco to rest upon her laurels of already accumulated wealth; it is too early in the history of the world's progress for her to do so now, just as new and vast fields of promising enterprise are opening to her embrace. She should let the world see that she is ahle to hold the power she has herself created over the commerce of the seas, and which is yet entirely within her grasp.

San Francisco is able to thread the Pacific with steamship lines connecting her with Japan, China, Australia and the Islands of the great Pacific seas, and should do it. Should make the entire coast from Panama to Behring Straits, and from thence to the Amoor, and on to the lower coast line of Hindostan, and then sweeping round the great archipelago of the Pacific, make all trihutary to the queen city of the sunset shore, and center witbin her golden portals the wealth and commerce of the world.

Animalculæ in the Mouth.

Some of our readers may not be aware that the teeth and gums, when not properly cared for, are subject to the presence of innumerable forms of animalculæ.

MICROSCOPIC FORMS OF LIFE IN THE HUMAN MOUTH.

Dirt and filth and decay always breed animalculæ, and not unfrequently larger and more diegusting forms of animal life. Probahly all of our readers are aware of this fact; but that neglect of the *mouth* is followed by such results perhaps has never occured to many; yet such is the fact.

Every time we eat, more or less of onr food adheres to the teeth or is deposited between them, or upon the gums. Now if this matter is not removed, at least once a day, hy thoroughly brushing or cleansing the teeth and gnms, it sours by the heat of the mouth, and furnishes a favorable breeding place for innumerable microscopic animals, the germs of which we inhale with our breath or take into the mouth with onr food. These animalculæ, when placed under a powerful glass, appear in great numhers and in almost all imaginable forms, resembling snakes, worms, snails, etc. Upwards of thirty different species of these cnrions little forms are quite faithfully represented in the accompanying illuetration, many of which are disgusting enough when magnified so that we can get a fair idea of what they are, and their habits. Scrape off a little of the tartar or other matter which adheres strongly to the teeth, and which has been for some time subjected to the naturs1 heat of the system, and place a small piece, not larger than the head of a pin, under a powerful microscope and you will never feel like eating until you have first cleaned your teeth and thoroughly rinsed your mouth. If these minute organisms are suffered to remain for any considerable time, they commence feeding upon the gnms, which soon turn red, become sore and hleed at the slightest touch. Even the enamel or smooth ivory surface of the teeth not unfrequently become corroded, is broken, and the teeth decay and ache, to the great annoyance and suffering of the possessor.

We trust that all onr resders who are not already doing so, will, after reading this, get into the habit of regularly and thoroughly cleansing their teeth aud mouths after eating, using soap freely. If they have no brush, use a small rag, or if that cannot be had, use the finger, and afterward thoroughly rinse the mouth. By so doing you will add greatly to your general hsalth, be repaid by sweet breath, clean, healthy, good looking teeth and gums, and the microscopist will search in vain for the disgusting forms of animal life which we have depicted ahove.

The Effect of Strikes on Commerce.

All the commercisl papers of America are now discussing the effects of the recent great strike in New York. The majority regard strikes as an nnmitigated nuisance, and ae greatly hurtful to the industrial interests of the nation; hut the minority, including some first-class journals, take qnite a different view of the matter. They regard the workmen ae completely justified, and charge the great hanking concerns and the capitalists with the usurions rates of intereet that they exact as heing the real *impedimenta* in the way of progrese. We have not here to do with either, we have not to question whether the strikers are right or wrong—we consider merely the effect on the world's commerce. Hitherto the United States cannot he said to have had sny foreign commerce worthy of the name. One reason was, that they had no manufactured goode which they could sell; another, and one having very considerahle influence, of late yesrs, wae, that the high pricee of lahor made our manufacturee too dear, and that England and France could from this reason undersell us in the markete of the world. This last condition of things is heing wholly changed, and that through the medium of strikes. The price of lahor ie heing raised and a reduction of the houre of lahor effected all over the old world, principally in the great manufacturing countriee. The movement thue hegun will continue until the price of lahor and the honrs of working hecome the same in all parts of civilized Europe and America.

The advancing intelligence of workmen the world over, is making them see that their intereste are everywhere the same, therefore when they etrike, they strike in unison. Thouesnde of dollsrs came from the treaenriee of Englieh trade eocieties during the strike which is ahout heing terminated, to aseist their affiliated societiee on this eide of the Atlantic. Whatever affects a particular trade in one country, will affect it in every other. If, therefore, the American strike had eucceeded univereally, it would in eix months have heen followed hy a gigantic strike in Europe. As we have hefore stated, the reeult of all this would he to aseimilate the cost of production in Europe and America, and thereby we would he vastly the gainers. We could then without fear throw off the restrictions on commerce imposed hy the heavy duties still existing, and we could compete with England and France, on every land and on every sea. The eight-hour movement would not eventnally have raieed prices in America, the manufacturers would have to he contented with smaller profite. It would have heen a positive henefit to this coset to have had it eucceed. For combined with it wae, in many inetances, a strike for higher wagee, and we have suffered from the circumetance of paying higher wages than in the East, thus being unable to compete with Eastern manufacturers, even on our own ground. In fine, etrikes hy tending to eqnalize the cost of production everywhere, result in preventing particular nations having a monopoly of the commerce of the world.

Coffee rises in price all the time notwithetanding the reduction of the duty, and will continue to rise. It ie said that this reduction will cause an increased consumption; this however we do not helieve, hut the consumption of coffee is increasing per head year hy year, the heverage coming into more general use. The eupplice from all the producing countries have heen less than ever, thst of Java not being more than 50 per cent. of last year, and that from Ceylon only eix-seventhe. The statietics of the Java crop this year are: Government, 50,589,220 lbs.; private, 8,614,309 lbs.; total, 59,203,309 lbs. The Brazilian crop has suffered from a hot and dry summer and excessive rains.

Tea Importations into San Francisco.—In 1870 only 2,250 tons of tea were imported into this city. During 1871, not less than 8,250 tons were imported; while the estimate for the present year is 15,000 tons, and as soon as we get a competing overland road the amount can scarcely be estimated.

Immigration at the West.—The State of Missouri has increased over 1,100,000 hy immigration since the war closed; while immigrante are pouring into Kansas at the rate of ahout 125,000 persons a year. This ie what comes of cheap lands, cheap living, chesp freights and the ahsence of monopolies.

Useful Information.

Sharpening Edge Tools.

There is a common saying that a good workmaa is know by his tools, and it is certain that many a young mechanic is hiadered in acquiring skill in his trade by too littls attention to this excellent maxim. Tbe followiag simple rules, from the *Young Mechanic*, will be of aid to inexperienced workmea, and, perhaps, to some older in the profession, in telling how tools should bo treated:

Tbere is no operation in which tbe young mecbanic is so much at fault as in that of grinding and setting in order tho various tools he has to ase. Nevertheless, he will never become either an independent workman, or a good one, if he has to depend upon others for this necessary labor.

No doubt, to sharpen a tool which is in very bad order, is a tedious and tiresome job; but it is not so wearisome an affair to keep tools in condition for work, after they bave been once thoroughly sharpened, by one who nnderstands how to do it. Never, therefore, use a bluat tool but at once go to the hono or grindstone with it, and put it in first-rate order. Time thus employed is never wasted, but rather saved; and tbe rcsnlt will appear invariably in the work whicb you are eagaged upon. You must, in the first place, understand precisely what it is you havo to do; and althongh the following details may be by eome considered more adapted for advaaced students than for young mschanics, a little attention to the explanations will render the matter clear to any boy of ags and intelligence to take in hand, with reasonable prospect of success, the tools of the carpenter, turner, and fitter.

Now all tools, if *well* ground, are ground to a certain know angle, according to tbe material which tbey aro intended to cut. Tools intended to cut soft woods, like deal, ars ground to an angle of twenty or thirty degrees, like tbe chisel seen edgwise. I shall have a word to say presently as to the direction in which snch tools are to be held in order to make them cut as well as possihle. A tool for hard wood is ground to an angle of at least forty, and it ranges up to eighty degrees, giving a stronger, thicker edge, but not so keen a ons. We have, therefore, mors of a scraping tool than a cutting one, at lsast, in the way it is usually held. Then we come to ths tools with which iron is tnrnsd, and steel also. Tbe usual angle is sixty, thence it ranges to ninety degress. Thus, yon see, advancing from soft wood tools to those for hard wood, and thence to a substanco still harder, we have increased the angle of the edge, beginning at thirty and ending with cighty or ninety degrees. But now we come to a material which is harder than wood, and not so hard as iron, yet we uss tools with an angle of ninety degrees, which is still greater, and ssventy degrees is the least angle ever used for this metal.

Experience only has taught the proper angles for tools, and it is found that if brass and gun metal are turned with tools of a less angle than seventy degrees, they only catch into the material, and do not work at all satisfactorily. You can, however, *scrape* brass, as a finish, with the thin edge of a common chisel; bnt there the tool is held so as to scrape very lightly and polish, and its edge will not remain many minutes, unless the maker (intending it to be so used) has made it much harder than he would make it for soft wood cutting.

If you buy your tools at any *good* shop, you will find that tbey are already ground to nearly the angles named, and when you rs-grind them you must endeavor to keep thsm to the same. The *bevel*, as it is called, of many tools nsed not be gronnd at all, as they may be sharpened solely by rubbing the upper face on a hone, or grinding it, holding it so that the stone sball act cqually on all parts of it. If, however, the tool should become notched, you must grind the bevel of it, and then you mnst try and keep the intended angle.

One tool, however, or, rather, ons pair of tools, viz., turning-gouges and chisels, are very seldom ground with a sufficiently long bevel wben they first come from the make. This you must correct when you first grind ths tools for use, and keep the same long bevel and small angle of edge continually afterwards, for you will nsver make good work on soft wood if your chisels and gouges are ground with two short a bevel. I must also guard you against another common error, which, howsvsr, is difficult to avoid at first, and only long practice will onable you to overcome it. The bevel of *all* tools must be kept flat and even, and whsn the tool is afterward ruhbed on the oil stone to give a finish to the edge, another flat even bevsl sbould be made.

Voracity of the Pickerel.—The rapid growth aud extraordinary voracity of the pickersl are well shown by Dr. Sturtevant in the report of the Massachusetts Inland Fisheries Commissioners. Tbs doctor investigated their powers of eating in the following manner:—He put two young pickerel, five inches long, in a trough with a great quantity of little minnows about one inch in leugth; and these two pickerel ate 128 minnows the first day, 132 the second, and 150 the third, and tbey increased one inch in 48 hours! They were mere machines for the assimilation of other organisms. It is to be hoped that this wolf of the waters may nsvsr be introduced into our California streams.

The Development of the Lobster.

According to Mr. S. J. Smith, in the *American Journal of Science*, the first stage of larval life finds the littls animal a free swimming schizopod, abont a third of an inch long, without any abdominal appendages and with six pair of legs, to which are attached powerful swimming organs. The eyes are brigbt blue, and the body is orange to reddisb orange in color. The stage shows an increase in the size of tbe little second animal, and a development of a portion of the abdominal legs, witb other and less important changes. In tho third stage observed, the animal has becoms half an inch loug. tbe anterior legs have largely increased in size, the second and third pairs are furnished with claws, the abdominal appendages bave become conspicuous, and the "pocksts" have appeared, though they yet differ from those observed in the adult. The fourth stage finds the yonng lobster threo fifths of an inch long. It has lost its schizopodal features and has become to all intents and purposes, an actual lobster.

It is still, however, a free swimming animal, moviag through the water very rapidly by means of the abdominal appendages, and dartiag backward when disturbed, with the tail, frequently jumping out of the water like a shrimp. It is probable that there is yet another stage of development before the complete lobster is reached. From the data obtained, it is also probable that these changes all take place in the course of a single season.

The Time Planets Would Take to Fall into the Sun.—M. Flammarion makes the following remarks, on this subject, in *Les Mondes:* Supposing the Earth to be arrested in its course, and tbe centrifugal force thus destroyed, the Earth, heing left to the first force, would fall to the sun with a uniformly accslcrated motion. It wonld take about 64 days in its fall, and would reach the sun with the incouceivabls velocity of about 360 miles for the last second.

The following are the figures obtained from a calculation of the tims the planets would take to fall to tbe center of the snn, supposing their motion to be arrested.

Mercury	15 55 days.
Venus	39-73 "
Earth	64-57 "
Mars	121-44 "
Jupiter	765-87 "
Saturn	1901-93 "
Uranus	5424-57 "
Neptune	10623-73 "

Increase of Tea Drinking.—A late number of the London *Grocer* publishes the tea statistics of the United Kingdom for the ssventy years. In 1801, the quantity of tea consumed was 11,865 tons, the avsrage price of which was four shillings two pence half penny per pound, making the yearly amount drunk by each person (man, woman and child) in the Kingdom, average one pound eight ounces.

In 1871, the consumption had risen to 61,701 tons, but the price had fallen to one shilling, ten and a half pence per pound. The taste for tea appears to have increased in the same ratio as its cost decreased, as in the last mentioned year the average of each individual was three pounds fifteen ounces.

Facts about Tacks.—The length of tacks, as nnderstood and given by the manufacturers, is by the "ounce," which is printed on the label, and stenciled on the box or package in which the goods ars placed for transportation. "Three ounce" (3 oz.) means that the package so labeled contains tacks three-eights inch long and that for every three ounces of tacks of that length there should be 1,000 tacks. Four ounce would be ssven-sixteenths inch long; six ounces,-eight sixteenths; eight ounce, nine-sixteenths inch long, and for each "full-weight" package thus labeled there should be 1,000 tacks, and so on up to twenty-four ounce, which likewise is equivalent to one and a quarter inches long, and 1,000 tacks.

Professor Gunning claims that the Niagara river has been in existence about 200,000 years—that a barrier thirty feet high at the head of the rapids would throw the water back into Lake Michigan. He accounts for the drainage of the lakes before the formation of the river by a channel which extended from Lake Michigan to the Mississippi.

Improved Letter Envelope.—An improved Lettsr envelope has bsen patented, which might be very useful to forgetful persons. The improvement consists in an external pocket, in which, supposing the envelope has already been sealed, anything forgotten may be placed, and also sealed up and carried with equal safety, and the necessity of destroying an envelope avoided. The only difference in the envelope is in the cut of the paper, and no additional cost is entailed in the manufacture.

Among the best conductors of sound are iron and glass. Through them sound is transmitted at the rate of 17,500 feet, or over three miles per second. But in air sound travels only 13 miles per minute, or, 1,142 fest per second.

There are about four hundred species of minerals known; but the varieties of these species are almost infinite. For example, carbonate of lime exists as chalk, marble, spar, lithographic stone, etc.

Foul Air in wells, drains, etc., may he effectually dissipated by dashing in a few buckets of water, mixed with a small quantity of chloride of lime.

Good Health.

The Small-Pox Invasion.

The scare with regard to the present small-pox invasion in this city and State, seems happily to be fast passing away; the menace, however, will not have been without its beneficial effect by indncing another general vaccination and re-vaccination of our people—a emedy, which, if universally resorted to every few years, witb tbe prompt vaccination of infants, wonld render it impossible for the small-pox to become a serious evil in any community. In reference to the

Prevealion of Small-Pox.

Dr. Armstrong in the Canada *Lancet*, advises tbe following means in staying the ravages of small-pox: "Pereons snffering from the discase should daily anoint their bodies and limbs throughout with carbolized oil; and also wash their bodies thoronghly with soft water, slightly carbolized; the anointing to be performed after the whole person has been washed, and gently dried with somo soft fabric. This process should be commenced before patients are allowed to leave their sick-room, and continued until snch time as all the diseased skin has been removed, aad a new and healthy one formed. In this way the particles of diseased and desquamated skin are prevented from heing set free from persons who have recently suffered, and contaminating healthy persons, by being inhaled or deposited on the exposed skin, or by getting into the water or food, and thus hs a mode of contagion."

"The attempt to prevent its spread by yellow flags, isolation and non-interconrse," says tbe Pacific *Medical Journal*, "will prove ineffectual. While some good may result from such measures, in the way of checking its extension in one direction, tbey are capable of doing much evil by diverting attentiou of the only sure defenss, and creating a false sscurity in the public mind."

Vacciaatioa as a Cure of Small-Pox.

Mr. R. C. Furley, in a letter to the *Scotsman*, says he is able to prove that vaccination is not only a preventative of disease but a cure. It is, he says, ascertained that when a psrson liable to take small-pox is exposed to the infection, the poison circulates in the blood for eight days before producing any febrile symptoms; then commence headache, sicknsss, pain in the back, suffused eyes, and a particularly white-furred tougue— a group of symptoms that belong to no other disease, and which lasts for three days. It has been held and acted on since Jenner's great discovery, more than eighty years ago, that it is not only wrong but fatal to vaccinate any one during that stage of disease, or the subsequent one when the eruption makes its appearance. But Mr. Furley says he can show from cases under his care at ths present time that if you vaccinate during the febrile stage the fever is slightly increased, but the eruption does not make its appearance, and if you vaccinate during the eruptive stage the eruption is immediately arrested. The matnre lymph overtakes the immature poison, and the disease terminates. If the eruption has gone the lsngth of having white tops, there is danger of infection; if not, it dies away as pimples. Mr. Furley feels confident that if evsry doctor were to vaccinate each case of small-pox that comes under his care at once, many hundred of lives would be sparsd and many thousand of pounds would be saved. In the mean time, he invites members of ths medical profession to accompany him among the patients he has under his cars, and thus possibly stamp out the epidemic in a few weeks.

Tea Drunkards.—Dr. Arlidge, of the pottery inspectors in Staffordshire, England, has put forth a very sensible protest, says the *Lancet*, against a very pernicious custom which rarely receives sufficient attention, either from the medical profession or the public. He says that the women of the working classes make tea a principal article of diet instead of an occasinal beverage; they drink it sevsral times a day, and the result is a lamentable amount of sickness. Dr. Arlidge remarks that a portion of the reforming zeal which keeps up such a fierce agitation against intoxicating drinks might advantageously be diverted to the repression of this very serious evil of tea tippling among the poorer classes. Tsa, in anything beyond modsrate quantities, is as distiuctly a narcotic poison as is opium or alcohol. It is capabls of ruining the digestion, of snfeebling and disordering the heart's action, and of generally shattering the nerves. And it must be remembered that not merely is it a question of narcotic excess, but the enormous quantity of bot watsr which tea bibbers necessarially take is exceedingly prejudicial both to digestion and nutrition.

Cod-Liver Oil Pills.—Dr. Van der Court, of Brussels, prepares cod-liver oil by adding carefully pulverized slacked lime to the oil, little by little, until the consistency requisite for forming into pills is obtained. Of this mass he gives four or five grains as a dose, after each meal, flavoring it witb a small quautity of oil of bitter almonds, or other substance. This remedy he considers to be in many respects better than the liquid oil, and quite useful in the early stages of consumption. The more chronic the character of the disease, the more good may be expected from its administration.

Sleep and Dreams.

Professor Humphrey, the distinguished physiologist of Cambridge, England, has given his views of the physiology of sleep, dreams and cerebral action, in a lecture befors the Roya Institution. He assumes that the npper regions of the brain are those which minister to the higher mental operations, consciousness, volition and reason, while the basal portions are more immediately connected with the operatioas of life. Ths cause of sleep ho holds to he a slight deterioration of the tissues which resnlts from their functional activity dnring the day, and is carried so far as to interfere with the higher and more cerebral operations, and which necessitates protracted rest for the recovery of the nutritive halance. Dreaming he regards not as a normal or healthy accompaniment of sleep, but as a result of the abnormal or imperfect coadition of the organ of mental action. In the natural state, he says, we should pass from wakefulness to complete unconsciousness, and vice versa, almost instantaneously, and many persons do so. But more frequently the transitiou is protracted, and stages are observed in which the sleep is but partial. The cerebral organ being in an imperfect state, its action is imperfect, and the first effect of the lessening of ita vital vigor is a loss of the highest form of mental power—the control over the mental operations. This requires the highest mental effort, and is most easily lost. In this condition the thoughts ramble unchecked, chase one another confusedly over the mental field, and give rise to all sorts of incongruities of the imagination. At the same time being unrestrained, thsy are excited, and evince efforts of memory and even of combination, of which in the regulated etate of wakefulness they ars quite incapabls. In this way ths image of persons and places, events and items of knowledge, long torgotten in the ordinary state are recalled with distinctness, and we fancy that new information has been acquired, when it is only forgottsn facts that are recalled.—*Galaxy.*

Poisonous Mussels.—A sea-side correspondent of the *Alta*, says: "The mussel is large, and at certain seasons is very palatable, but at the present writing they breed, and then sickness is the result of eating them—death resulting in a great many cases. A bottle of sweet oil is the most effectnal remedy. In one case, where an individual had eaten mussels after boing warned, he described the feeling as if he was as light as a feather, in fact he held himself down on his bed in order to keep himself from flying to the roof of the house. He said it seemed to him that his head was twice its usnal size, and in fact his whole frame had doubled in proportion, but still a feeling of lightness, not at all in conformity with his bulk, seemed to him to exist."

Earth Poultices for Poisonous Bites.—A correspondent of the *Scientific American* suggests that a poultice of clay or common swamp or gutter mud should be applied as soon as possible to the bites of reptiles, or stings of insects, etc. The correspondent says he has successfully tried it upon himself. In one case hs was stung by a numerous swarm of the yellow hornets in many places in his neck and arms. He went to a swamp near, the poison being so severe that his sight was much affected. He immediately applied the mnd, and, in half an hour, he went to mowing again, with only a small sore lump round each sting. He knew a neighbor who was bitten by a rattlesnake some miles from home; his companion left him and went for help as fast as possible, it being just night. He was not able to return until morning. When going, he met tho man returning, with the poison conquered. He had got to a swamp, dng a hole, inserted and buried the bittsn place in the mud. That was all.

Spread and Extent of Intemperance.—A report on this subject recently made to the Legislature of Massachusetts, estimates that there are 600,000 persons in the United States who have lost their power of controlling the appstite for intoxicating liquors, and that in Massachusetts thers ars 23,000 of that class, of whom two psr cent. die yearly through drunkeness. In Europe, statesmen are already alarmed at the progress of the vics, and the increasing consumption of liquors. The governments of France and England are agitated on the snbject. The *Medical Press* is also discnssing the subject from tbe sanitary as well as moral and economic stand point.

Sun-Stroke and Heat in New York.—The first week of July, 1872, will bs made memorable in the mortuary annals of New York for the unprecedented number of deaths from all causes, but notably so for the mortality from sun-stroke. The unprecedentsd numbsr of 184 deaths from sun-stroke alone, were registered during that week; while the deaths from all causes during the first six days only were 1,348—more than double ths usual average for the corresponding period for ssveral years previous.

Dr. Angus Smith gives a good rule for ascertaining the amount of carbonic acid in the air of houses: "Let us keep our rooms so that the air does not give a precipitate whsn a 10½ ounce bottleful is shaken with half an ounce of clear lime water," a sanitary regulation which can easily bs carried out.

MINING AND SCIENTIFIC PRESS.

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ILLUSTRATIONS AND REPORTS OF MINING ENTERPRISES WANTED.—Drawings or photographs of mining works that are of general interest to our readers are solicited for publication in this journal. Official reports of Companies, and description of mines of importance, of special interest, are also desired. Sketches of any new method and discoveries will be very acceptable.

San Francisco:

Saturday Morning, July 27, 1872.

Gold and Legal Tender Rates.

SAN FRANCISCO, Thursday, July 25, 1872.—Legal Tenders buying, 87¾; selling, 88¼. Gold in New York to-day, 114⅛.

Table of Contents.

ILLUSTRATIONS.—Canal Boat Propulsion, 49. Microscopic Forms of Life in the Human Mouth, 54. Gold in Upper Burmah, 56. The Eureka Pump, 57.

EDITORIALS.—Fire Damp from Anthracite; The Academy of Sciences, 49. The Pacific Coast and San Francisco; The Effect of Strikes on Commerce, 54. The Presidency of the California State University, 56. New Silver Mines; Peruvian Railroads, 57.

CORRESPONDENCE.—Notes of Trsvel in Lander County, Nevada, 50-51.

SCIENTIFIC PROGRESS.—Vegetsble Physiology; The Pacific Ocean; A Singular Meteor; An Enormous Ruby; The Planet Juhiter; The Smell of Onions, 51.

MECHANICAL PROGRESS.—Steam in its Fickle Moods; American Locomotives for Europe; Indelible Ink for Zinc Labels; Paper as a means of Defence; Another Monster Ship; Puddling hy Petroleum; Rsilwsy Progress, 51.

MINING SUMMARY from vsrious Counties in California, Arizona, Idaho, Montana, Lower California and Utah; Mining Shareholders' Directory; Stock Report, 52.

USEFUL INFORMATION.—Sharpening Edge Tools; Voracity of the Pickerel; The Development of the Lohster; The Time Planets Would Take to Fall into the Sun; Increase of Tea Drinking; Facts about Tacks; Improved Letter Envelope, 55.

GOOD HEALTH.—The Small-Pox Invasion; Tea Drunkards; Cod-Liver Oil Pills; Sleep and Dreams; Poisonous Mussels; Earth Poultices for Poisonous Bites; Spread and Extent of Intemperance; Sun-Stroke and Heat in New York; 55.

DOMESTIC ECONOMY.—A Chapter on Pickles; The Inside of Houses; Detection of Sulphuric Acid in Vinegar; To Test Green Paper for Arsenic; Protecting Furs from Moths; A Test for the Quality of Potatoes; Worms in Flower Pots; Practical Receipts, 59.

MISCELLANEOUS.—New Incorporations; Meetings and Elections, 57. Patents and Inventions: Official Notices about Patents; Regulations Under the New Mining Law, 60.

CALIFORNIA FISH AND BIRDS.—It would seem that the New Zealand people do not have a very lively appreciation of the fish and birds of California. The Auckland Acclimatization Society, who are in correspondence with the San Francisco Acclimatizatiou Society, resolved recently not to have anything to do with American birds. As to the fish, they came to the conclusion that the California salmon was a very inferior kind of fieh, of no use for sporting purposes, and would not jump at a fly. Some one stated that it very much resembled the hall trout of Scotland, from which we infer that the hall trout of Scotland do not amount to much. The Society acknowledged the letter of the Secretary of the San Francisco Acclimatization Society with thanks, and said that they would exchange any thing they had, hut that there were plenty of California quail in the Province at present, and they wonld wait for further instructions concerning the trout.

OUR STOCK TABLES.—We desire to call the attention of our readers to the improvements and extenaons whish we have made in the report of the stock sales and our "Mining Shareholders Directory." We intend paying particnlar attention to these departments hereafter, helieving that the increased interest in the mining share market which haa taken place in the last few months will materally aid in the development of mining propertiea in different parte of the interior, and our numerous readers in the mining districts are therefore much more interested in the matter then they have been heretofore.

Gold in Upper Burmah.

[Written for the PRESS by W. BREDEMYER, D. M. D. P.]

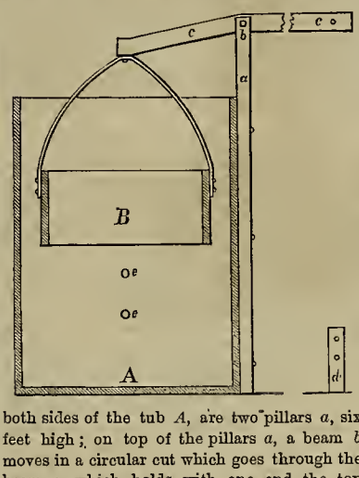
The first discoveries of gold in Upper Burmah were made centuries ago in the eand and mud of the Irrawaddy river, and its tributariee between the range of mountains belonging to the Himalaya and Ava, the old residence and capitol of the Bnrmah kings, and on the eidee of this river, but more particularly on its tributariee, thousands of men, women and children are working daily. Their usual appliancee for separating the gold from earthy material are the pan, and they gain with this from fifty ceuts to ten dollars a day. The pan is the same as in nse in all parts of Borneo, Australia and America.

This process being very elow, I introduced another mode of separating the gold in which I could work much larger quantities of dirt in less time, without any lose of gold whatever. This mode is very simple and nseful in places where there is

Little Water,

As I cau, after the earthy materials have settled, use the same water again.

It consists of a rectangular wooden tub, five feet long, three feet wide and four feet deep, with three feet of water inside. In this tub *A*, in the accompanying cut, ie hung another tub *B*, four feet, four inches long, two feet four inches wide, and one foot deep. The bottom of *B* ie sheet iron, thickly perforated with holes. On



both sides of the tub *A*, are two pillars *a*, six feet high; on top of the pillars *a*, a beam *b* moves in a circular cut which goes through the beam c, which holds with one end the top frame (which is iron) of tub *B*, and the other end is fastened at *d*.

When the tub *B* is half filled with dirt, one man gives to the tub *B* a springing motion by lifting the beam c gently, bnt quickly, up and down. The water, together with the motion, will force the gold, as the heavier substance, through the holee to the bottom, and the dirt and stones remain at the top, and the lighter earthy substances are washed away over the tub, *A*. After a while the motion ceases, the beam c is fastened again at *d*, the remaining earthy eubetance and stones in top of the tub *B* are taken gently off by an iron scraper; the tub *B* is filled again, and the same process ie repeated. The tub *A* should be cleaned every twenty-four hours by taking the tub *B* away, and letting the water off by e. The gold recovered in Burmah by this process of washing is perfectly free from all other substances.

Quartz Veins.

The mountain range in the gold district of Upper Burmah is principally silicious, micacious and argillaceous ehales, appearing together with granite at the surface in very many places. The elates appear in an angle of sixty and sixty-five degrees, and extend far over the country, from N. N. W. to S. S. E. These have been hroken by porphyry, basalt and eyenite. In the lower parts most all are slaty rocks, quartz and micaceous sandstone. The highest parts of the mountain contain sandstone, with numerous quartz veins, from one to fifteen feet in thickness. From time to time reappears the granite rock, forciug its way about every part of the area. It appears in large hanks and masses abruptly above the aurface. In other parts are dioritea, feldspar and porphyries, which alters the appearance. The quartz veins appear in the aame manner as all other mineral veins.

The greatest depth to which thesc veins are marked is abont two hundred feet, and they have yielded from six to eight ounces per ton at these depths, in some localities, and from fifteen to seventeen ounces a ton at other places in the country.

In former times the Burmese had not the slightest idea of mining. Their tools and methods were indeed very primitive; they worked about fifty or sixty feet deep, and when foul air and water stopped their proceedings, they etopped work aud commenced anew at other places.

I have opened during my etay in the couutry most of the old mines again, and maetered the water without engiues, labor being cheap, with chaiu pumps and water wheels. (I must mention here, that in the whole of Burmah on all the mines under my management, we had to do everything without engines). I always worked these gold mines on the same principal as any other mineral veins. By this means I advanced qnickly, being at much less expense and risk, never having trouble with water, fire or foul air, and have never yet experienced any accidents.

In former times the Burmese used for pulverizing the quartz an apparatus very much like a Mexican arastras. I introduced stamps, set in motiou through water wheels similar to that in use at the Commern Mechernicher lead and silver mine in Germany (Rhine Province).

I have no doubt but that Upper Burmah will turn out in time most certainly ae rich, if not much richer than California and Nevada. I am not permitted to give more information about Burmah than I have done already, as I had to swear before entering service ae Superintendent of mines by His Majesty, the King of Burmah, eecrecy concerning the customs and resources of the different parts of Burmah, Kakhyeeu and the Kahn States. I was at one time most horribly treated, crucified, by being tied to a tree, chains put on my hauds and feet in prison, and at last poiaoned on euspicione ouly, in July, 1869, which circumstancee were reported at the time in the Calcutta, aud some of the European journals.

COPPER.—James Lewis & Son's monthly report on oree and metal, dated Liverpool, July 1st, says that since the middle of June the market has been weak and inanimate and prices lower; sales amounted to 3,000 tous at from £107 to £102 per ton. On the 4th of July smelters advanced their quotations £5 per tou, £116 being the value of "tough cake," and £121 sheet copper. It ie thought that with cheap money and great scarcity of ore and regulus, prices will not recede much further at present; on the contrary, it is not unlikely there may be an advance if shippers are compelled to enter the market and take off a considerable quantity of bars. Early last month they purchaeed 1,000 tons, on private terms, but the price was understood to be about £106 per ton. Chili exports to June 2d amounted to 28,521 tons against 20,678 tons during the eame period laet year; 30,002 in 1870 and 34,888 in 1869. Stocks of West Coast prodnce are estimated at 14,914 tone, Fine, against 13,920 tons on the first of June. On the let of July last year there were 22,165 tons fine, when quotations were, bars, £68, ore 14s. Quotatione on July 1et, this year, were 20s 6d per unit for ore and regulue and £102 and £104 per ton for Chili bars, on spot, according to brand.

MINING EXPEDITION.—Two companies of men have been organized in Truckee connty to proepect for mines in the Apache country in Arizona, which means anywhere in Arizona. There are many rich minee all through the Territory, but prospectors had better wait a little while until General Crook gets through proepecting for Indians before they begin to prospect for gold or silver. They may "strike it" but etand a good chance of getting strnck themselves. The parties who intend going expect a peace treaty to be concluded before they get there, and will then depend on certain Apache chiefs to take them to a place exclusively held by these Indians where white men have never been allowed to euter and remain alive. The editor of the Truckee *Republican* very properly throws cold water on the euterprise, and says he would rather take his chances of life with Dr. Livingstone in the wilds of Central Africa, or among the Arctic icebergs, hunting np the North Pole, than to trust hie person to the magnanimity of the Apaches in the heart of Arizona.

A LOCAL RAILROAD.—The land-owners of Solano and Yolo counties have under consideration a proposition to build a narrow-guage railroad from Maine Prairie, in Solano connty, across the country to the mouth of and through Cache creek canon. The length of the projected road ia from 30 to 35 miles, but it would probably be extended into Lake county.

THE number of vessela now on the way to this port is greater than at any other time.

The Presidency of the California State University.

[From the Pacific Rural Press.]

At the meeting of the Regents on Tuesday last, it was expected that an election of President would be had. The meetinge of the Board are private, but the reports given out by the Secretary are to the effect, that the election was postponed one week, but no reasons are aesigned therefor.

We understand that Prof. Gillman, President of the Sheffield School of Science, of Yale College, has consented to accept the Presidency of the University if elected. Unknown to himself, he wae proposed and elected some two years since; but for certain and satisfactory reasone, he was not at the time able to accept the position. Prof. G. was then the choice of even the member of the Board whose name is now used (without denial) as a candidate against him.

Much regret was expressed at the time by the friends of the University, who knew Professor Gillman best, hie excellent fitness for the position and his sterling qualities; and now as then, we consider him in the highest degree acceptable. The election of a man to fill this position should be above any consideration of individnal favor rendered on the part of any man. Higher than mere personal friendship are the enduring interests of the institutions, and they should be guarded and fostered and be the pride of every iutelligent Californian.

No practical politician can hardly be found pure enongh to eerve in the capacity of President of the University without bringing dissentions. No mere headful of money-making brains can be popular enough to secnre the full unity and the beet efforts of all interested in the University. There are well informed men and business talent enough in the Board of Regents to carry on all the strategy necessary for the good of the concern or the interests of the people.

There are strong argumente in favor of securing the services of a man like Professor Gillman, who is in active training and spirit, and alive with the best experieuce of the day for such a position and we hope the Board will act with an eye single to the best and future interests of the Univereity, and not with reference to personal friendship or other individual relations or leseer considerations of any nature, nor let the opportunity be lost of making a grand, bold step toward securing the future onward progrese of the institution.

Moreover, we had enpposed that this high poeition was reserved to be occupied by one so entirely removed from all connection with previons efforts and movemente touching its creation, that not one objection could be raised on this or any other grounds.

No man can do too much gratuitously for the University to be fully rewarded by the eatisfaction of aiding the noblest work yet undertaken on this Coast. Its influence on future generatione is beyond human reckoning. What man shall say who has done most for the inetitution? Who has a right to eeek material reward?

Here is an institntion eminently the creation of the people of the State, and therefore in all its departmente ehould be made in the highest degree subservient to the public good, and we earnestly hope that throngh friendship and favoritism the Board will not do itself the injustice to elect one of its own wealthy and influential membere to the highest and largeet salaried office when the best, most practical and deeirable talent in the Union is offered—a person known and esteemed throughout the nation.

The people want the Presidential chair of the University, filled by a man of the highest literary attainment, coupled with that of a genial heart, that can go out in all its cosmopolitan fullness towards the people, and far above all snspicion of any exercise of personal favoritism.

Such a man we believe has been found in Professor Gillman, and we hope hie election will he by the nnanimous vote of the Board.

The magnitude of the interests involved in thia question have caused us somewhat reluctantly to indite this article, which, however, is rendered without persoual ill will; or a desire to detract from the just merits or praise of any one.

ART ASSOCIATION.—The exhibition of paintings under the auspices of the Art Association of this city waa opened on the evening of the 23d inst. to members. The exhibition, which posaesses much merit, is now available to the public.

NEW SILVER MINES.—A correspondent of the Helena *Herald*, (Montana) writes that very rich silver veins, in astonishing abundance, have been discovered on the ridge between Elk and Cherry Creeks, forming the divide of Madison and Gallatin counties. Considerable excitement now exists about this new mining locality. The ledges that have a westerly and easterly course, dip north; and those that have a northerly and southerly course slant east. The crevices vary from one to four and a half feet in thickness. Some of the main east and west running ledges are traced and located for about seven miles in a westerly direction to the Madison river, and easterly a mile or two; *across* these ledges four others have been found, showing large and solid crevices. It is stated that the quartz goes from $210 to $2,000 per ton in silver and gold.

Rich milling ores have been found in the new "Silver Zone" district, in the range 18 miles south of Toano, in inexhaustible quantities. These mines are in the same range as the Pioche deposits, and show good indications. The formation is granite and shale. The character of ore is excellent, and the district bids fair to become one of great importance.

According to telegrams one of the greatest bodies of mineral ever discovered has been located by two men from Illinois, named McHenry and Hughes, in Wasatch Range, 7 about seven miles south of Kimball's Hotel, Parleo's Park, and twenty-five miles from Echo, on the Central Pacific Railroad. The ledge crops out seventy feet, with an average width of thirty feet. Assays show a yield in silver of from $250 to $1,100 per ton, of free milling ore. The rock in sight is estimated to be over 20,000 tons, valued at over $5,000,000. Old mining experts and prospectors are said to be greatly excited.

CAVE IN THE CROWN POINT.—A cave occurred in the Crown Point mine on the morning of the 19th inst., between the 1,100 and the 1,200-foot levels. There were about 80 men in that part of the mine in which the cave occurred, but fortunately no one was injured. As they were just changing the shift they were not all at their stations, or there would undoubtedly have been loss of life. All the lights were blown out in the level, and also in the corresponding level in the Belcher. One peculiar circumstance connected with the cave as related by the Virginia *Enterprise* was the fact of all the rats leaving the chamber some time before it happened. They had probably felt the gradual closing up of their holes and hiding places previous to the cave, and left for other quarters. The damage was at first considered slight since only about 30 tons were said to have fallen. One of the men, however, says 3,000 tons is nearer the mark. The Superintendent wrote on the day it occurred, that it extended up from the track floor of the 1,200-foot level five sets, and four or five sets in length, closing the drift and leaving from 30 to 50 tons of loose ore in sight. A dispatch of the 23d inst., confirms the Superintendent's report, and says that everything is going along as usual.

IMPORTANT DITCH ENTERPRISE.—Messrs. J B. Wortser, Diggles, Smith and others have purchased the interest of all parties owning the old Knuff ditch, with the right to use the water in Kidder creek, and intend repairing and extending said ditch. The Yreka *Union* says that the present owners intend carrying the water across the divide near Muggansville in iron tubes laid on the surface, or below the surface, instead of a flume. The tubes will be fifteen inches in diameter in 12-foot sections. The iron, which has been purchased will be bent and punched in this city, and put together on the ground. The pipes are expected, under the pressure, to carry 800 inches of water. The company intend carrying the water both to Oro Fino and Muggansville. It will bring the water 200 feet higher than the present ditch at the former place, and will supply the means of working a large amount of hitherto unavailable ground. The ditch will be, when completed about fourteen miles long.

"DYNAMITE".—An evening cotemporary, which is usually very correct in its assertions, speaks of interesting experiments in Wales, with a new explosive called "Dynamite," the invention of a Mr. Nobel, of Hamburg. It is a compound of infusorial earth and nitro-glycerine. This Dynamite, or, more properly speaking Dynamit, is merely Giant Powder, with which we are all familiar on this Coast. When the company who manufacture it in this country, was formed, they thought it better to drop the Greek name and adopt an appropriate English one. Experiments similar to those referred to by our cotemporary, were tried here a few years since. It is not a new substance, though a very useful one.

The Eureka Pump.

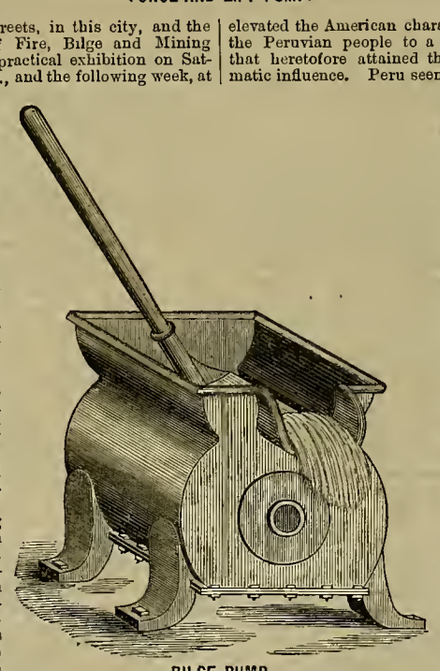
The accompanying cut represents two different forms of the Eureka pump, which is just being introduced on this Coast by Mr. J. M. Keeler. The construction of this pump is very simple, consisting of double valves. Its simplicity makes it difficult to set it out of working order, and easily rectifies, if it does. One of 1,000 gallons per minute capacity, can, it is claimed, be worked by one man easily, while other pumps of similar capacity require a force of many horse power. It can be used for extinguishing fires, and as a ship, house, farm and mining pump, or in any place where a pump is used. As a ship pump it is specially useful, since, it is said never to choke with chips, shavings, corn, wheat, or anything not too large to pass the valves.

FORCE AND LIFT PUMP.

Among the many testimonials to its efficiency is one from the Superintendent of a coal mine in Ohio, where it has been in use some time. After they were in 600 feet the water compelled their using a 15-horse power engine, with a pump of another pattern. Hearing of this one it was tried, and the mine relieved of water with one man's work as easily as the engine did it. The pump was afterwards run on half time, whereas the old one with engine was kept running all the time.

One of these pumps is now temporarily in use at the corner of Montgomery and Clay streets, in this city, and the different styles of Fire, Bilge and Mining Pumps will be on practical exhibition on Saturday the 27th inst., and the following week, at Brittain & Holbrook's on California street. The pump has been approved by the Board of Supervising Inspectors of Steam Vessels of the U. S., and by the Secretary of the Treasury, as appears by a circular issued from the Treasury Department, Feb. 21, 1872. It has received the approval of business and scientific men in the East, where it has been tried and worked successfully. If it does half that is claimed for it, the pump will be of special benefit on this Coast.

Parties desiring further information may apply to Capt. J. M. Keeler, Cosmopolitan Hotel, in this city. The Captain is an old Californian, and tells as that this pump is exactly suited to the wants of this Coast, for mining purposes particularly, while it can be used for irrigating, and in fact for any purpose to which a pump can be applied.



BILGE PUMP.

MINING ENGINEER.—Mr. W. Bredemeyer, the writer of the "sketch of the Geology of Upper Burmah" in our last week's issue and "Gold in Upper Burmah" in this week's issue, is now in this city and is desirous of making an engagement as mining engineer or superintendent. Mr. Bredemeyer is a graduate of the School of Mines in Dureu and Bonu, in Prussia, and has traveled for the past twelve years in the mining regions of India, Burmah and Japan. He comes to this Coast for the purpose above mentioned, and we would feel obliged to any of our friends in the mining districts who desire a gentleman of good mining education and extensive experience to be connected with their properties, if they would address a letter to that effect to Mr. Bredemeyer, in care of our office.

Peruvian Railroads.

A correspondent of the *Call*, who is evidently posted, writes that paper about the Lima and Oroya railroad in Peru. The distance is one hundred and twenty miles; highest altitude to be reached, 16,000 feet; gauge, four feet eight inches, and the grade very heavy. Trains were running at last accounts to Rio Seca, or sixty miles beyond Lima. The difficulties to be surmounted in building the road are said to be great. From Rio Seca back to Lima the trains are run without steam, the grades being uniformly down. Engineer's wages are said to be one hundred and fifty soles per month, a sole being ninety-six cents, American gold; first-class mechanics and blacksmiths get five soles a day; carpenters, three and a half to four and a half dollars. Good men in these departments are always in demand, the high price of living and unhealthy climate keeping men away from the country. Foreigners in Lima suffer more or less from bilious attacks, fever and ague, etc. Mr. Meiggs, whom all early Californians will remember, is successful over all competitors in getting contracts from the Peruvian Government for building railroads, which, the correspondent says, "in connection with his unostentatious generosity, and the liberal policy he has manifested towards all those in his employ, has elevated the American character in the eyes of the Peruvian people to a position far above that heretofore attained through any diplomatic influence. Peru seems to be considered a sort of modern Ophir, among many engineers and railroad employés, and frequent questions are asked by this class of people about the country, wages, etc. It would seem, from this correspondent's view of the matter, that the Government is an enterprising one in the matter of railroad building, but the climate is a severe one for strangers. He speaks of a kind of disease called the "Oroya fever," which prevails in the section in which this road is being built, and which at one time seemed likely, from its ravages, to prohibit its construction altogether. In the elevated regions around Arequipa, the terminus of the first railroad built in Peru by Harry Meiggs, these disorders are unknown. This letter gives us more practical information on the subject of this gigantic enterprise than any we have seen.

COAL IN ENGLAND.—Dispatches from London say that the price of coal is steadily advancing, and that the ocean steamers have raised their fares. Everything connected with the coal trade is higher. Importation from Belgium has commenced. This is a bad outlook for parties connected with the iron interest, since it will undoubtedly influence the already high price of iron. A scarcity of coal in England is something unusual, since its resources in that respect are proverbial. The production of pig iron in Great Britain, has steadily increased since 1864 in the ratio of 47 to 65, and the demand for coal has proportionately increased, which is one important reason for this rise in price.

New Incorporations.

MENDHA S. M. Co.—July 19. Location: Highland District, Lincoln county, Nevada. Capital $5,000,000, in 50,000 shares. Trustees—Thomas Bell, C. J. Brenham, O. F. Giffin, James Fiudla and Henry Raymond.

AMADON TUNNEL M. Co.—July 19. Location: Ely District. Capital stock, $2,000,000, in 20,000 shares. Trustees—S. Steinhart, H. Mayers and N. C. Fassett.

JOHNSON G. AND S. M. Co.—July 19. Location: Sierra County, Cal. Capital stock $1,600,000, in 16,000 shares. Trustees—Peter Johnson, Peter N. Ryan, Charles O'Donnell, W. T. Bradberry and Nicholas Steiner.

HOME G. M. Co.—July 22. Object: Mining and the buying and selling of mines. Capital $1,000,000, in 10,000 shares. Trustees—F. H. Waterman, John Bell, Charles Hosmer, Thomas Findley and Charles Webb Howard.

THE PRINCE REGENT CON. S. M. Co.—July 20. Location: Nevada. Capital stock $3,000,000. Trustees—P. J. White, J. M. Allen, W. J. Jones, Henry Baker and M. B. Terwilliger.

SILVER LICK CONSOLIDATED M. Co.—July 24. Location: Eureka District, Lander county, Nevada. Capital stock, $5,000,000, in 50,000 shares. Trustees—Alpheus Bull, John O. Earl, David B. Blair, George W. Clark and L. A. Booth.

PIOCHE CHAMPION Co.—Location: Ely District, Lincoln county Nevada. Capital stock, $3,600,000, in 36,000 shares. Trustees—Emile Hestres,, George Reiter, Alexander E. Sahatie, Albert Scharowski and Theodore La Roy.

THE certificate of the increase of capital stock of the Hardy Coal Mining Co., from $200,000 to $500,000, divided into 5,000 shares at $100 each, was filed on the 22d inst.

Meetings and Elections.

Trustees for the Tecumseh Mining Company were elected on the 18th inst. as follows: J. F. G. Eggers, John Greif, Joseph Gatz, P. J. Herrmann and George Eggers.

The Pauper Mining Company have elected the following Trustees: D. Fay, John Fay, John W. Coleman, A. H. Lissak and G. W. Beaver. The Board was organized by the election of D. Fay as President and Joseph L. King as Secretary.

The annual meeting of the Union Consolidated Silver Mining Company was held July 20th. J. J. Hucks, Geo. D. Roberts, M. J. McDonald, F. M. Freund, and S. W. Lee, were elected Trustees. At a subsequent meeting of the Trustees J. J. Hucks was elected President: J. M. Buffington, Secretary, and Jas. R. Lee, Superintendent.

The Pioche Champion M. Co. elected the following Trustees on the 20th inst.: A. E. Sahatie, George Reiter, P. Hestres, T. LeRoy, and A. Sherowski. D. Watteler was chosen Superintendent, and A. Noel Secretary.

Trustees for the Dardanelles Mining Company were elected as follows on the 20th inst.: Jas. A. Pritchard (President), O. C. McCracken and J. J. Robbins. Jos. L. King was retained as Secretary, and J. P. Jones as Superintendent.

At the annual meeting of the El Dorado South Consolidated Mining Company, held on the 18th inst. the following gentlemen were elected Trustees: A. Hayward, J. S. Slauson, W. S. McCormick, H. Epstein, H. Mayers, W. F. Leon and J. Steinhart. At a subsequent meeting of the Trustees J. S. Slauson was elected President; H. Epstein, Vice-President; and J. W. Cask, Secretary.

At a meeting of the Pallis Mining Company, Ely District, Nevada, the following Trustees were elected: George A. Treadwell, President; Charles F. Hamilton, Joseph Bremer, General P. E. Connor and Charles J. Deering. A. Treadwell was appointed Secretary, and John B. Martin, Superintendent.

At the annual meeting of the Yellow Jacket Mining Co., held at Gold Hill, Nevada, the following Trustees were elected: Thomas G. Taylor, William Sharon, D. L. Bliss, T. B. Stover and G. W. Hazelton. At a subsequent meeting of the Trustees, the following officers were elected: Thos. G. Taylor, President; G. W. Hazleton, Vice President; Wm. Sharon, Treasurer; Thomas G. Taylor, Superintendent; G. W. Hopkins, Secretary.

The first annual meeting of the Arkansas Mining Company was held on the 22d inst., and L. L. Robinson, R. Bayerque, J. M. Byrne, J. J. Valentine and J. Menu was elected Trustees. At a subsequent meeting of the Trustees, L. L. Robinson was elected President; R. Baycrque, Vice President and Treasurer; George Davidson was appointed Secretary *pro tem.*, and H. Phillips, Superintendent.

MINING SALES.—The San Andreas *Citizen* says that one-third interest in the Zacatera mine, near West Point has been sold by J. Lefoy for $8,000.

The Deer Lodge *Independent* informs us that R. S. Kelley of that place, has purchased five twenty-fourths in the Rock Creek Ditch for $12,000.

The Chloride mine in Humboldt county has changed hands. No figures given.

A conditional sale of three-fourths interest in the Good Will placer mine, on the San Gabriel, in Los Angeles county, has been made for $10,000, that amount to be used in developing the mine by hydraulic process.

A FINE bed of iron ore has been discovered near Oswego, Oregon.

Domestic Economy.

A Chapter on Pickles.

Pickles, a "Terrible Temptation"—A "Device of the Enemy."

We know of no more convincing proof of the total depravity in our natures, than the profound desire for pickles, at just the time and moment when we ought not, above all things, to eat of them. The word pickle, in itself, has a dark end evil sound. It is a synonym of unwholesomeness, and undoubtedly had its origin in the period of "The fall," which must have been of considereble duration to comprehend all the evils ascribed to it. But until the world is vastly wiser and better, will pickles go out into utter darkness, and be known no more. There never was such a thing as a wholesome pickle known; but as Sin has a ministry as well as Good, we purpose to lend a helping hand to Evil in giving a chapter on pickling, and afterward, like Pontius Pilate, wash our hands of the whole matter.

General Rules.—For heating vinegar, use a porcelain lined vessel. Brass, copper or tin should not be used; but if used the greatest care should be observed, both in their cleanliness and in pouring the vinegar out as soon as cooked. Otherwise, serious results may supervene. Use *wooden* knives, forks and spoons, if such implements are needed in the pickling operations.

Vessels for Pickles.—Large mouthed, glass bottles for small quantities; wooden vessels for large quantities may be used, but glazed jars must NEVER be used, as the vinegar acting upon the glazing; produces a strong POISON.

Vinegar.—The best is wine vinegar, but it is expensive. The next is cider vinegar. Beer vinegar comes next. Pryolignic vinegar is exceedingly unwholesome. By the term pyrolignic, we mean that manufactured from an acid distilled from wood. If pickles present an eaten appearance, it signifies that the vineger is too sharp. The addition of alum hardens the pickles, and renders them still more "villainous." Salt affects the life of the vinegar, and its use should be avoided as much as possible. Much boiling also injures the vinegar.

Peaches.—Select the fruit fully grown, but not fully ripened. Wipe off the down thoroughly, using either a wet cloth or by pouring hot water over the peaches and then wiping them dry. To a peck of fruit allow a gallon, or thereabout, of moderately weak vinegar, three pounds of sugar, an ounce of cinnamon, and four or five cloves to each peech. The cloves may be stuck into the fruit, or the spices boiled in a bag with the sugar and vinegar. Put the fruit in the vessels to hold it, and pour the ingredients over it, boiling hot. Be careful end skim the vinegar well as it boils; cover well and set in a cold place for a few days, when drain off the vinegar, heat it hot, and pour on; when cold, the fruit and pickle may be put in glass jars and secured like preserves. Some picklers add the well-beaten whites of three eggs to the above quantity of vinegar, scalding and skimming until clear.

Pears are pickled after the same manner; small pears of uniform size are preferable.

Plums.—To six pounds of plums, three pounds of sugar, one quart of vinegar, and one ounce each of cinnamon and cloves. Arrange the fruit, sugar and spicee in layers. Scald the vineger and pour it over the fruit. Repeat the scalding for three or four days in succession.

Sweet Apples.—To half a peck of apples, make a syrup of two pounds of sugar, and one pint of vinegar. Boil the apples in this syrup until tender; then remove them and make a new syrup of two pounds of suger, and one pint viuegar. Add one teaspoonful of cloves, and the same of cinnamon tied in a bag. The first syrup may be used for sauces.

Nasturtiums.—Gatbor the seeds beforo entirely grown, and drop them into cool vinegar; when a sufficient quentity has been gathered, scald them in the vinegar, and bottle.

Green Beans.—Boil the beens in a little salt and water until tender; drain them and put them in cold vinegar into which spices scalded in a littlo viuegar have been thrown.

Onions.—Remove the outer skin of small onions; boil them until helf done in salted water; while hot, drop them into a jar of pepper-spiced vineger. Another way; soak them for three days in hrine; then sceld them in milk and water; drain, lay them in a jar and pour over cold vinegar, scalded spices and a little alum; cover closely.

Radish Pons.—Put them in a brine for three days; drain and pour over them a pickle of vinegar, cloves, cinnamon and pepper scelded together.

Beets.—Boil until tender, and drop while hot into spiced vinegar. If the beets are large, slice them. Spiced vinegar in which peaches have been pickled is good for beets.—*Rural New Yorker.*

Linseed Oil Varnish.—Take eight pounds of linseed oil, and boil for one hour; then add one pound of the best rosin, (powdered,) and stir the mixture until the rosin is dissolved; now add half a pound of turpeutine, let it cool, and it is ready for use.

The Inside of Houses.

The Sitting-Room.—The sitting, or living-room, should be the lergest end pleasantest room in the house. It should always be located at the front, and on the side where the sun will enter the windows. All means should be employed to render it attractive, comfortable, and convenient, for it is generally used for the dining, as well as the sitting-room, and is occupied for more hours in the day than any other apartment. That indispensible nuisance, the parlor, may be a secondary consideretion; it has an air of frigid propriety and disuse, and the north side of the house is good enough for it. The kitchen should be spacious, and the pantry and wesh-room heudy. There can hardly be too many closets. Every house where civilized beings live, ought to be from nine to twelve feet between joists.

The Library.—Every house whose occupants pretend to any degree of refinement, ought to have a room known as the library or study. Especially should every farm-house be so provided. This room is quite as important as the parlor. Almost anything else should be sacrificed to it. It need not be large, but it must be comfortable, and somewhat secluded, and it should be conveniently furnished. Here there should be maps, shelves for the hooks, hoxes or files for the egricultural papers, and a good desk, with apartments for letters, memorandum book wherein to record farm experiments, and a blotter and ledger, wherein to keep the farm accounts with animals, fields, and crops. Farmers ought to read more, write more, and think more, they have no husiness to be clods or boors. With such a room as this, made attractive, farmer's boys will be less disposed to stroll about during the long winter evenings, or spend their time in idle talk, or in har-rooms, stores, and other places, where the idle and uncultivated assemble, end where they often acquire the first lessons in smoking, drinking, and gaming, and they are far more likely to spend their lives on the old homestead, too. Rooms ought to be of a size to fit carpeting, which is 24 or 36 inches wide.

Light.—Do not arrange your house so as to violete God's first command. Give it many windows, and then, oh housewife, keep your blinds open during the day, and your curtains drawn aside. If you let in the sun freely it may "fade your carpets," but if you do not it will be sure to the mothers and children. The sun is a good physician; he has never had due credit for his curetive qualities—for the bright eyes and rosy cheeks that come from his healing baths. Do you know how puny is the growth of a potato vine along the derkened cellar wall? Such is the health of human beings living where the sunshine is intercepted by the window's drapery. So dark wall paper is not only gloomy, but it physically unwholesome. Let in the sun—for with it come cheerfulness and strength! A dark room is an enemy of good health, good temper, and good morals.—*American Builder.*

Detection of Sulphuric Acid in Vinegar.—One of the most common and deleterious adulterations is sulphuric acid in vineger; hence any ready means of detecting such adulteration would be of great convenience to every housewife. The *Journal of Pharmacy* says that the following procese will detect the 500th part of free sulphuric acid, and is accurate for all practical purposes. An ounce of the vinegar to be examined is reduced by evaporation on a water bath to about half a drachm, or the consistency of a thin extract; when quite cold, half a fluid ounce of strong alcohol is added, and thoroughly incorporated; the free sulphuric acid will be taken up by the alcohol, to the exclusion of any sulphates; the alcoholic solution should stand for several hours, and then he filtered: add to the filtrate one fluid ounce of pure distilled water, and evaporate the alcohol off by the application of a gentle heat; the remaining liquid is then left for several hours, and again filtered; to the filtrate, previously ecidulated with a few drops of pure hydrochloric acid, a solution of chloride of berium is added, which, if sulphuric acid be present, will yield a white precipitate.

A weter heth may be readily extemporised in any kitchen by putting some sand on top of the stove and thereupon putting a teacup in the absence of a regular evaporating dish, in which the vinegar to he tested should be placed for slow evaporation.

To Test Green Paper for Arsenic.—The tests for arsenic, strictly so called, are suited only the loboratory use, but since it is the arsenite of copper that is employed for the poisonous green colors, a test for *copper* is sufficient for ordinary purposes. Put a drop of liquid ammonie on the suspected paper, and if it chenge the color to hlue, you may be sure thet copper is there, and almost ae sure that arsenic is present also. There is not one chance in a hundred that a more critical examination would lead to a different conclusion. At eny rate, we advise our readers not to use any paper on the walls of their houses, or for any other purpose, if thie simple test makes its character suspicious.

To Remove Stain from Mahogany.—Stains may be taken out of mahogany by spirits of salt, (muriatic acid.)

Protecting Furs from Moths.—The secret of the preservation of furs from motbs lies in two facts. First, thet they are put awey in season; that is, before the moth-mother mekes her appearance, which she does quite early in the spring, though this year, if she does not desire to get her tender little wings nipped, she will be later than usual. And second, thet they are so securely protected thet it is impossible for Mrs. Motb, having once been shut out, to coax, bribe, or force be way through the barrier. The conclusion, justified by the experience of several years, is, that the best, the only certain means of preservation, is to put away our furs early in the season, either in perfectly sealed paper bags, inclosed in tin cases, or in paper-boxes, with peper pasted closely over the edges of the cover, or any other opening by which a moth could creep in. Of course peste will be unreliable in any place where mice can obtain access.

A Test for the Quality of Potatoes.—It is generally understood that the value of potatoes depends upon their specific gravity, and that the heavier the potato the greater the amount of nitrogenous matter it conteins. This has suggested the idea of a convenient test by which the excellence of different varities can be readily determined, and which consists in the use of saline solutions of different degrees of strength. If, assuming one variety as a standard, we make a solution of such strength that the potato will float at about the middle of the mass, neither falling to the bottom nor rising to the surface, and apply the same test to the other potatoes, we may conclude that if one fall to the bottom it is better, or if it rise to the top it is poorer, than the standard.

Worms in Flower Pots.—Many ladies are puzzled how to get rid of the detestable worms that will infest the earth in their flower-pots. The following recipe which we find in an exchange is recommended to destroy the pests:—"Put one ounce of ammouia into one gallon of warm water, and water the plants with it once a week; they will be free from these worms, and be beautiful and green. To kill the little bugs that get on the oleender, take a piece of lime the size of a hen's egg, and dissolve it in about two quarts of water, and wash the stock and branches of the tree; they will disappear."

Practical Receipts.

Potato Puff.—Take cold roast meat—beef or mutton, or veal and ham together—clear from gristle, cut small, and season with pepper and salt, and cut pickles, if liked; boil and mash some potatoes, and make them into a paste with an egg, and roll out, dredging with flour. Cut round with a saucer, put some of the seasoned meet with one-half, and fold it over like a puff; pinch or nick it neetly round, and fry it a light brown. This is a good method of cooking meet which has been cooked before.—*Denver Tribune.*

Stewen Figs.—Put into a stew-pen four ounces of sugar, the thin rind of a large lemon, and one piut of cold water. When the sugar is dissolved add one pound of hest figs, and place the pan on a stove so that the fruit may swell gently and stew very slowly. When quite tender, add the strained juice of two lemons. Arrenge in a gless dish and serve cold.

Corn Bread.—Take four cupe of sour milk, one of these partly filled with cream; one egg, a little selt, two even teespoonfuls pulverized soda; mix the soda with a little corn meel, and stir alltogether, till it foems; then add cornmeal till a thin batter ie ohtained, and pour into hot tine, oiled, an inch deep, and bake in a quick oven.

Peaches and Cream.—Peel soft juicy peaches, quarter them, put a layer of peeches, one of sugar, sprinkling on very thick until the desired quantity is prepared. Spread thickly over the last leyer of peaches powdered loaf sugar. Set the dish upon ice or in a very cool place an hour before using; do not bruise them. Some persone like them best meshed fine, sweetened, and a little grated nutmeg added; in either way serve in small deep plates; eat with rich cream.

Baked Pudding.—The following is said to be one of the best puddings ever used in the Metropolitan Hotel of New York: Five tablespoons of corn starch to one quart of milk; dissolve the starch in a part of the milk, and heat the remainder of the milk to nearly boiling; heving salted it a little, then add the dissolved starch to the milk; hoil three minutes, stirring it briskly; ellow it to cool, and then thoroughly mix it with three eggs well beaten with teblespoons of sugar, flavor to your taste and bake for half an hour.

To Polish Furniture.—Melt together in a small vessel, ½ apound of beeswax, and ¼ of an ounce of alkenet root, until the former is well colored; then add linseed oil, and spirits of turpentine, of each ½ a gill; strain through a piece of coarse muslin.

Ham Toast.—Chop some lean ham, put in a pan with a little pepper, a lump of butter and two eggs, beeten; when beaten thoroughly spread it on buttered tost, and serve hot.

"Every Day" Pudding.—Helf a loaf of stale bread soaked in a quart of milk, four eggs, four tehlespoonfuls of flour; a little fruit, dried or fresh, is a great addition. Steam or hoil three-fourths of an hour.

To Brighten Colors.—Soda in the rinsing water will clear up and intensify almost any blue and purple. Vinegar will do the same for pink or green calicoes. It is said that a strong decoction of common hay will preserve the color of French linens and lawns.

Our Neighbor Idaho.

Agriculture in Idaho has but few prominent features of independence; her fertile valleys are limited in number as well as size. Grand Ronde, Boise and some of the southern valleye comprise the greater portion of the fertile lands of Idaho. Boise and Grand Ronde have for some years produced vegetables sufficient for home consumption. Ronde Valley is capable of producing excellent wheat, barley oats and corn; early as 1869 over 1,000,000 bushels of wheat and oats were raised in this valley, and the total quantity of flour that year amounted to 100,000 barrels—the flour from the Grand Ronde is of a very superior quality. There are four mills in the valley, one alone turned out 12,000 barrels in 1869 from that seasons' wheat.

Boise City, and all northern Idaho receive the majority of their supplies, or at least until within a year, via Columbia river and Umatilla. And for sometime until the Humholdt route was opened Owyhee merchants were obliged to freight from the Columhia, over a route, that required sixty days' travel, and sixteen cents per pound freight charges.

Humboldt Route.

As soon as it was found practically cheaper to open the Humholdt Route, Sacramento merchants were not slow in placing their heavy teams on the road. The total number of teams that carried freight into Owyhee the first season after the opening of this road was 45, and the amount of freight was over 250 tons. These figures increased every year and freight came in faster and cheaper, as the road was shortened hy the advance of the Central Railroad.

Kelton

Is now the shipping point for Boise City and northern towns. The distance from Kelton to Boise City is 246 milee; much of the freight is still sent by way of the Columbia, for the reason that Oregon still controls the northern Idaho trade.

The territory must always he supplied with certain specialties that she cannot supply from her own resources—fruit in particular. Meats and dairy produce she can help herself to a considerable amount. So far very few have undertaken the manufacturing of hutter and cheese. There is an abundance of summer feed for cattle, but the winters are too long and severe; hay is ecarce, and the streams are not large enough to irrigate meadow and pasture lands. So, to a great extent, Idaho must yet depend upon her neighbors. Oregonians have very naturally controlled this trade which is large and remunerative.

Silver City

Is nearer to the great artery of the coast, the Pacific Railroad; the county seat of Owyhee county, 210 miles from Winnemucca. Small fertile valleys occur numerously among the rugged surroundings of Silver City. Milk ranches and small gardens supply the general demand of the town. Cattle thrive well in the southern portion of Idaho on hunch grass—but the great mass of supply must he furnished from Nevada and California. Uniontown and Oreana in the Humboldt districts must also depend upon our markets. Virginia City merchants have had their ehare of this trade.

Manufacturing Goods

Must he supplied for some time, and some things must always be made ont of the Territory; here is a point worthy the attention of California manufactnring firms. Oregon is rapidly moving forward in her manufacturing interests and enterprises. In machinery she will ere long compete with our firms, for the great trade of the Territory north of us. To Idaho, in this respect, she has always sustained prominent favor. The Willamette Iron Works at Portland, turns out a class of work that finds market and favor at once. Contracts are made there at San Francisco prices without incumbrance of delay and freight charges hy sea. Oregon is doing a heavy exporting business with her neighhors, and the completion of the Central road does not tend to attract much of that business to California.

Idaho is rapidly increasing her trade, and Utah has already figured how she can command the eastern portion of it, in the event of the new discoveries in that portion of the territory proving lucrative; in way of frnits and light supplies California has had the exclusive trade, but general supplies, have been purchased in Oregon, Nevada and California, and increased trade should he established hetween our merchants and Idaho, machinery, dry goods, drugs, wares of all kinds particularly.

Business Cards.

H. C. BENNETT,
STATISTICIAN.
Reports and estimates made about all departments of Production, Commerce, and Manufacture, of the Pacific Coast. 5v24-tf

RICHARD H. STRETCH, Civil Engineer,
City and County Surveyor.
Office—Room 16, City Hall. 11v24-3m

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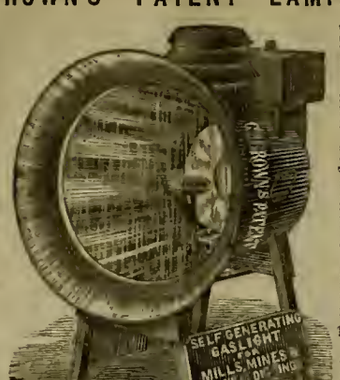

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[Continued from page 52.]

CLARA ANN AND LOMBARD.—These mines are on the western slope of Treesure Hill. A shaft is down 110 ft. on the Clara Ann. The ledge was cut at a depth of 70 ft., and for a depth of 40 ft. it widened ont to a width of 20 ft. The richest of the ore in the ledge matter ie in a streak from 3 to 4 ft. wide.

SILVER WAVE.—Breesting out in Boswell chamber. Will commence crushing ore at Swansea mill the beginning of next week. The ore in No. 4 chember continues to hold out of the usual grade. Perkine sbaft down 170 ft., in limestone and spar.

SPRUCEMONT.—Elko *Independent*, July 13th: The Ingot Co. is pnshing ehead fest. They have severel thousand tons of ore ready to smelt as soon ae their furnace is completed, which is being constructed repidly. Laborers are in demand and wages are good.

Arizona.

WALLAPAI.—Prescott *Miner*, July 6th: The furnaces—one at Cerbat and the other at Cbloride—are in operation. Several mines in the Dist. are yielding plenty of rich ore. Mr. Hardy's little mill, at Mineral Park, is crushing ore and making it pay well.

The Dist. has been visited hy a very heavy fall of rain, and $12,000 worth of tailings have been washed off from Mr. Hard's mill.

Idaho.

LOCAL RECORN.—Owybee *Avalanche*, July 13: At the Minnesota they seem to be senguine of getting a fine body of ore in the 2d level drift south.

The Elmore shaft is down 90 odd ft. for tbe 8th level, and tbe south drift ie in about the same distance from the winze, 134 ft. north of the shaft. The north drift is in over 60 ft. from tbe winze. The foreman expects to connect the sheft and the winze August 1st.

The mahogany is doing well. Elmore mill is crushing 25 to 30 tons of tbeir ore per day. They have a fine vein of ore in tbe winze below tbe 5th level, which is down 70 ft.; shaft is down 35 ft. for this level.

Tbe Empire hoisting works are not all here yet, but they have commenced drifting from the bottom of the shaft, hoisting with windlass power; not very hard running. Ledge fully 2 ft. wide.

The South Chariot is down 80 ft. below 4th level.

The Red Jacket is looking exceedingly well. Rich ore is being raised from both north and south shafts. Tbe north shaft is down 32 ft. and is ehowing a veiu of not less than 18 inches in width, and ore with plenty of free gold. The soutb shaft is down 7 ft. below the adit level, or say about 60 ft. from the surfece.

The Durango, a short distance west of the Empire has a sheft of 40 ft. in depth, at the bottom of which the ledge is ahont a foot wide, showing free gold in abundance. The last crushing some 6 yeers ago, yielded $11 per ton.

Lower California.

SAN RAFAEL.—Sen Diego *Union*, July 11: The mines of Sen Rafael and vicinity are looking well, and there are good prospects ahead. Six quartz mines are being worked, the ore being crushed by the arastra process.

Some exceedingly rich discoveries have recently been made, one of the best of tbem heing that of a very fine gold quartz lode by Mr. Misonne.

Little is being done in the way of placer mining ou account of the ecarcity of water. Some rich placers are being worked by the dry washing process.

At San Antonio, about 30 miles from San Rafael, a party of Frenchmen have recently discovered a very rich silver and copper mine.

Montana.

UNCLE BEN'S GULCH.—Deer Lodge *Independent*, July 13: Twenty men are at work in that gulch. Three hydraulics are running. The mines average from $10 to $30 per day to the hand.

HENDERSON GULCH.—Ferguson & Co. cleened up on Monday last $2,000 from 2 weeks' run. The claims averages from $15 to $20 per ton to the hand. Chas. Carlton, Jas. Burns & Co., next below, are making from $15 to $20 per day to the man. Cartwright, O'Connor & Co. are making from $30 to $50 per day to tbe hand. McDermott, Hennessy & McAndrews are meking from $20 to $40 per day to the man. The next Co. helow are puttiug down their flume, intending to work a back channel on the har. Walwork, Terrill & Davis are running two hydraulics and are making money.

Utah.

CAMP FLOYD.—Cor. S. L. *Tribune*, July 16: The minee are all makiug a very good showing. More strikes are daily reported.

STAR. Cor. same: It is reported that a 20-stamp mill has been shipped from S. F. for tbe South Camp.

A 10-stamp mill is also shortly to be erected by the "Shenandoah" and "Midas" Cos.

Work is being prosecuted on most of the promiuent ledges in camp. On the Last Cbance, the Supt. is driving a tunuel, and sinking a shaft. The formation is quartzite upon one side and lime upon the other. The ledge has every appearance of being a true fissure vein. The Hidden Treasure is looking finely. Shaft 40 ft. deep in a ledge of solid material, from 3 to 7 ft. wide, assaying from 30 to 80 per cent. lead, and from $50 to $100 silver per ton. The Osceola shows a fine body of A No. 1 ore. Operations upon the Temperance, and several other mines, have beeu suspended, temporarily, to give the men an opportunity of celebrating in proper style.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS.]

FOR THE WEEK ENDING JULY 9TH.

REAMER FOR ROCK-DRILLS AND OIL-WELLS.—Mosee Perrin aud Oliver P. Callaway, San Diego, Cel.

SPARK-ARRESTER FOR LOCOMOTIVES.—William D. Arnett, Denver, Colorado Ter.

COVER FOR JARS AND BOTTLES.—Samuel S. Butler, Petaluma Cal.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency

Official Notices About Patents.

U. S. PATENT OFFICE, June 28, 1872.

There are but few things that occesion more trouble to the Office, or more annoyance to applicants for petents, then the practice of intercepting ceses for various causes after they have been passed for issue aud the final fees peid. Tbe trouble to the Office, resulting from tbese stoppages, has been greatly increased hy thc puhlication of the volumes provided for by the joint resolution of Cougress, approved Jannary 11, 1872; and now that Congress has anthorized the publication of the *Illustrated Official Gazette*, it has become absolutely necessary to obviete the difficulties referred to.

It is therefore ordered, that—

Patents will hereafter *bear date and issue* on the Tuesday next succeeding the payment of the final Governmeut fees, though they will not be *delivered* until two weeks after the seid date. The two weeks' delay, it may be stated for the benefit of those not so familiar with the course of official business, will be occupied by the necessery priuting, photolithographing, etc.

Reissnes, designs and trade-marks mede up es a part of the seid issue will bear even date with the said patents of inveution, and are deliverable after the same interval, occupied hy tbe artistic end mechanical execution of the document, the necessary recording, etc.

After 12 M. of the date of iseue the delivery of no patent will be arrested for any cause whatever.

The issue closee at 2:30 P. M. of Monday preceding the date of the petent, end no final governmeut fees are receivable after thet time.

When patents are to issue to assignees, the aseignments must be on record hy Mondey 3 P. M. previous to the dete of said patents.

Tbie order will take effect on and after tbe 16th of July, the iesue of which date will proceed as nsual, being *dated, issued* and *deliverable* on that day.

The effect of this order will be to cause the two issnes next succeeding tbe 16th of July to bear the same date therewith, tbough the patents will be deliverahle on the 23d and 30th days, respectively, of that month.

Tbe patents which will bear date the 23d of July will be deliverable on the 6th of Angust, and on tbat day and thereafter matters will have assumed their new shape.

It will be observed that this change will work no delay whatever in respect of the delivery of any patent, hut it will amount, as compared with the present system, to a two weeks' antedating; it will remove oue cause of possible disappointment to the inventor; it will enable tbe office to keep its records unmntilated by obviating the occasional necessity for suspendiug and canceling after nnmbering, printing and paging.

M. D. LEGGETT,
Commissioner.

Regulations Under the United States Mining Laws.

MINERAL LANDS OPEN TO EXPLORATION, OCCUPATION AND PURCHASE.

1. It will be perceived that the first section of said act leaves the mineral lands in the public domain, surveyed or nnsurveyed, open to exploration, occupation and purcbase by all citizens of the United States and all those who have declared their intention to become such.

STATUS OF LONE CLAIMS PREVIOUSLY LOCATED.

2. By an examination of the several sections of the foregoing act it will be seen that the *status* of lode claims located *previous* to the date thereof is not changed with regard to their *extent along the lode or width of surface*, such claims heiug restricted and governed hoth as to their *lateral and linear* extent by the State, territorial or local laws, customs, or regulations which were in force in the respective districts at the date of such locations, in so far as the same did not conflict with the limitations fixed hy the mining statute of July 26, 1866.—(14 Stat., 251.)

3. Mining rights acquired under such previous locations are, however, enlarged by said act of May 10, 1872, in the following respect, viz.: The locators of all such previously taken veins or lodes, their heirs and assigns, so long as they comply with the laws of Congress and with State, territoriel or locel regulations not in conflict therewith, governing mining cleims, are invested hy said act with the exclusive posesessory right of all the surface included within the lines of their locations, and of all veins, lodes or ledgee throughout their entire depth, the top or apex of which lies inside of such surface lines extended downward vertically, although such veins, lodes or ledges mey so far depert from a perpendicular in their couree downward as to extend outside the vertical side-lines of such locetions at the surface, it being expressly provided, however, that the right of possession to such ontside parts of said veins or ledges shall he confined to euch portions thereof es lie between vertical planes drawn downward es aforesaid, tbrough the end lines of their locetions eo continued in their own direction that such planes will intersect such exterior parts of such veins, lodes or ledges; no right heing granted, however, to the claiment of such outside portion of a vein or ledge to enter upon the surface location of another claimant.

4. It is to be distinctly understood, however, that the law limits tbe possessory right to veins, lodes or ledges other than the one named in tbe original location, to such es were not *adversely claimed at the date of said act of May* 10, 1872, and tbat where such other vein or ledge was so adverecly claimed at that date, the right of the party so adversely claiming is in no way impaired by said act.

5. From and after the date of seid Act of Congress, in order to hold tbe possessory title to a mining claim *previously located*, and for which a patent hes not been issued, the law requires that *ten dollars* shall be expended annually in labor or improvements on eech cleim of *one hundred feet* on the course of the vein or lode until a patent shall have been issued therefor; hut where a number of such claims are held in common upon the eame vein or lode tbe aggregate expenditure that would be neccssary to hold all the claims, at tbe rate of ten dollars per hundred feet, may be made upon any one claim; a feilure to comply with this requirement in any one year subjecting tbe claim upon whicb such failnre occurred to relocetion hy otber parties, the same as if no previous location thereof had ever been made, unless the cleimants under the original location sball have resumed work thereon after such failure and before such relocation.

6. Upon the failure of any one of several co-owners of a vein, lode or ledge which bas not heen patented, to contribute his proportion of the expenditure necessery to hold the claim or claime so beld in ownership iu common, the co-owners who have performed tbe lahor, or mede the improvements as required by said act, may, at the expiratiou of the year, give such delinquent co-owner personel notice in writing, or notice by publication in the newspaper published nearest the claim, for at least once a week for ninety days; and if upon the expiration of ninety days after such notice in writing, or upon the expiratiou of one hundred and eighty deys after tbe first newspeper publication of notice, the delinquent co-owner shall have failed to contribute his proportion to meet such expenditure or improvements, his interest in the claim by law passes to his co-owners who have made tbe expenditures or improvements as aforesaid.

PATENTS FOR VEINS OR LODES HERETOFORE ISSUED.

7. Rights under pateuts for veins or lodes heretofore granted under previous legislation of Congress, are enlarged by this act so as to invest the patentee, his heirs or assigns, with title to all veins, lodes or ledges throughout their entire deptb, the top or apex of which lies within the end and side boundary lines of the claim on the surface, as patented, extended downward vertically, although such veins, lodes or ledges may so far depart from a perpendicular in their course downward as to extend outside the vertical side-lines of the cleim at the surface. The rigbt of possession to such outside parts of such veins or ledges to be confined to snch portions thereof as lie between vertical planes drawn downward tbrough the end-lines of tbe claim at the surface, so continued in their own direction that such planes will intersect such exterior parts of such veins or ledges; it heing expressly provided, however, tbat all veins, lodes or ledges the top or apex of wbich lies inside such surface locations, *other* than the one named in the patent, which were *adversely claimed* at the date of said act, are excluded from such conveyance by patent.

8. Applications for patente for mining claims pending at the date of the act of May 10, 1872, may be prosecuted to final decision in the General Land Office, and wbere no adverse rights are affected thereby, patents will be issued, in pursuance of the provisions of said act.

MANNER OF LOCATING CLAIMS ON VEINS OR LODES AFTER THE PASSAGE OF THE ACT OF MAY 10, 1872.

9. From and after the date of said act, any person who is a citizen of the United Statee, or who has declared his intention to become a citizen, may locate, record and hold a mining claim of *fifteen hundred linear feet* along the course of any mineral vein or lode subject to location; or an association of persons, severally qualified as above, may make joint location of snch claim of *fifteen hundred feet*, but in no event can a location of a vein or lode made subsequent to the act exceed fifteen hundred feet along the course thereof, whatever may be the numher of persons compoeing the association.

10. With regerd to the extent of surfece-ground adjoining a vein or lode, and claimed for the convenient working tbereof, the act providee that the leterel extent of locations of veins or lodes mede efter its pessage shall in no case *exceed three hundred feet on each side of the middle of the vein at the surface*, and that no ench surface rights shall be limited by any mining regulations to less than twenty-five feet on each side of the middle of the vein at the surface, except where adverse rights exieting at the date of eaid act may render such limitation necessary, the end-lines of ench claims to be in all cases parallel to each other.

[To he continued.]

MINING ACCIDENTS. — Edward Hayes was ceved upon, and hed bis leg brokon in the Cork Company's claims in Montana, two weeks since.

Alexander Corblin was killed at the Big Smoky Mill, Nevada, on the 17th inet, by being tbrown under the shaft while endeavoring to put the belt on the shaft which runs the pans.

MILL BURNED.—The Star quartz mill, boarding house, blacksmith shop, buildings, etc., on Rose Creek, American Camp District, Tuolumne county, was destroyed by fire on the 16th inst. It wae owned by P. B. Bacon of Columbia, and cost $10,000.

JAMES A. PINNEY & Co. are our resident agents for the PRESS in IDAHO CITY, I. T.

A NEW BOOK ON MINING.

The Explorers', Miners' and Metallurgists' Companion; Comprising a Practical Exposition of the Various Departments of Exploration, Mining, Engineering, Assaying, and Metallurgy. The Most Practical and Comprehensive Work on Mining Subjects Extant. Comprising 640 Pages, and 81 Engravings. By J. S. Phillips, M. E. Price, bound in cloth, $10 (in coin); in leather, $12. Forwarded by mail, in cloth, $11.40, currency; in leather, $13.75. Issued and for sale hy DEWEY & Co., Patent Agents and Publishers Mining and Scientific Press, S. F.

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Mining and Other Companies.

Owing to the time necessary to mail the present large edition of the M. & S. Press we are obliged to go to press on Thursday evening—which is the very latest hour we can receive advertisements.

Office of Alhambra Hill Mining Company,

San Francisco, July 16th, 1872.

In accordance with a resolution adopted at a meeting of the Board of Trustees of the Alhambra Hill Mining Company, Pinto Mining District, White Pine County Nevada, held this day, a special meeting of the stockholders of said Company is hereby called, the same to be held at the office of the Company, 312 Clay street, San Francico, California, on Monday, the 19th day of August, 1872, at four o'clock, P. M., to take into consideration and decide upon the proposition to increase the capital stock of said Company, from five hundred thousand dollars, divided into five thousand shares of the par value of one hundred dollars each, the present capital stock, to five million dollars, divided into fifty thousand shares of one hundred dollars each.

(Signed) ROBT. C. JOHNSON.
E. J. MOORE,
L. JACOBI,
jul29-1t R. G. LANGLEY.

Corona Consolidated Mining Company—

Location of works, Eureka District, Lander County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 25th day of June, 1872, an assessment of Ten Cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No. 409 California street, up stairs, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 31st day of July, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the 22d day of August, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. F. CRONISE, Secretary.

Office, 409 California street, San Francisco, California.
Jun29-3t

Caution.—Eagle Quicksilver Mining Com-

pany.—Location of works, Eagle Mining District, Santa Barbara County, California.

Notice is hereby given to the public not to purchase or negotiate for the following named shares, designated by the names of the delinquent owners in the Eagle Quicksilver Mining Company, as, by law, and the articles of agreement made and provided, they were duly advertised and sold in full at public auction, by John Middleton & Son, auctioneers, on Monday, the 22d day of July, 1872, for delinquent assessment thereon, and accruing costs of advertising and expenses of sale, and will not be transferred by said company:

	SHARES SOLD.	AMOUNT.
Bush, A. T.	1	$40 00
Burton, L. T.	1	40 00
Burton, Benj.	1	40 00
Brinkerhoff, S. B.	2	80 00
Church, Thos. R.	1	40 00
Crane, A. M.	1	40 00
Fernald, Chas.	1	40 00
Kylo, J. J.	2	80 00
Ploche, F. L. A.	2	80 00
Richards, Jarret T.	1	40 00

WM. H. WATSON, Secretary

Of the Eagle Quicksilver Mining Company, Room 5, No. 302 Montgomery street, San Francisco, California.
July 27th, 1872. jly27-3t

Excelsior Mill and Mining Company—Lo-

cation of works, Copo Mining District, Elko county, State of Nevada.

Notice is hereby given, that at a meeting of the Trustees of said Company, held on the 20th day of June, A. D., 1872, an assessment of Two Dollars per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the company, No. 415 Montgomery street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Saturday, the 27th day of July, A. n., 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 19th day of August, A. n., 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. FRANK SWIFT, Secretary.

Office, No. 415 Montgomery street, San Francisco, Cal.

Hudson Gold Mining Company—Location

of works, Cherokee Mining District, Plumas county, State of California.

Notice is hereby given, that a meeting of the Trustees of said Company, held on the 18th day of June, A. n., 1872, an assessment of Ten Cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the company, No. 411 California street. Any stock upon which said assessment shall remain unpaid on Saturday, the 27th day of July, A. n., 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 17th day of August, A. D., 1872, to pay the delinquent assessment, together with costs of advertising and expenses of the sale.

J. L. KING, Secretary.

Office, 411 California street.

Kincaid Flat Mining Company—Location

of Works, Tuolumne County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 17th day of July, 1872, an assessment of Three Dollars per share was levied upon the capital stock of said company, payable immediately, in United States gold coin, to the Secretary, at his office, No. 220 Clay street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 23d day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Saturday, the 14th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. H. CORNELL, Secretary.

Office, 220 Clay street, San Francisco. jul20-4t

Louise Silver Mining Company—Location

of works, Ploche, Ely Mining District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 3d day of July, 1872, an assessment of ten cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, room 5, No. 302 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Saturday, the 10th day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 7th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees. WM. H. WATSON, Secretary.

Office, room 5, No. 302 Montgomery street, San Francisco. jul6.

Morning Star Gold and Silver Mining

Company—Location of works, Great Mogul District, Alpine County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 12th day of July, 1872, an assessment of One Dollar per share was levied upon the capital stock of said company, payable immediately in United States gold and silver coin, to the Secretary, at the office of the Company, Room No. 43, New Merchants' Exchange, (3rd floor,) California street, in the City and County of San Francisco, State of California. Any stock upon which said assessment shall remain unpaid on the 20th day of August, A. D., 1872, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Saturday, the 14th day of September, A. D., 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. H. BOGART, Secretary.

Office, Room No. 43, Merchants' Exchange, California street, San Francisco. jul20-4t

Nevada Land and Mining Company—Lo-

cations, Spruce Mountain, Clifton, and Antelope Mining Districts, Elko County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 15th day of July, 1872, an assessment of Eight Cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office. Any stock upon which said assessment shall remain unpaid on Saturday, the 31st day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the 19th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery street, San Francisco, California. jul20-4t

Norman Gold Mining Company---Location

of works, Aqueduct Mining District, Amador County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said company, held on the 27th day of June, 1872, an assessment of five cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary at the office of the company, room 5, No. 302 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Thursday, the 1st day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the 22d day of August, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office—Room 5, No. 302 Montgomery street, San Francisco.

Piermont Milling and Mining Company—

Location of works, Piermont Mining District, White Pine County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 10th day of July, A. D., 1872, an assessment of Sixty Cents per share was levied upon the capital stock of said company, payable immediately, in United States gold coin, to the Secretary, at the office of said Company, Room No. 2, 418 California street, San Francisco. Any stock upon which said assessment shall remain unpaid on Monday, the 12th day of August, A. n., 1872, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Tuesday, the 10th day of September, A. n., 1872, at the office of the Company, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

jul20-4t J. W. CLARK, Secretary.

Spring Mountain Tunnel Company—Lo-

cation of works, Lincoln County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 9th day of July, 1872, an assessment of thirty cents (30) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary. Any stock upon which said assessment shall remain unpaid on the 16th day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 9th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.

Office, Room 37, third floor, New Merchants' Exchange, California street, San Francisco, California. july 13

Tecumseh Gold, Silver and Copper Min-

ing Company—Location of Works, Gopher District, Calaveras County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 26th day of June, 1872, an assessment (No. 14) of ten (10) cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, F. J. Herrmann, at the office of the Company, No. 634 Washington street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 31st day of July, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the 22d day of August, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

F. J. HERRMANN, Secretary.

Office, 634 Washington street, Room No. 2, up stairs, San Francisco, Cal. Office hours from 11 A. M. to 2 P. M.

Office of the Tyler Mining Company, San

Francisco, July 9th, 1872.

The regular annual meeting of the stockholders of the Tyler Mining Company will be held at the office of the Company, Room No 22, Merchants' Exchange, California street, San Francisco, California, on Monday, the 22d day of July, 1872, at 1 o'clock P. M. of said day

juyl3-2w ALFRED K. DURBROW, Secretary.

The above meeting of Stockholders] is adjourned to the 5th day of August, 1872, to be held at same hour and place.

ALFRED K. DURBROW, Secretary.

San Francisco, August, 22d, 1872.

jul27-2t

Union Gold Mining Company—Location of

works, Howland Flat, Sierra County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 25th day of June, 1872, an assessment of one dollar ($1.00) per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company rooms, No. 22, Merchants' Exchange, California street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 29th day of July, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 19th day of August, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

ALFRED K. DURBROW, Secretary.

Office, room No. 22, Merchants' Exchange, California street, San Francisco, Cal. Jume29-3t

William Penn Consolidated Gold and Sil-

ver Mining Company—location of works, Devil's Gate District, Storey County, State of Nevada.

Notice is hereby given, that at a meeting of the Trustees of said Company, held on the 3d day of July, A. D., 1872, an assessment of ten cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No. 6, Montgomery street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 5th day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 2d day of September 1872, to pay the delinquent assessment, together with the costs of advertising and expenses of sale. By order of the Board of Trustees.

JNO. F. POPE, Secretary.

Office, No. 6 Montgomery street, San Francisco, California. July6-4t.

Winnemucca Chief Silver Mining Com-

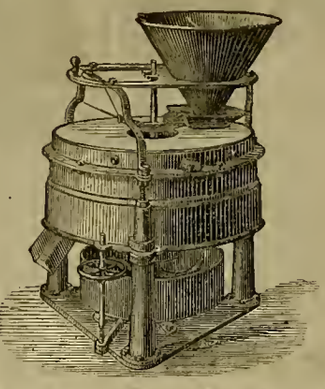
pany—Location of Works, Humboldt County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 19th day of June, 1872, an assessment of fifteen cents per share was levied upon the capital stock of said Company, payable immediately, in United States Gold coin, to the Secretary, at the office of the Company, No. 409 California street, up stairs, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 30th day of July, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the 20th day of August, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. F. CRONISE, Secretary.

Office, 409 California street, San Francisco, Cal. Jnne29-3t.

MILL STONES.



Portable Mills, Eureka Smut Machines

Bran Dusters, Dufour & Co.'s Celebrated Dutch Anchor Bolting Cloths, and General Mill Furnishing.

TRAVIS & WAGNER,

18v24-3m 41 First street, San Francisco.

THE "LEFFEL"

All sizes, and adapted to from 3 to 500 feet head

TURBINE Water Wheels

Parties desiring to economize in water power will find it for their interest to send for a catalogue and price list of the "Leffel." Power pledged equal to any Overshot in the world. Address

TREADWELL & CO., San Francisco.
Who have all sizes on hand. 3v25

THE FREAR STONE COMPANY

OF CALIFORNIA.

Office, 638 Market Street.

OFFICERS:

JAMES GAMBLE, President. | L. A. BOOTH, Treasurer.

EXECUTIVE COMMITTEE:

N. W. PEULDING. GEORGE O. POTTER, N. P. RINE. SPY

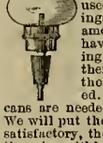
This Company will contract to furnish or put up the heaviest, strongest and most elaborate and elegant Fire-proof Stone Fronts, of any design, and every style of Plain and Ornamental Door and Window Caps, Keystones, Sills, Water Tables, Coping Ashlars, Plain and Ornamental St ne Work of every description. Fire-proof Buildings and Bank Vaults, Cemetery Work, Curbing Stones, Fountains, etc., all at prices far below native cut stone, and equal, in all respects, as to strength and durability.

Architects and Builders, before letting their contracts for Stone Work, are requested to call at the office of this Company, and examine certificates, specimens and photographs of buildings already constructed of Frear Stone in Chicago and other Eastern cities.

For further information apply to N. P. PERINE, 638 Market street. [19v24-3m

DREYFUS' PATENT SELF-OILERS,

For Shafting, Engines, Machines, Etc.



Save from 75 to 95 per cent. of oil used on shafting or machinery bearings. No better investment for the amount can be made by any person having machinery or running shafting. They are widely known for their reliability and economy. All the trouble of "oiling up" is avoided. There is no waste of oil, and no cans are needed A single trial will prove their value. We will put them into any mill, and if not perfectly satisfactory, they may be returned at our expense, and the price will be refunded. We have a large stock on hand, of all sizes, adapted to all description of boxes.

Send for Price List and Circular.

Address TREADWELL & CO.,
26v24 San Francisco.

MINING ENGINEER.

An Experienced Miner, why has superintended for the last twelve years the largest gold, silver, tin and copper mines in India, Burmah, and Japan, is desirous of obtaining a position as Superintendent of gold and silver mines; references given if required. Address W. B., Scientific Press office, 2v25tf

To Engineers and Millmen.

NATHAN & DREYFUS'

PATENT

Self-Acting Lubricators for Cylin-

ders.

Their advantages over other lubricators are so striking, that it is only a question of time for them to come into general use—their accuracy in keeping the valves and pistons thoroughly and constantly lubricated being unequalled. A close examination of this sectional view of Lubricating Cup will give an idea of its working.

The principle of working is based on an intermittent condensation of steam in the UPPER PART of the cup containing the lubricant. At every couple of strokes, the steam condensing, produces a drop of water, which, being heavier than the oil, sinks by its own gravity, and raises a corresponding drop of oil over into a tube, which arises in the center of the cup and conveys said oil directly to the chest and cylinder, this tube being the only connection from the Lubricator to the internal part of the engine. The water produced by the condensation is drawn off once a day by a side-cock, and the cup filled again with the lubricant. Another advantage is, that the condensing process refines the oil, as the water settling down thro' lubricant RAILROADS in the United States.

carries down salts and acids which may be contained therein. In this way corrosion of the steam chest and cylinder is prevented, the power of the engine improved, and an amount of packing saved. These Lubricators have been adopted on THOUSANDS of stationary and marine engines, steam pumps, steam fire engines, and locomotives by over EIGHTY

☞ Send for a Circular and Samples, for which no charge unless approved of.

Address TREADWELL & CO.,
eow San Francisco.

THE RISDON

Iron and Locomotive Works.

INCORPORATED.....APRIL 30, 1868.
CAPITAL.....$1,000,000.

LOCATION OF WORKS:
Corner of Beale and Howard Streets,
SAN FRANCISCO.

Manufacturers of Steam Engines, Quartz and Flour Mill Machinery, Steam Boilers (Marine, Locomotive and Stationary), Marine Engines (High and Low Pressure). All kinds of light and heavy Castings at lowest prices. Cams and Tappets, with chilled faces, guaranteed 40 per cent. more durable than ordinary iron.

Directors:

Wm. Alvord, O. J. Brenham, C. E. McLane,
Wm. Norris, Wm. H. Taylor, Lloyd Tovis,
James D. Walker.

WM. H. TAYLOR.....President.
O. E. McLANE.....Vice President.
JOSEPH MOORE.....Suporintendent.
LEWIS R. MEAD.....Secretary.

24v17-oy

For Steam Pipes & Boilers **Hair Felting**

SAVES 25 PER CENT. OF FUEL—An item worth looking after. Also, Steam Governors, Tube Scrapers, Steam Pumps, Self-Oilers, Cylinder Cups, Belting, Lacing, Hose, Fuse, Packing, etc., including all kinds Miners', Engineers' and Millmen's Supplies, at the Machinery and Supply Depot of TREADWELL & CO.; old stand, Market street, head of Front, San Francisco.

13v24eow

WOOD WORKING MACHINERY

MOLDING, MORTISING, TENONING AND SHAPING MACHINES, BAND SAWS, SCROLL SAWS, **Planing & Matching** MACHINES, ETC.,

For RAILROAD, CAR, and AGRICULTURAL SHOPS, Etc., Etc.

☞ Superior to any in use

J. A. FAY & CO.,
14v24-6m CINCINNATI, OHIO.

English and American **Hardware!**

A Large, Fresh Stock just received. The old friends of the house especially, as well as our later patrons, are invited to send in their orders. We are prepared to fill such satisfactorily and promptly.

TREADWELL & CO.,
3v25-eowhp San Francisco.

IMPORTANT TO MINERS AND MILL MEN.

Silver-Plated Copper Amalgamating Plates, for Saving Gold.

Of all sizes and in any quantity, furnished to order. Full instructions sent for operating.

Particular attention given to plating goods for Builders, Plumbers, etc. Hotel and Restaurant work replated.

SAN FRANCISCO GOLD AND SILVER PLATING WORKS,
655 Mission street, San Francisco.
2v25-3m E. G. DENNISTON, Proprietor.

Betts's Capsule Patents,

To prevent infringements, notice is hereby given, that *Betts's name is on every Capsule he makes for the principal merchants in England and France,*

thus enabling vendor, purchaser, and consumer not only to identify the genuineness of the capsule, but likewise the contents of the vessel to which it is applied.

The LORD CHANCELLOR, in his judgment, said that the capsules are not used merely for the purpose of the ornament, but that they are serviceable in protecting the wine from injury, and insuring its genuineness.

MANUFACTORIES:—1, WHARF-ROAD, CITY-ROAD, LONDON, AND BORDEAUX, FRANCE.

Machinists and Foundries.

ESTABLISHED 1851.

PACIFIC IRON WORKS,

First and Fremont streets,

SAN FRANCISCO

IRA P. RANKIN, A. P. BRAYTON,
GEO. W. FOGG, Superintendent.

Steam Engines and Boilers,

MARINE AND STATIONARY,

IRON AND BRASS CASTINGS

Mining Machinery of Every Description,

And all other classes of work generally done at first-class establishments, manufactured by us at the lowest prices, and of the best quality.

☞ Particular attention paid to Johhing Work and Repairs.

N. B.—Sole Agents for sale of HUNTOON'S CELEBRATED PATENT GOVERNOR.

18v20-3m GODDARD & CO.

FULTON
Foundry and Iron Works.

HINCKLEY & CO.,

MANUFACTURERS OF

STEAM ENGINES,

Quartz, Flour and Saw Mills,

Hayes' Improved Steam Pump, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

N. E. corner of Tehama and Fremont streets, above Howe street, San Francisco. 3-qy

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GEORGE T. PRACY,
MACHINE WORKS,

109 and 111 Mission Street,

SAN FRANCISCO.

These Works have lately been increased, by additional Tools, and we are now able to turn out any kind of work, equal to and cheaper than any establishment in the State; that is to say:—

STEAM ENGINES,

Flour and Saw Mills,

QUARTZ MACHINERY

Printing Presses,

AND MACHINERY MADE OF EVERY DESCRIPTION.

Improved Safety Store Hoists,

Fitted with Cutting's Patent Cams, unequaled for safety, convenience and cheapness. This Hoist can be built for about half the price of any other in use. To be seen at HAWLEY & CO.'S.

ALSO, MANUFACTURER AND SOLE AGENT FOR

Pracy's Celebrated Governor.

TURNING LATHES, Etc., constantly on hand.

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UNION IRON WORKS,

Sacramento.

ROOT, NEILSON & CO.,

MANUFACTURERS OF

STEAM ENGINES, BOILERS,

CROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR

Dunbar's Patent Self-Adjusting Steam Piston

PACKING, for new and old Cylinders.

And all kinds of Mining Machinery.

Front Street, between N and O streets,

SACRAMENTO CITY.

PACIFIC
Rolling Mill Company,

SAN FRANCISCO, CAL.

Established for the Manufacture of

RAILROAD AND OTHER IRON

—AND—

Every Variety of Shafting,

Embracing ALL SIZES of

Steamboat Shafts, Cranks, Piston and Connecting Rods, Car and Locomotive Axles and Frames

—ALSO—

HAMMERED IRON

Of every description and size.

☞ Orders addressed to PACIFIC ROLLING MILL COMPANY Post Office, San Francisco, Cal., will receive prompt attention

☞ The highest price paid for Scrap Iron 9v1d3

ROOT'S PATENT FORCE BLAST ROTARY BLOWER,

MANUFACTURED AT THE

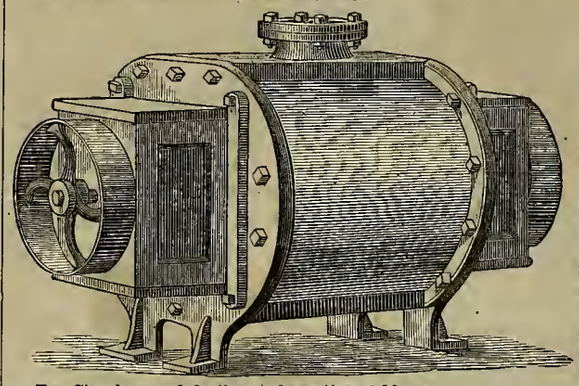
GLOBE IRON WORKS,

Stockton, Cal.

[End Sectional view showing the pistons and gearing.]

Awarded the First Premium at the Paris Exposition.—Patented November 1, 1864; July 24, 1866; and October 9, 1866.

Adapted for Smelting, Foundry, Mining and Steamships. Requires 50 Per Cent. less power than any Blower now in use.



One of these Blowers may he seen at W. T. Garratt & Co.'s Brass Foundry, San Francisco; Gould & Curry and Savage S. M. Co.'s, Nevada; and at C. P. R. R. Co.'s Works, Sacramento; and other places on this coast.

CAUTION.—Purchasers will find it to their advantage to apply direct to the Stockton Agency, as certain parties, not authorized to manufacture the Blower, have put in the market machines of inferior construction, which do not answer all the requirements of the genuine article. Quartz, Saw and Grist Mill, Iron, Stationary and Steamboat Engines, Horse-Power and Pumps, of all Sizes.

For Circulars and further information, Address

4v24tf GLOBE IRON WORKS, STOCKTON, CAL.

CAMERON'S

MINING STEAM PUMPS.

DAVID STODDART,

114 Beale Street, - - - - - - - - - SAN FRANCISCO.

San Francisco Boiler Works, 123 and 125 Beale Street, San Francisco.

F. I. CURRY (late Foreman of the Vulcan Iron Works), Proprietor.

High and Low Pressure

BOILERS

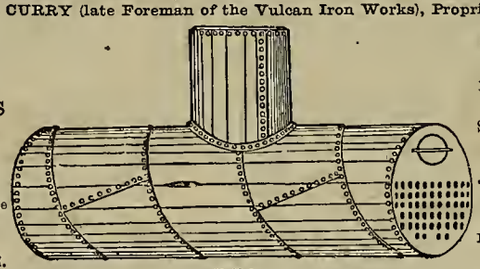
of all descriptions.

SOLE

Manufacturers of the

CELEBRATED

SPIRAL BOILER.



Sheet Iron Work of every DESCRIPTION done at the Shortest Notice.

All kinds of

JOBBING

and

Repairing

Promptly Attended to.

22v22-3m

COPARTNERSHIP NOTICE.

We have this day admitted Mr. William R. Eckart as a member of our firm, the business of which will be hereafter conducted under the firm name of Prescott, Scheidel & Co. PRESCOTT & SCHEIDEL.

Marysville, Jan. 8, 1872.

MARYSVILLE FOUNDRY.

Referring to the above, we respectfully solicit the patronage which has for the past twenty years been enjoyed by our predecessors, pledging our best attention to the wants of all who may so favor us.

Quartz and Amalgamating Machinery,

SAW AND GRIST MILLS,

STEAM ENGINES,

HYDRAULIC MACHINES,

HOUSE FRONTS, ETC.

Repairs upon all kinds of machinery promptly made and at moderate charges. Having unrivalled facilities, we are prepared to make to order, at short notice, everything required in our line.

Specimens of our work may be seen in all the mining regions on this coast.

5v24-3m PRESCOTT, SCHEIDEL & CO.

CALIFORNIA BRASS FOUNDRY,

No. 125 First street, opposite Minna,

SAN FRANCISCO.

ALL KINDS of Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch

☞ PRICES MODERATE. ☜

J. H. WEED. V. KINGWELL.

OSCAR LEWIS. S. S. MORRILL.

CITY IRON WORKS,

28 Fremont street.....SAN FRANCISCO.

LEWIS & MORRILL,

Manufacturers of all kinds of Architectural and Ornamental Iron Work,

LAUNDRY MACHINERY, STEAM ENGINES, ETC.

Agricultural Work and all kinds of Blacksmithing and Jobbing done with promptness and at reasonable prices. Orders from the country promptly executed.

24v24-3m

SAN FRANCISCO

SCREW BOLT WORKS,

PHELPS BROTHERS, Proprietors,

MANUFACTURERS OF ALL KINDS OF

Machine Bolts, Bridge Bolts, and Ship or Band Bolts.

13 and 15 Drumm Street, San Francisco. 4v24ly

OCCIDENTAL FOUNDRY,

137 and 139 First st., near the Gas Works, San Francisco.

STEIGER & BOLAND,

IRON FOUNDERS.

IRON CASTINGS of all descriptions at short notice.

NOTICE.—Particular attention paid to the making of Superior Shoes and Dies. 3v24-3m

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Miners' Foundry and Machine Works,

CO-OPERATIVE,

First Street, bet. Howard and Folsom, SAN FRANCISCO.

Machinery and Castings of all kinds.

THOMPSON BROTHERS,
EUREKA FOUNDRY,

129 and 131 Beale street, between Mission and Howard, San Francisco.

LIGHT AND HEAVY CASTINGS,

of every description, manufactured 24v16qr

Machinery.

Hydraulic Miners, Attention!

LITTLE GIANT.

If you wish to keep up with the times, buy a LITTLE GIANT or a DICTATOR. These are fully protected by Letters Patent, and infringe on no others.

Manufactured of any size to suit. Are in use under all pressures, from 445 feet down.

WILL DISCHARGE FULLY TEN PER CENT. MORE WATER than any other, under the same circumstances.

An injunction from the U. S. District Court is now in force against HYDRAULIC CHIEF, and parties using the same will be duly prosecuted.

I fully guarantee my customers against all damages for alleged infringement.

Send for Particulars and Testimonials

To WILLIAMSON & CORY, Marysville; J. H. NASH, Placerville; F. SMITH, at Locke & Montague's (San Francisco Agents); or to

R. HOSKIN, Dutch Flat, Cal.,

Sole Licensee and Manufacturer, under Allenwood's, Masey's, Rice's, Craig's, and Hoskin's Patents.

16v24tf

Varney's Patent Amalgamator.

These Machines Stand Unrivaled.

For rapidity pulverizing and amalgamating ores, they have no equal. No effort has been, or will be spared, to have them constructed in the most perfect manner and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

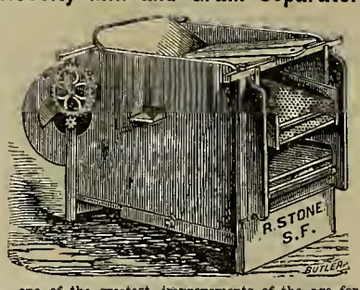
This Amalgamator Operates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the apperture and between the grinding surfaces.—Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Setlers made on the same principle excel all others They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill-men are invited to examine these pans and setlers for themselves, at the office, 229 Fremont Street, San Francisco.

THE PATENT
Novelty Mill and Grain Separator



one of the greatest improvements of the age for cleaning and separating Grain, while it combines all the essential qualities of a first-class Fanning Mill. It also far excels anything that has been invented for the separation of Grain. It has been thoroughly tested on all the different kinds of mixed Grain. It takes out Mustard, Grass Seeds, Barley and Oats, and makes two distioct qualities of wheat if desired.

For further information apply to

R. STONE,

26v3 422 Battery street, San Francisco.

A Blake's Crusher

FOR SALE CHEAP.

One of Blake's Patent Ore Crushers, size 8x10, second-hand and in perfect order, is offered for sale cheap. Also,

A STEAM ENGINE,

8x16, and another 6x12, second-hand and in good order. Also,

A New Mining Pump,

6-inch bore and 5-feet stroke, double acting.

All of the above will be sold at good bargains by

J. HENDY,

21v24tf No. 32 Fremont street, San Francisco.

The Hesse Grinder and Amalgamator.

BEST IN USE!

Especially well adapted for the Reduction of Sulphuret Ores.

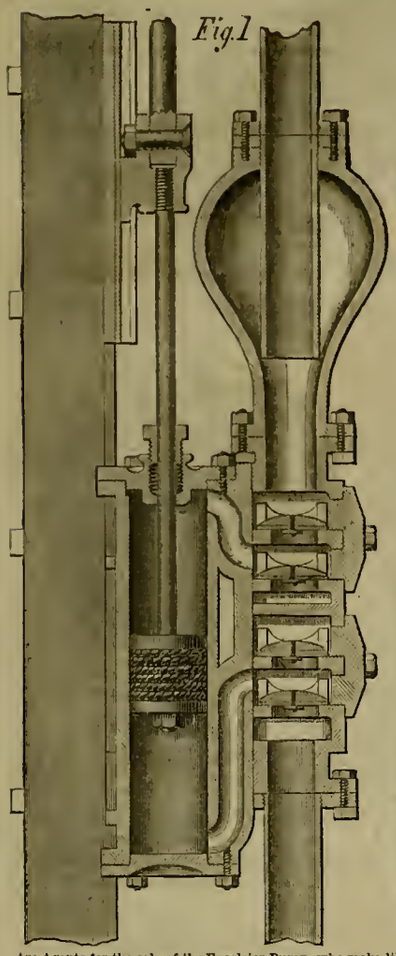
LORD & PETERS, Agents,

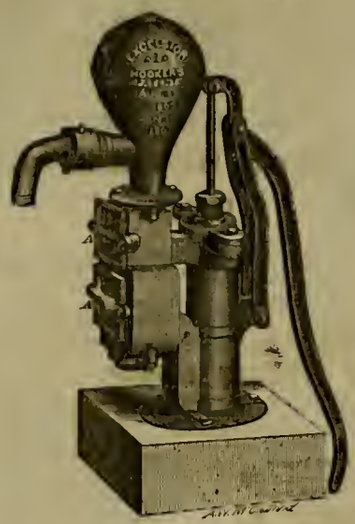
304 Battery street, San Francisco, Cal.

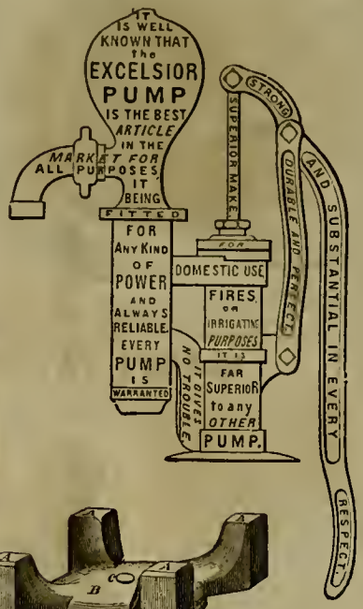
☞ Send for Circular. 13v24-3m

EXCELSIOR IMPROVED DOUBLE-ACTING SUCTION AND FORCE PUMP.

HOOKER'S PATENT, August 13, 1863, and January 15, 1867.






IT IS WELL KNOWN THAT the EXCELSIOR PUMP IS THE BEST ARTICLE IN THE MARKET FOR ALL PURPOSES IT BEING FITTED FOR ANY KIND OF POWER AND ALWAYS RELIABLE EVERY PUMP IS WARRANTED
STRONG DURABLE AND FREE SUPERIOR MAKE FOR DOMESTIC USE FIRES OR IRRIGATING PURPOSES IT IS FAR SUPERIOR to any OTHER PUMP. NO TROUBLE
AND SUBSTANTIAL IN EVERY RESPECT

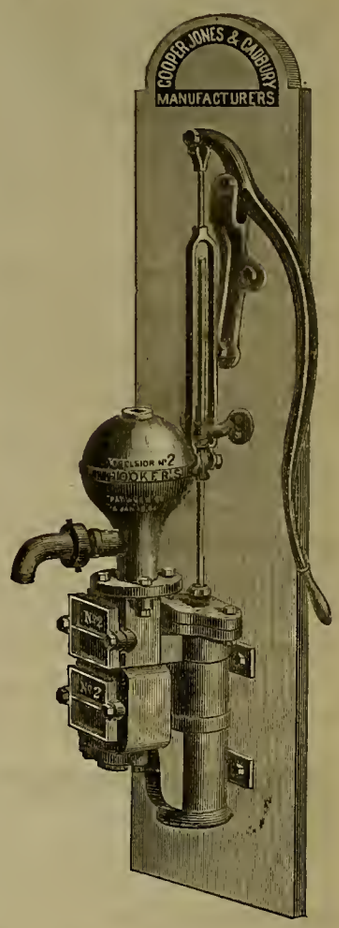
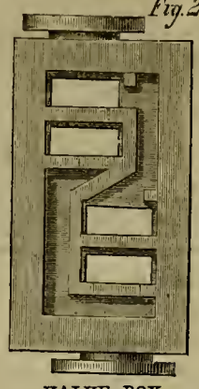


Fig.2



VALVE BOX.

VALVE.

We call the especial attention of all Millwrights, Miners and Farmers to this very superior Force Pump. It is more simply constructed, more durable, and has larger and more direct ports for receiving and discharging water, and warranted to furnish more water than any other pumps of equal caliber. It has Poppet Valves, which cannot be wrongly placed in the Pump. The Fair of the Mechanics' Inititute, held in the city of San Francisco, awarded the owners of this Pump FOR ITS SUPERIORITY, A FIRST PREMIUM AND SILVER MEDAL. Snitable for DEEP WELLS, Factories, Mining, Breweries, Sugar Refineries, Tanneries, Railroad Purposes, Drainage, Irrigation, etc. As the above Pumps are already in use in the principal Sugar Refineries, Factories, Rolling Mills and Gardens in this city, reference may be had where they are working. ☞ See Circular for particulars.

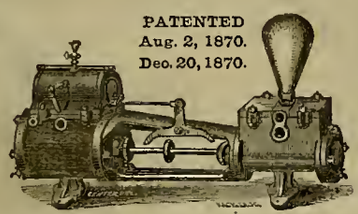
GENERAL AGENTS:

Messrs. BRITTAN, HOLBROOK & CO.,

111 and 113 California street, and 17 and 19 Davis street, S. F.,

Are Agents for the sale of the Excelsior Pump, who make liberal discount to the trade. H. J. BOOTH & CO., Union Iron Works, First street, corner of Mission, S. F., manufacture and have the sale of the Excelsior Pump.

THE SELDEN PUMP.



Combines Simplicity and Durability to a Remarkable Degree.

Its parts are easy of access, and it is adapted to all purposes for which Pumps are used—especially Mining.

Full description in *Scientific Press* of August, 1871.

Catalogues sent on application.

A. CARR,
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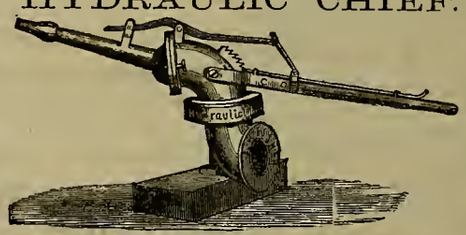

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HYDRAULIC MINERS, TAKE NOTICE—I hereby caution Miners and Manufacturers against making, buying, selling or using a Hydraulic Machine or Joint known as the Little Giant, manufactured and sold by R. R. & J. Craig and Richard Hoskin, as the same is an infringement upon the invention of the machine known as FISHER'S HYDRAULIC CHIEF, secured by Letters Patent, No. 110,222, dated Dec. 20, 1870. All parties participating in such infringements will be rigorously prosecuted. Nevada, Jan. 13th. F. H. FISHER.

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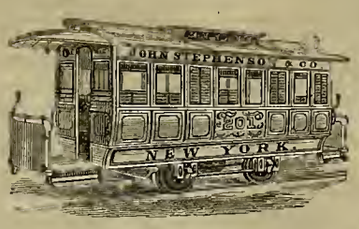

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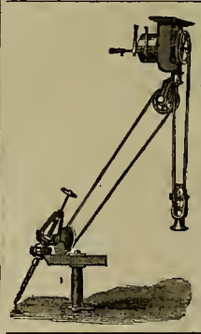

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2v25-3m

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24v24-tf

Notice is hereby given, that the copartnership heretofore existing between A. J. Severance, Charles W. Randall and J. Gus. Burt, under the firm name of "Severance, Holt & Co.," is this day dissolved by mutual consent. A. J. Severance, having purchased all the interest of his late partners, will continue the business of manufacturing and selling Diamond Drills, as before, under the style of A. J. Severance & Co.

Dated San Francisco, Nov. 24, 1871.
Office, 315 California street. A. J. SEVERANCE,
CHAS. H. RANDALL.
22-v23-tf J. GUS. BURT.

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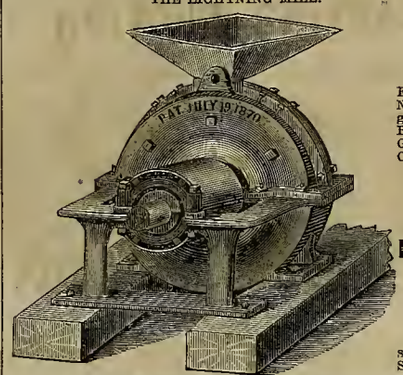

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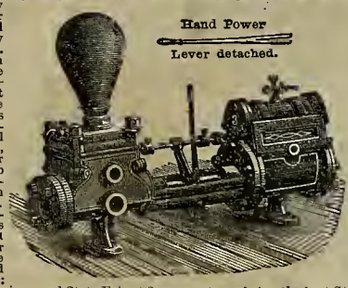
These Pumps have been tested, and found to be indisputably without an equal wherever tried. They have been sold in the Pacific States now for upwards of 4 years, and we are willing every one in use may be referred to; every Pump will speak for itself. They are constructed in the most simple style, and built in the most thorough manner—especially calculated for simplicity, durability and power. Some of the advantages of the Blake Pump may be summed up as follows: It is positive under any pressure. May be run slow or fast, as may be desired. Will discharge more water than any others of the same dimensions. Has no leaky joints, the steam part being cast in one entire piece. The steam valve is perfectly balanced, is cushioned at each end, and slides with the greatest facility, having no cams nor complex Rotary Arrangements to get out of order. Will start at any point of the stroke, and will discharge all the water of condensation. The Pump has no crank or fly-wheel, thereby saving a considerable item of expense to the purchaser. Having no dead points, it therefore needs no watching, and is consequently ready to start without using a starting bar or any hand-work whatever. The Blake Pump is extensively used on Railroads and Steamboats; in Hotels; for Mining and Fire purposes; in Breweries, Tanneries, Sugar Houses, Factories, Mills, Laundries, and as Boiler Feeders, wherever steam is employed. In fact, wherever water or other liquids are desired to be raised in large or small quantities, or against heavy or light pressure, it is the cheapest and best Pump that can be used. It is offered to the public as the most perfect independent steam Pump ever invented. Forty different sizes are made, capable of throwing from 1,000 to 200,000 gallons an hour, and adapted to any class of work that may be required. Every Pump will be warranted to perform the work required of it by the purchaser, or it may be returned, and the money will be cheerfully refunded. The Blake Pump was awarded a Silver Medal at the Exhibition of Mechanics' Institute, San Francisco, and State Fair at Sacramento, as being the best Steam Pump on Exhibition. The agents have recently imported several of the largest-sized Mining Pumps for water works and deep mines, and will be pleased to refer parties to them; we claim for it, that it is the most simple and durable, and consequently the best Steam Pump ever built. For sale by TREADWELL & CO., Machinery Depot, old stand, Market, head of Front Street, San Francisco, who will be pleased to send circulars to any address, or show its advantages to parties calling on them.



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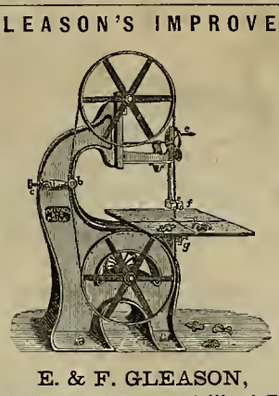

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Manufacturers of Improved Wood Tools,
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24v24-eow6m

C. P. R. R.

COMMENCING
Monday, April 29th, 1872.
And until further notice, Trains and Boats will
LEAVE SAN FRANCISCO.

7.00 A.M. Overland Express Train for Sacramento, Marysville, Red Bluff, Colfax, Reno, Ogden and Omaha.

3.00 P.M. San Jose Passenger Train, stopping at all way Stations.

4.00 P.M.* Passenger Train for Stockton, Merced and Sacramento.

6.30 P.M. Overland Emigrant Train, Through Freight and Accommodation.

7.30 A.M. Steamer New World (from Broadway Wharf) —Connecting at Vallejo with Trains of California Pacific Railroad.

4.00 P.M.* Sacramento Steamer (from Broadway Wharf). Connecting at Vallejo with trains of California Pacific Railroad.

2.00 P.M.* Steamer Antelope, from Broadway Wharf, connecting at Donahue with Trains of S. F. and North Pacific Railroad.

8.00 A.M. Excursion Boat (Sundays only) from Broadway Wharf, connecting with Special Train of S. F. & N. P. R. R. for Cloverdale and intermediate points, returning to San Francisco by 7 P.M.

OAKLAND BRANCH.—LEAVE SAN FRANCISCO, 7 00 8 10, 9 20, 10 10 and 11 20 a.m., 12 10, 1 50, 3 00, 4 00, 5 15, 6 30, 8 06 9.20 and *11 30 p.m. (9 20, 11 20 and 3 00 to Oakland only).
LEAVE BROOKLYN, *5 30, 6 40, 7 50, 9 00 and 11 00 a.m., 1 30, 2 40, 4 55, 6 10, 7.40 and 10 10 p.m.
LEAVE OAKLAND, *5 40, 6 50, 8 00, 9 10, 10 00, and 11 10 a.m., 12 00, 1 40, 2 50, 3 50, 5 05, 6 20, 7.50 and 10 20 p.m.

ALAMEDA BRANCH.—LEAVE SAN FRANCISCO, 7 20, 9 00, and 11 15 a.m., 1 30, 4 00, 5 30, and 7 00 p.m. (7 20, 11 15, and 5 30 to Fruit Vale only).
LEAVE HAYWARDS, *4 30, 7 00 and 10 45 a.m., and 3 30 p.m.
LEAVE FRUIT VALE, *5 25, 7 35, 9 00 and 11 20 a.m., 1 30, 05 and 5 30 p.m. *Except Sundays.

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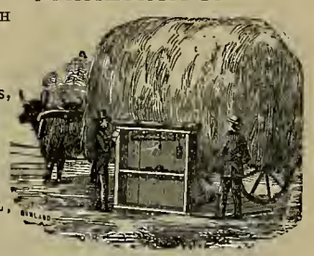

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For the half year ending with 30th June, 1872, a dividend has been declared at the rate of nine and six-tenths (9 6-10) per cent. per annum on Term Deposits, and eight (8) per cent. per annum on Ordinary Deposits, free of Federal Tax on deposits, payable on and after 10th July, 1872. By order.
jy13-1m LOVELL WHITE, Cashier,

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MINING AND SCIENTIFIC PRESS.

An Illustrated Journal of Mining, Popular Science and Progressive Industry.

BY DEWEY & CO., Patent Solicitors.

SAN FRANCISCO, SATURDAY, AUGUST 3, 1872.

VOLUME XXV. Number 5.

The Goodwin Pump.

We herewith present our readers with an engraving of the Goodwin pump, now on exhibition at the Miners' Foundry, No. 235 First street, in this city.

This pump is another evidence of the tendency of modern mechanics to substitute rotary, for rectilineal, and continuous for intermitting movemente.

The reciprocating cyliudrical pump is one of the most perfect machines of its class, but the inertia of the water must he overcome at every stroke. In double-acting pumps and those supplied with air-chambers this defect is remedied to a certain extent, hut the original difficulty still exists. No reciprocating pump or ordinary combinations of them will throw a *perfectly* uniform stream. However a very high degree of uniformity is not necessary, except for fire-engiues, hydraulic miniug, and kindred uses.

Ewbank one of the highest hydraulic authorities forty years ago, spoke of the rotary pumps as heing perfect in theory, and the difficulties in their way as heing mechauical. These heing overcome, the rotary pump is as perfect in practice as in theory.

The lathe, planer, shaping machine and other appliances of modern machine shops render practicable the constrnction of machines which would he impossible without them. The Goodwin Pump is an illustration, as without the improved manufacturiug tools of the present day, it could not he rendered practical.

Thie pump, which operates hoth hy suction and forcing, is composed of an outer and inner cylinder with a circular space hetween them, which is the pump chamber. Iir the engraving the outer immovable cylinder is marked *A*. The inner and movahle one is not seen, heing covered hy the adjusting ring *I*; this cylinder is supported hy the friction rollers *K, K*, which revolve on the eccentric *H*, which is secured to the shaft *G*, hy a regulatiug gib-nut shown in the cut. Any wear on the periphery is taken up hy the gih and if the ends hecome loose they can he tightened hy the adjusting ring, *I*. By means of the rollers, *K. K.*, nearly all of the friction is rendered rolling instead of sliding. In a trial they were clamped so as to prevent their rolling, aud the power required to run this pump was nearly if not quite doubled. The ahutment, *M*, is used only to close one end of the pump chamher aud no water ever passes through it. By means of rollers not showu in the cut, it is fastened to the revolving cylinder, consequently there is no jar or concussion in ite movements, neither ean it he ohstructed in its operations like a valve hy chips or gravel. The engraving represents a single acting pump provided with an air chamher which is unnecessary in a double-acting one which throw a perfectly uniform stream.

Owing to the strength and durahility of its materials (being entirely iron) and having no reciprocating motion except in the ahutment, this pump can he run safely at a very high degree of speed. Two hundred and fifty revolutions per minute can he given to one twenty inches in diameter, and a model of three inches has been run 3,200 per minute. As this pump has no valve to choke, it is unsurpassed for a ship pump, and water containing corn or graiu can he pumped with perfect facility.

It ie aleo adapted to deep miues where a large amount of water is raised to a great hight, the high degree of speed at which it is run admits the use of much smaller pipes than elower moving pumps. It is one of the hest pumps to attach to a wiudmill, as a variation in speed does not affect its efficiency, and is just as safe in a gale of wind as in a gentle breeze. For hydraulic miuing aud firo engines it is peculiarly adapted, as it throws a perfectly uuiform stream, and can he made of sizes to throw from five to six hundred inches, miners' measure per minute. The one at the Miners' Foundry has a capacity of 1,200 inches per minute.

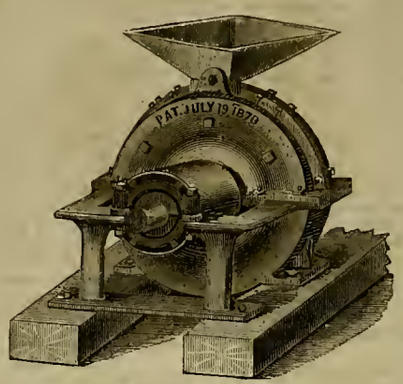
For further particulars enquire of S. A. West of the firm of Goodwin & West, at the Miners' Foundry, where these pumps are manufactured.

REDUCTION WORKS. Promineut capitalists of Denver and Georgetown and an experienced mining engineer of Nevada are ahout to erect extensive reduction works in Clear Creek county, Colorado. The Denver *Tribune* says that ores that contain less than an average of $100 per ton in silver ore are valueless there, hecause they will not pay to ship; hut the establishment of these works will render thousands of tons of this class of ores available.

COAL has heen found in the Coast Range, eixty miles weet of Visalia. The croppings are said to he seventy-five to 100 feet in length, hy ahout ten feet in width. Specimens of copper ore and cinnahar were also hrought from the same regiou.

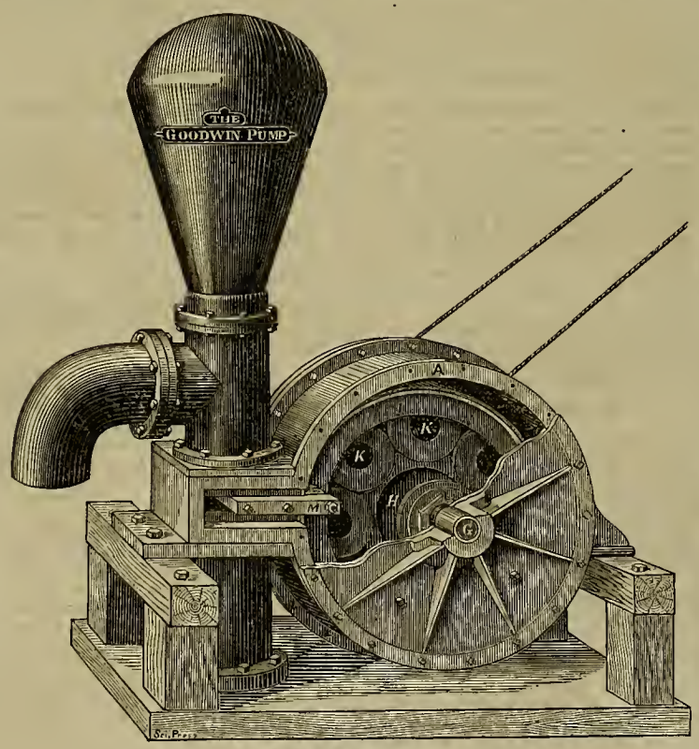
The Lightning Mill.

The accompanyiug cut represents a crusher which is made hy Messrs. Walker Bros. & Co., of Philadelphia. The general appearance of the mill reminds one of an ordinary fan hlower with the hopper attached. It is no new experiment, for mills made hy these parties have heen running for some eighteen months, and are said to have given general satisfaction.



THE LIGHTNING MILL.

It consists of an outside frame, or case, with an inside lining, ahout an inch from the outside. This inside case is made of chilled iron, and when in the course of time it hecomes worn it can he easily replaced. The pulverizing part of the mill consists of a spider made of heavy wrought iron, on which are fastened heaters or paddles, which as they get worn off can he reversed and then turned so as to expose the other side, and again reversed, thus giving four wearing surfaces, and when condemned as totally worn out can he replaced in from ten to fifteen minutes.



THE GOODWIN PUMP.

The guaranteed capacity of these mills is from five to fifteen tone of quartz in ten hours, although during a short run of twenty hours, hnt recently, one of them run off the whole twenty tons at an average of one ton in forty-five minutss, fine enough to pass through a number eighty holt. Any one having any knowledge of the refractory nature of Lake Superior iron ore would perhaps have a hetter idea of the efficiency of the mill when we state that they grind ten tons of this fine euough to pass through an eighty holt, in ten hours.

Agaiu, they have pulverized fifty tons phosphate, or Charleston rock, in ten hours. They have a mill in Philadelphia now rnnning and pulverizing horn and hoof at the rate of teu tons in ten hours, thus making an invaluable manure, which is in great demand in England, and the supply is not equal to the demand.

These are instances of what the mills have done aud are doiug, and not merely a trial performance; but the details of which the manufacturers will he happy to furnish to any one interested in such matters.

As it is a well-known fact that to drive a 30-inch fan requires an expenditure of six-horse power, it would he ahsurd for anyone to make the assertion that this or any other mill working on the same principle can he run with little power, although, considering the amount of work done for the money, and power required, there would seem to he no mill so economical. However, the huilders recommend 15-horse power to run their mill, although considerahle of the work specified was done with a 10-horse engine.

They ground 98 tons of green hone, just as it came from the market, without steaming, dryiug, or any other preparation, with one set of heaters, at a cost of only 3¼ cts. per ton. The weight is another advantage in its favor, over stamp mills and other hcavy machincry, as this weighs only 2,000 lbs., and can he so taken apart that the heaviest piece only weighs 800, thus rendering it easily transported to places in the monntains almost inaccessihle to heavy machinery. The price is such that it commeuds itself to those small miners who have not means to huy expensive tools to develop their mines. The present price at the works is only $500, although the proprietors think, from the demand, they will he justified in advancing it. They have mills running on gold quartz in Virginia, also in North Carolina, and are now huilding a mill to go to Chili, and are desirous of making arrangements with some capahle and responsible person engaged in milling or huilding machinery in California to assist them in introducing it. Parties desirous of fnrther informatton in regard to it are requested to communicate with the inventors as per advertisement in another column.

STATE UNIVERSITY.—At an adjourned meeting of the Board of Regents of the University, held on Tuesday last, Prof. D. C. Gilman, of Yale College, and Pres. of the Shefficld Scientific School, was elected to the Presidency of the State University. We cougratulate the people of California on this election.

Although five hlauk votes were cast hy voters who preferred some one who might already be a citizen of our State, we have heard the positive assertion that three of the five assert they will give the president elect their hearty support, as no douht will the two others unheard from—judging from their natural geniality and good sense. The ahle and worthy memher of the Board, who had been urged as a candidate hy his friends declined with the positive assertion that he had not sought an election. We helieve the result is a fortunate one for the University, and the actiou of the Regents in this instance will he glorified with grand results that will certify to their wisdom generations to come. Prof G. will find a rich field and a fine opportunity for his nohle lahors in the highly important position to which he hae heen elected. With fair management, our Univereity has a hright future, liherally supported ae it may he hy the most intelligent aud progressive community in the Uniou.

CORRESPONDENCE.

Notes of Travel in White Pine Co., Nev.

[By our Traveling Correspondent.]

Hamilton,

The county seat of this County, contains ahout 900 inhahitants, and is locatsd 120 miles a little east of south, of Palisade on the C. P. R. R. the point at whioh the traveler leaves the railroad to take Woodrnff & Ennor's stages to this place. The total distance from San Francisco is 693 miles, and the cost of fare $63; the time occupied in transit is 55 hours. The town of Hamilton is situated at an elevation of 8,108 fest ahove sea level, and at this season of the year, has the most delightful climate on this coast; thnnder, lightning and copious showers of rain are not unfrequent here at this season of the year, three showers having occurred during my short stay of ten days. The interesting phenomena of a hnrsting rain-cloud is also a common occnrrence, in this part of Nevada.

The White Pine Mining District,

Is in the eastern portion, and not far from midway hetween the northern and southern houndaries of the State; Treasure Peak, ahout which the principal mining operations have thus far heen in progress, heing in latitude 39° 14′ North, and, longitude 115° 27′ west from Greenwich.

The White Pine Mining District includes an area of twelve miles sqnare, having Treasure Hill, ahout which the most important mines are clustered, as a central point. This hill is an isolated ridge, ahout three or fonr miles long, measuring from the extremities of the hase, and from a half to two and a half miles wide. Its longer axis is nearly north and south, parallel to the general trend of the White Pine or Pogonip mountain, from which it is separated hy a narrow valley, and intermediate but lower parallel ridge, on the northwestern side, known as the Base Metal Range.

Treasure Hill

Lies east of White Pine mountain, aud its eastern slope descends steeply, and, in some places precipitously to Applegarth Cañon, which ssparates the hill from the next eastern range, known as the Moke-Moke Hills. The north and sonth slopes of the hill are gentler than the eastern and western. The town of Hamilton lies near the foot of the north slope, and on the southern and sothwestern slopes are the towns of Eberhardt and Sherman. The Standford mill and the International mill, the former belonging to the South Aurora S. M. Co., (limited) and the latter to the Eberhardt and Aurora M. Co., (limited) are situated at Eherhardt City.

The highest point of Treasure Hill, known as Telegraph Peak, is 9,228 feet ahove ssa level. The peak of White Pine Monntain is 10,792 feet above sea level.

The ore of Treasure Hill occurs in chambers, or pockets of variable forms and dimensions, and the distrihution of these deposits over the area of the hill and in the various limestone strata, althongh, perhaps, hetter understood than at first, is very irregular and in accordance with no clearly defined law.

The First Discovery

Of silver bearing lodes in this district was made in the autumn of 1865, on the wsst side of White Pine Mountain, and two ysars elapsed hefore the more important ore hodies of Treasure Hill were brought to notice. The Eberhardt mine was located in January, 1868. The fame of the discoveries made there attracted thonsands of people, and in the summer of the same year prospecting and mining was vigorously carried on. The ores found on the surface and first worked, contained some very rich lots. One lot of twenty-two tons, from the Eherhardt, producing $96,000.

Mr. Hague, in his report, estimates the total production of the district to the first of July, 1871, at $5,300,000, coin valne, to which may he added the production of hullion to the first of July, 1872, not less than $1,800,000, making a total $7,100,000.

Sometime in the fall of 1867 an Indian took a specimen of ore to the Newark mill (twenty-eight miles N. W. of Hamilton) and showed it to the hlacksmith "Lsathers," who accompanied the Indian to Treasnre Hill and located the first mine thereon, known as the Original Hidsn Treasnre. The nsual excitement followed the discovery, and a husy mining camp was established hers in 1868. Towns were located and incorporated as well as thousands of mines to the great advantage of the then Recorder. Treasure City is ahout two and one-half miles from Hamilton.

From the highest point known as Treasure Peak the City of Hamilton liss 1,120 fest helow; the City of Eherhardt lies1 ,920 feet helow, and that of Shermantown 1,780 hslow, and Trsasure City is locatated near the Summit.

Ths distance from Shermantown to Hamilton is ahout four and one-half miles and to Treasure City hy road two and one-half miles. The distance from Eherhardt to Hamilton is ahout five and one-half miles hy road, and by road five miles up to Treasure City.

Ths limestone of Treasure Hill in which the ore deposits are formed is of the upper silurian period. The character of the silver ore found is chloride of silver, horn silver, manganese, lsad, iron, copper, and other base metals are occasionally found mixed with it.

The Mines.

Ascending the hill from Hamilton we pass numerous mines, the hetter known bsing the Mammoth, East Shehoygan and the Virginia, Original Hidden Treasnre, South Hidden Treasure, Bnllion, Sierra Nevada, Ward Beecher Consolidated and the Ward Beecher, Idaho, East and West, North Aurora, and Iceberg. The latter six helonging to the Eherhardt and Aurora mining Co.

To the east of these lie the Golden and Mount Vernon. The South Aurora adjoins the North Aurora mine, to the west of which is the Chloride Flat and Genesee, helonging to the S. A. M. Co., and a number of mines in the Chloride, Bromide and Pogonip Flats, helonging to varions parties; 450 feet helow lies the Eherhardt, East and west, and a host of locations extending down Mahogany cañon to the south.

The most extensively developed mines are those belonging to the

Eberhardt and Aurora Mining Company

Of London. There are 3 shafts on the Ward Beecher mine, 2 in the North Aurora, and 2 in the Eherhardt. The deepest workings on the Ward Beecher are 129 feet from the surface; those on the North Aurora 150 feet, and on the Eherhardt 184 feet. The only hoisting engine on the hill is placed so as to hoist from the Ward Beecher, and the north end of the North Anrora mines.

The largest and finest hody of ore yet developed on the hill is fonnd at the sonth end of the North Aurora mine. Two large chambers known as the Ridsdale and the De Pass, are now heing worked. The ore is dropped down a shaft which communicates with a tunnel at a depth of 60 feet, which runs south through the S. A. Co.'s ground. The ore heing run out through this tunnel is shipped hy teams or tramway to the company's mill at Eberhardt City.

The chief foreman in charge of the company's mines is Mr. Joseph Potts, a practical miner of great experience, good judgment and indomitable energy. A

Wire-Way, Hodgson's Patent,

(Or tramway) is laid down so as to connect the company's mines with the mill. The length ahont 2¼ miles, douhle line of rope made of steel ⅞ of an inch in diameter. The course of this wire-way from Treasure Hill to Eherhardt is down the Mahogany Cañon, over a very steep, precipitous rocky ground.

The rope passes over pnlleys snpported on some 50 supports, the highest of these hsing 130 feet from the level of the ground. The rope is driven by an engine at the mill. The ore is put into wooden boxes, which contain about 200 lbs. each; these are attached to a saddle which rides the rope hy iron hangers, and in reaching the terminus at the mill are unloaded, and the empty boxes passed on the other side of the rope, and re-ascend to the mines.

This wire-way travels at about 3 miles an hour, and can empty easily about 10 tons per hour.

The International Mill,

Belonging to this company is of 60 stamps, and was huilt hy Booth & Co, of San Francisco in 1870. It has bsen already described in the MINING AND SCIENTIFIC PRESS. It is located at Eherhardt City, and kept steadily running on this company's ore.

The following is a complete list of

Men Employed,

Together with the positions they fill in the Ward Beecher and North Aurora mines.

Jos. Potts, Mining Supt.	1
Foremen in mine	8
Foremen on surface	2
Time keeper (and clerk)	1
Blacksmiths	3
Helpers in shop	8
Engineers	2
Carpenters	2
Assorters	12
Top hands—(surface)	22
Oar men	8
Wheelers and shovelers—(underground)	18
Bucket landers	2
Miners	58
Total	137

They employ forty-two additional msn, at their mill in which the dry crushing proccess has been adopted.

Ths crushing capacity is ahout eighty tons per day. Mill forsman, Mr. J. R. Williams, a first-class mechanic and a man of considsrahle experience on this Coast. The

Scarcity of Water

In this district is seriously felt, especially during the summer months. The only constant and reliahle source of water supply is found in a deep cañon running in an easterly direction from the Moke-Moke ridge, and about three miles from Hamilton. This fact induced a company to construct very extensive works here with a view of supplying the various cities and mills in this new mining district.

With the object of securing a ready and constant supply of water, the Eherhardt & Aurora Mining Co. very wisely seized the opportunity offered, of purchasing the

White Pine Water Works,

And thus readily command the supply of water to the district. The Superintendent of these works is Mr. Robert Robinson, a gentleman well known for his practical ahility and experience. He has until lately been Superintendent of the Stanford mill, and at present superintends the amalgamation process at the International mill. The White Pine water works snpply the cities of Hamilton, Treasure and Eherhardt and most of the mills in the district.

A Galvanic and Electric Quicksilver and Amalgam Saving Apparatus

Is now practically at work at the Eherhardt & Aurora mill, working one-third of the tailings and giving good results. It works one agitator, saving fifty pounds of quicksilver monthly independent of the amalgam, this is after passing all the other processes of milling. (A patent for this is now heing applied for through yonr agency hy J. Potts, the inventor, Treasure City, Nev.) The mines of Treasure Hill in my next.

L. P. MC.

[To be Continued.]

Giant Powder in Bank Blasting.

EDS. PRESS:— In yonr issue of the 5th inst. appears an article on hank hlasting, with nitro-glycerine powder, in which yonr correspondent, "Blne Gravel," makes so many misstatements calculated to deceive the mining pnhlic, that I heg leave to reply, giving the true facts concerning the experiments made with Giant and Hercnles powder at Dutch Flat. "Blue Gravel" says:

"The Giant No. 2 was fired in a hody of ground in the deep shaft claim known as the Island. This body of gronnd was about 200 feet sqnare, with a face of 85 fest high, and an average depth of something over 90 feet. It was well relieved on two sides, and partially relieved on the other two, by heing washed down, as is nsual in hydraulic mining.

"Ahout the center of this Island a drift was run in to 58 feet from the front, and a cross-drift rnn on one side 28 feet, and on the other 40 feet. At the ends of this cross-drift, or T, 2,100 pounds of the powder was placed; the halance, 400 pounds, heing placed in a body of hard cement, extending in front from the main hank about 40 feet, and 18 feet deep, into which three small chamhers were run for deposits for the powder. These separate charges were all fired simnltaneously hy electricity."

The real facts of the case are as follows: The shot was in Deep Shaft claim (the title of "The Island" is unknown to the residents of Dutch Flat, and consequently mnch has originated in the visionary hrain of "Blue Gravel.") Face of hank 94 feet high, hank over powder line 100 feet. By the explosion 235 by 225 feet of gronnd were broken. The shot was hadly bonnd, on *all sides*. The hody of hard hlue cement in front of main bank was 60 feet in length and 30 feet deep. The main face of hank, a semi-circle. Of the result "B. G." relieves himself as follows:

"The small bank of hard cement in front was thoroughly pulverized and rendered in good condition for washing. The large hank had numerous cracks through the surfacs, immediatsly over the powder, and sxtsnding for some distancs hack—and some of them reaching nearly or quite across the hank, hut nons of the hank thrown down, as is nsnal with blasts of the common blasting powder.

"This hlast was exploded on the 22d of May, and washing commenced ahout two days after that date. The small hank in front washed well.

"Soon after piping was commsnced on ths main hank, a large hols or cavern was discovered in an angle of the face, nearly 40 feet high, and reaching back to an unknown depth. This at first was supposed to hs the effects of one of the large deposits of Giant Powder; but on contInning washing for two wssks, it was discovered that the cavern had no connsction with that hlast, but was the result of a hlast of common blasting powdsr, which was fired some three years ago, one chamber of which was not washed out; the water of that season failing hefore it was reached.

"There seems to he a firm wall of cement standing beyond the reach of the black powder hlast; but the men working in the claim feel confident that they will soon get some caves from the Giant blast, and feel very hopeful that the hlast is a good one."

It makes hut little difference whether the cavern was made hy hlack, or Giant Powder, one fact is well known, that is, that 900 inches of water, with 280 feet of pressnre, could not cnt the hank prior to the giant shot, that "wipes out" blue gravel's assertion, that one chamber of a hlack powder hlast had not been washed away on acconnt of water failing. The first cave from the bank, after the giant explosion covered the monitor (100 fest from the hank). After washing on this hlast for fourteen days, the Dutch Flat Water Co. cleaned up more gold than from any other vein ever made in this claim. In proof of the "breaking qualities" of Giant powder, the gold was all found, in the first eight or ten hoxes, while when black powder was used the hank came down in lumps, and the gold was found at the lower end of the flume, and we douht much was lost hy going over the dnmps in chunks of cement. Messrs. Bradley and Gardner, owners, and Roht. Clifford, Supt. of this claim will attest to the above, bring the true facts and also to the success of this experimental hlast; the hest proof of which, is, that the California Powder Co. owning immense hlack powder mills at Santa Cruz (worth at least $500,000) and also the Hercules powder works (since blown up) on the the ocean road followed in my wake and fired an experimental shot of Hercules powder in the Badger claim, thus aiding me in my endeavors to prove that nitro glycerine powders would hreak hanks of cement and gravel. As an experimental shot it too was a success, though I am again compelled to contradict "Blue Gravel" who thus commented on the Hercules shot:

The Hercules Powder Blast

"Was exploded on the 9th inst., also by electricity, in the Badger claim, in a bank similar in many respects to that in which the Giant was used, both banks heing of well cemented gravel, and free from layers of sand. The bank was something over 200 feet square, of irregular shape, with an average depth of 77 feet. The face was of the shape of the inner or concave front of a horse-shoe, and about 65 feet high. It also had one side partially relieved by a washed out ravine."

In this he would have the miners infer the Hercules powder had the most work to do, while it was just the contrary. No hetter place could have been found for a shot than the Badger claim. The face was 60½ feet high, the bank over the powder line 77 feet, the face well up, the top overhanging the bottom. The bank is compact red cement, while the Deep Shaft claim has a hlue cement bottom, over-capped with an immense layer of boulders (some weighing five tons and so numerous are they that whole days are spent in blasting them.) Over the houlders is a red cement and gravel—in trnth the only similiarity in the claims is that they are both hanks. Mr. Gifford, Supt. of Deep Shaft claim, says he saved $200 in putting down flume hoxes alone since the Giant powder shot, and it is to the iuterest of every gravel and cement miner to consider on, and try explosives that work up the hottom as well as the top of his bank. The extra money paid for powder is more than saved in time and water, if not in the extra gold alone ohtained, by having cement and gravel thoroughly pulverizsd.

As for "B. G.'s" comments on its (Giants)

costing fifty cents a ponnd, I can only say, that he sang tho same song four years sgo when Giant powdor was first introduced, saying no miner or mine owner could afford to nse it; yet the sales has increasod to 400,000 pounds a ycar. For the truth of my sccount of tho "blasts" at Dutch Flat, I refcr to Messrs. Bradley, Gardnor, H. C. Kelscy, John Simons, Robert Gifford, Eddy, Sam. Higgins, H. Nichols and Bailey—sll practical minors, and residonts of Dutch Flat.

OSCAR W. WHITE.

Cherokee Flat, Cal., July 19, 1872.

SCIENTIFIC PROGRESS.

Manageable Balloon.

Tho Advocates of the possibility of utilizing the balloon for tho every-day purposes of life have been greatly encouraged hy the rosult of a sories of experiments lately made in Paris by M. Dupuy de Lome, and recently communicated to tho Academy of Sciences. This gentlemau is an eminent French ongincer, and well acqnainted with both the theory and practice of his profession; and his attention was ospecially called, dnring the siege of Paris, to the importanco of having a halloon which possessed somo power of stocrage.

He has completed the first constrnction accoording to his new plan, and made, as he claims, entirely successful exporiments with it. The balloon is in the shape of an enormous egg, the longer axis is horizontal, with an oblong bar suspended from it. The total length is 118 feet, and its diameter at the point of greatest circumference 49 feet. The rndder by which the balloon is steered is a plain triangular surface, made of unvarnished calico, and constructed so as to turn easily on its forward extremity. Tho car is of wicker-work, containing a windlasa for the screw, eight mon to manage it, and is capable of carrying fourteen persons.

The rudder is fixed to tho balloon itself, and the screw is below it and immediately attached to the car, and having only two blades, so that when the ground is touched they can be placed horizontally to escape injury. The windlass which turns the screw is worked by four to eight men. The envelope of the balloon is eomposed of white silk.

The constructor does not pretend to be able to make a direct movement against the wind, but only to deviate from its direct set when running hefore it. He expects to be ahlo to taek to the right or left, hnt does not hopo to be able to beat to windward. There is a second balloon attachmont to the hottom of the main halloon, forming a kind of compartment, occupying ahout one-tenth of the oubic space of the balloon, and serving to keep it stiff and of the required shape.

In the experimental trip of M. De Lome a half gale was blowing, and the result answered entirely to his expectations. The screw drove the halloon about five miles an hour quicker than the wind was blowing, and by the use of the rudder the course of the balloon could be altered eleven degrees, either way, from tho set of the wind.

IRON IN THE BLOON.—Boussingault finds tho amount of metallic iron in aliments as follows: the minimnm, in carots, 0·0009 gram; tho maximum, in the blood of hogs, 0·0534; in beer, ·0040. In vertebrates the quantity of iron does not exceed a thoueandth of the weight; in invertebrates, probably not four ten-thousandths. It is usual to attribute the rod color of the hlood to the presenee of iron. Yet the white blood of invertebrates contains almost as much iron as the red of vertebrates. Also, plants not green, like mushrooms, contain as much iron as the green plants. Boussingault eonclndes that of all substances the blood is that which eontains the largest amount of iron, and of assimilable iron, since it has already bcen assimilated.

THE WEATHER AND THE GULF STREAM.—It is worthy of notice that although the weather during the last few months has been altogother remarkahle—the winter unusually mild, and some of the spring months singularly bleak—we have heard scarcely anything of our ouee familiar friend the Gulf Stroam. Those who used to be most ready to ascribe all weather peculiarities to its influence, seem afraid now even to mention its name. The notion has spread abroad, that the Gulf stream is a detected imposter, a convicted sham; having no more to do with our climate (or rather with our weather), than "with the ripening of oranges at Naples, or the maintenance of Catholicism at Rome."

USE OF POTASSIUM IN SOILS.—Aecording to Nobbé, the prcsence of potassium in soils is necessary in order to enable tho chlorophyll grains of the leaves to form starch, sodium and lithium being nnable to replace potassium in this funetion, the latter indeed being actually injurions. He has also ascertained that the different combinations of potassium vary very much in their value, the chloride being by far the tsom efficacious.

METEORIC IRON FROM EL DORADO CO.—Prof. Shepard, of Amherst College writes in substanee as follows to the *Am. Jour. Sci.* For my knowledge of the meteoric iron of El Dorado Co., Cal., I am indehted to M. A. Stebhins, hhrarian of the Mercantile Library, San Francisco, who sent me a few grains of turnings obtained during the separation of a slico destined for tho Cal. Geological Survey collection. The mass is described by Mr. Stebbins as having the size and shape of a man's head. It was fonnd in a field, taken to a blacksmith's shop, where it proved uamaaageahle in working, and then fell into scientific hands. Ite surface possesses the indentations common to these bodies, the crust or coating being partially oxidized. It weighs 85 lbs. I find the turniugs to have a speeifie gravity of 7.80, which may perhaps he a trifle above what the mass possesses as it is presumable that the turnings have suffered a slight coadensation in the process of separation. The fragments aro far from all trace of sulphur. A singlo analysis upon one grain hes afforded me:—Iron, 88.02; nickel, 8.88: Insoluble, consisting of a mixture of iron protoxide and peroxide, witb minuto silvery particles of supposed phosphor-metal (Schreibersite,) 3.50; Total, 100.40. The amount of material at eommand was too smsll to search for tho othermetals commouly found in metooric irons.

THE BLAKE CAUSHER has made its appearance as a witnes in the field of geological inquiry. Dr. Mitchell exhibited at a late soirée of the British Institution, a series of flints hroken in this machine, the object being to prove tbat hy the natural fracture of flint, flakes and ehipping are produced, which in tho minutest details coincide with those flint flakos whieh havo been so largely collocted, and commented on as beiug the rude implements of the early races of man. Dr. Mitchell also showed a variety of broken flints pieked up in gravel roads, which wore also identical with the typieal forms, which have been described as precursors of tbose arrow-heads, etc., which are evidently manufactured artieles. Of course the argument was that much of what we take to be tho work of man, is but the natural result of the fracture of flint stones by accidental means, and we must therefore be careful in ascribing to man's agency the produetion of these peculiar stone implements, when we find them under such eircumstances as associate the time of thoir origin with somc too distant geologic age.

A NEW FLUORESCENT BODY.—Presidcnt Morton of the Stevens Institute, announced in a recent lecture that, in the course of the oxamination which he had been making on snbstances of this olass, he had encountered one which he believed to be as yet nnknown, and which possessed the property of developing light by fluorescenee in a pre-ominent degree. This body was obtained from petroleum, and he would propose to take for it the name "viridine." The word viridine had been alrcady applied as a synonyme for chlorophyll, but was now practically obsolote, and too appropriate to the present snbstance to be thrown away. A large drawing of a flower, with leaves painted seemingly in light nmber tints, was then shown and illuminated by electric discharges when it appeared of the most vivid green. The peculiar fluorescent spectrum of this body, and its relations to the spectra of other substances was explained, and many other illustrations were exhibited.

CAUSE OF THE BLUE AND VIOLET (INTERCHANGEABLE) COLORS OF FISHES.—G. Pouchet finds there is a constaut and natural cause for the bluish or violet variable color of some fishes. There is under the skin a layer of small irregularly spherical granules, yellow by transmitted light, which is the source of the color, this color being a complementary one to the yellow. Tho diamcter of these *irising* granules varies from 2 to 4 or 5 thousandths of a millimeter; and each is formed of a pile of extraordinarily thin lamellæ, applied one to the other, but separately distinguishable under the microscope. Pouchet concludes that the color is due to a kind of fluorescenca.

NEW MODE OF REFRIGERATION.—M. Fosselli has announced to the French Academy of Sciences that he has succeeded in producing an amount of cold just below the zero of Fahrenheit scale hy simple mechanical action creating rapid evaporation. He employs a wheel formed of a spiral tube, both ends of which are open, set vertically and half immersed in the fluid to be cooled, so that the latter passes constantly through the whole length of the tube, half of which is eonstantly above the liquid, and, being wet, gives rise to active evaporation and consequent refrigeration within it.

COPPER IN COCOA AND CHOCOLATE.—Carefnl chemical analyses show that cocoa and chocolato always contain a small percentage of copper. The husks of the cocoa have been found to contain as high as 0.025 per cent of copper, while the kornel of the bean only contained 0.004. Samples of chocolate contained 0.0125 of copper. Substances containing copper, even in the smallest proportions, cannot be very desirable for the diet of invalids, for which the above articles are quite extensively used.

ILSEMANNITE, A NEW MINERAL.—A mineral which has been termed ilsemannite has lately been described as new by Höfer, and as occurring in some heavy spar from Bleiberg. From its chemical composition it is believed to be a product of the decomposition of wulfenite.

GENERATION OF OZONE.—According to Dr. Pincus, if perfectly dried hydrogen ie caused to burn, in a very small flame, from a jet ending in a very fine point, the smell of ozone is very distinctly perceived, and it becomes more conspicuous if a dry and clean beaker-glass is held over the flame. When, by the aid of a properly contrived apparatus, the combustion takes place in pure oxygen, the samo phenomenon is observed.

NEW THEORY OF FERMENTATION.—Mr. A. Petit, in *Comptus Rendus*, puts forth the following new theory of fermentation:— Tho sugar, in presence of yeast-globulos, decomposes water. Tho oxygen combines with the yeast; the liberated hydrogen unites with a molecule of sugar and destroys it, producing alcohol, carbonic gas and hydrogen, which again decomposes a molecule of sugar, and so on.

A NEW PHYSICAL LAW.—M. Valson announces in *Les Mondes* that from the researches he has made he concludes that the following is a new law in physics: For all uormal solutions—that is to ssy, those which contain each one equivalent of anhydrone salt, weighed in grammes, dissolved in one litre of water—the product of the density by the capillary hight is perceptibly the samo.

ABSORPTION OF WATER BY LEAVES.—The experiments of Cailletet confirm fully the results of Duchatre and others that leaves absorb neither water with which they are wetted nor vapor from surrounding air—as long as there is a full supply by the roots. He shows incontestibly, however, that foliage does absorb liquid water (but not watery vapor) when the root snpply fails.

Of the sixty-four ehemical olements which compose our globe, nineteen have been found in meteorites, and as no single element has been discovered in them which was not previously known on earth, it is supposed that the more distant parts of the universe are similar in composition to our sphere.

MECHANICAL PROGRESS.

A New Motive Power for Ships.

The *Liverpool Albion* reports that recently a number of gentlomen interested in shipping met at Canada Basin to examine a new means of propelling ships, which has been invented by Mr. J. J. Allingham, of Hamilton-road, Everton. Mr. Allingham's idea is to make the waves, acting upon the hnll, propel the ship; and this he proposes to do by a very novel contrivance. Beneath the keel of the vessel he would fix two oblong steel frames, each fitted with two sets of blades to open and shut crosswise. One frame he would secure to the forepart, and the other to the stern. Both the frames would he fixed at an angle. When the vessel rises on the sea, the pressuro of the water upon the frames would of necessity force her forward; and when she sank, the blades, opening, would form the opposite angle, and the outward motion would thus be continued. The apparatus would also have the effect of steadying her. When she rolled over to the right, the blades on the left side of the frame being shut, the frames would tend to bring her back to the perpendicular; and, when she rolled to the left, the closing of the blades on the right side would have a similar effect. The angles of the frame would have to be increased or lessened, according to the state of the weather. To stop the vessel it would he simply necessary to close the blades in the frames. The action of the appliance depends entirely upon the motion of the waves; but at sea it is rarely the case that there is not a sufficient motion in the water to raise a vessel several feet.

The inventor believes that the apparatus would be a sufficient propelling power for ships not required to travel at a great speed; but would supply ships with a limited quantity of rigging as auxiliary power, and to provide against accident. The working of the invention was shown upon a model ship seven feet in length. The little vessel held its way against the tide, and, even in comparatively calm water, traveling at considerable speed. The opinion of the spectators seemed to he that the invention is in a somewhat crude state at present; hut that it is founded upon a sound principle which, skillfully applied, would be of great value to the mercantile marine.

MECHANICAL WOOD CARVING.—H. A. Lanteigne, of Paris, has invented a machine for ornamenting wood surfaces, which is very highly spoken of. The wood is passed between a bed-plate and a matrix cylinder, on the surface of which the desired design has been cut so that it is pressed into the wood. The ease of thus cheaply producing ornamental woodwork is appsrent, and the invention has been pronounced by some the richest industrial product of the last ten years.

MONZONITE, A NEW MINERAL.—Von Kobell describes a new mineral, called Monzonite, as occurring in Monte Monzoni, in the Fassa Valley.

Soldering Fluids.

There are several soldering fluids in use. Among these is one for

Soldering Iron and Steel,

Which we quote as follows: "Take a solution of phosphoric acid in alcohol at 80 per cent. Tho parts to ho soldered are moistened with this solution either by dipping in or with a hair brush. Another solution is that of the double chloride of zinc and ammonium, to be made hy diseolviug equal parts by weight of zinc and sal ammoniac in strong hydrochloric acid, and evaporating to dryness at a gentle heat. The saline residue is afterward dissolved in water, so as to make a strong solution. It is ohvious that after soldering, the metal has to be carefully cleaned so as to remove any excess of adhering soldering salt solution, because both the liquids here alluded to would, if left on the iron or steel, cause it to rust.

Alloy Suited for Soldering Steel and Iron to Brass.

Take 3 parts of tin, 39¼ of copper, and 7¼ of zinc. It is stated, by this alloy in molten state, steel and iron, as well as these and brass, can be so joined togother as to prevent any breakage.

INTERESTING TO IRON BUILDERS.—A discovery has recently been made in France, highly interesting for iron-builders, and relative to the conservation of the iron beams used in hydraulic works. It consists in the application of a chemical process operated at once, without any particular tools, and at a trifling cost. Supposing two beams have to he joined together, holes have to be bored and next filled with some zinc-filling mixed with any fatty material, then the peg or screw is introduced in the ordinary way. A galvanization ie thus slowly produced, absolutely the same as when iron is dipped into molten zinc. This process can even he applied to timher. Experiments have been made, and declared perfectly conclusive.

In the Spanish colonies, they use, instead of hydraulic cement, the ordinary hricks baked to a high temperature and ground to a state of fine dust. They are mixed with ordinary lime and sand. This article is sold per barrel, at the same price as cement. The proportious, generally employed are one part of brick dust one of lime, two of sand, mixed dry and moistened afterwards with water.

AN IMMENSE BRIDGE STRUCTURE.—Our country has some vast structures comparatively unknown. The Tensas and Mobile bridge, or bridges, on the Mobile and Montgomery Railroad, in Alabama, extends from Tensas station, on the Mobile and Montgomery road, to the city of Mobile, a distance of fiftcen miles, crossing both the Mobile and Tensas rivers, and including ten draws, one for each of the navigable channels into which the rivers are divided. The bridge itself is constructed of wood, but its pillars or supporters are iron cylinders, which rest on a solid surface of wooden piles, driven down evenly with the hottom of the stream and the mud of the intervening morasses. It has been three years in the course of construction, at a cost of about $1,500,000; and now that it has been sucessfully completed, it is perhaps the longest structure on the globe.

REPORT ON THE PROGRESS OF THE IRON INTERESTS IN EUROPE.—By the last quarterly report on the progress of the iron interest in Europe, it appears that the production of pig iron in the Prussian Provinces as given for 1869, was 1,151,945 tone; 1870, 1,137,448 tons. According to this report the iron mines in the north of Spain are now attracting much attention because of the English demand for rich and pure ores for the manufacture of iron, suitable for the conversion into Bessemer steel. These oree are principally hydrous, red, brown and yellow hemetites, and spathic carbonates, which occur in the cretaceous formation in the form of great lodes often 100 to 300 feet wide traversing the formation more or less coincident with the strata. The rich magnetites of the south of Spain (between Gihraltar and Malaga) are also attracting the attention of capitalists.

PUTTING TIRES ON WAGON WHEELS.—A mechanic gives the following method of so putting tires on wagon wheels, that they will not get loose and require resetting: I use a long cast-iron pan or dish made for the purpose; linseed oil is brought to a boiling heat, the wheel is placed on a stick over the dish, so as to hang in the oil, each felloe an hour. The timber should be dry, as green timber will not take the oil.

MOVING RAILROAD TRAINS BY SAIL.—The Peteler Portable Railroad track has been laid down by the party engaged in constructing Matagora Light-house, and transportation has been greatly facilitated by using a sail on the cars. As great a speed as a mile in 2¾ minutes has thus been attained, and it was found that the cars would sail almost as close to the wind as a hoat.

ARCHITECTURAL ERROR.—A modern architect says we should no longer lath and plaster our houses; other modes of finish are more desirable. By the present system we build one house for ourselves, and two for the rats. No one can controvert the last assertion.

MINING SHAREHOLDERS' DIRECTORY—Meetings, Assessments and Dividends.

[Compiled Weekly from Advertisements in Mining and Scientific Press and other S. F. Journals.]

ASSESSMENTS.

Name of Co.	Location.	Secretary.	Office in S. F.	Assm't.	Levied.	Delinq't.	Sale Day.
Alps M Co.	Ely Diet.	Chas. S Neal.	419 Cal. St.	50.	June 18.	July 26.	Aug. 19.
Arkansas M. Co.	Ely Diet. Nev.	Geo. Davidson.	734 Mont'gry St.	25.	July 23.	Aug. 30.	Sept. 23.
Baltimore American.	Gold Hill, Nev.	J. L. King.	411 Cal. St.	$1 00.	July 13.	Sept. 2.	Sept. 20.
Bellevue M. Co.	Placer Co.	T. F. Cronise.	409 Cal. St.	50.	June 20.	July 29.	Aug. 19.
Bowery Cons.	Ely Dist., Nev.	Chas. E. Elliot.	419 Cal. St.	75.	July 9.	Aug. 15.	Sept. 9.
Corona Cons. M. Co.	Eureka Dist.	T. F. Cronise.	409 Cal. St.	10.	June 25.	July 31.	Aug. 22.*
Crown Point Ravine.	Gold Hill.	J. M. Buffington.	Merchants' Ex.	$5 00.	May 3.	June 20.	July 29.
Daney M. Co.	Lyon Co., Nev.	Geo. R. Spinney.	320 Cal. St.	75.	July 3.	Aug. 5.	Aug. 26.
Diamond S. M. Co.	White Pine.	W. H. Codington.	402 Montgomery.	15.	June 29.	Aug. 1.	Aug. 20.
Empire M. Co.	Grass Valley.	S. Pinkham.	401 Cal. St.	$10.	July 22.	Aug. 24.	Sept. 17
Empire M. Co.	Gold Hill, Nev.	W. E. Dean.	419 Cal. St.	50.	July 10.	Aug. 13.	Sept. 2.
Excelsior M. Co.	Cope Diet., Nev.	Frank Swift.	415 Mont'gry.	$2 00.	June 20.	July 27.	Aug. 19.*
Exchequer M. Co.	Gold Hill, Nev.	J. T. Bagley	401 Cal. St.	$3 00.	June 26.	July 31.	Aug. 22.
Gilt Edge G. M Co.	Tuolumne Co.,	Daniel Buck.	331 Mont'gry St.	10.	July 20.	Aug. 19.	Sept. 20.
Golden Chariot M. Co.	Idaho.	Louie Kaplan.	Merchants' Ex.	$2 20.	June 22.	July 28.	Aug. 17.
Dutch Flat Bl. G. Co.	Cal.	D. T. Bagley.	401 Cal. St.	$1 25.	* June 11.	July 10.	Aug. 6.
Hermes M. Co.	Ely Dist.	B. B. Minor.	411½ Cal. St.	$1.	July 13.	Aug. 19.	Sep. 14.
Hudson G. M. Co.	Plumas Co., Cal.	J. L. King.	411 Cal. St.	10.	June 13.	July 27.	Aug. 24.*
Ida Elmore M. Co.	Idaho.	Wm. Willis.	419 Cal. St.	$3 00.	May 21.	June 29.	July 21.
Ingomar M. Co.	Ely Diet., Nev.	Chas. S. Neal.	419 Cal. St.	25.	June 5.	July 15.	Aug. 9.
Kincaid Flat M. Co.	Tuolumne Co.	F. H. Cornell.	220 Clay st.	$3 00.	July 17.	Aug. 23.	Sept. 14.*
Kentuck M. Co.	Gold Hill, Nev.	Frank Swift.	415 Mont'gry.	$10 00.	June 12.	July 16.	Aug. 5.
Kentucky M. Co.	Ely Dist., Nev.	J. P. Cavallier.	509 Cal. St.	50.	July 2.	Aug. 10.	Aug. 31.
Lane & Kurtz M. Co.	Brit. Columbia.	B. B. Minor.	411½ Cal. St.	$5 00.	July 23.	Aug. 26.	Sept. 14.
Lemon M. & M. Co.	Eureka Dist.	I. T. Millikin.	608 Merchant.	$1 00.	May 29.	July 6.	Aug. 10.
Lonise S. M. Co.	Ely Dist., Nev.	Wm. H. Watson.	302 Montgomery.	10.	July 3.	Aug. 10.	Sept. 7.*
Mammoth S. M. Co.	White Pine.	J. L. King.	411 Cal. St.	10.	June 27.	Aug. 1.	Aug. 27.
Marcelina S. M. Co.	Eureka Dist.	Chas. E. Elliot.		30.	July 24.	Sept. 9.	Sept. 30.*
Morning Star M. Co.	Alpine Co., Cal.	O. H. Rogart.	Merchants' Ex.	$1 00.	July 12.	Aug. 20.	Sept. 14.*
Mt. Jefferson M. M. Co.	Tuolumne Co.	J. W. Clark.		10.	July 25.	Aug. 26.	Sept. 16.*
National M. Co.	Nye Co., Nev.			50.	July 4.	Aug. 14.	Sept. 14.
Nevada Land and M. Co.	Elko Co., Nev.	Wm. H. Watson.	302 Montgomery.	8.	July 18.	Aug. 31.	Sept. 19.*
Newark M. Co.	Ely Diet., Nev.	D. T. Bagley.	401 Cal. St.	50.	June 12.	July 22.	Aug. 17.
Newton Booth Cone.	Ely Diet., Nev.	R. F. Scott.	338 Montgomery.	30.	June 6.	July 12.	Aug. 5.
Noondag S. M. Co.	White Pine.	Chas. H. Fish.	419 Cal. St.	25.	July 2.	Aug. 5.	Aug. 26.
Norman G. M. Co.	Amador Co. Cal.	Wm. H. Watson.	302 Montgomery.	10.	June 27.	Aug. 1.	Aug. 22.*
Opbir S. M. Co.	Virginia, Nev.	Joe. Marks.	Merchants' Ex.	$5 00.	July 17.	Aug. 21.	Sept. 11.
Overman S. M. Co.	Gold Hill, Nev.	T. J. Owens.	Cor. Cal. & My.	$4 00.	June 5.	July 18.	Aug. 17.
Pacific Borax Co.	Nevada.	R. B. Noyes.	Merchants' Ex.	15.	July 5.	Aug. 6.	Aug. 30.
Pennsylvan a.	White Pine.		331 Montgomery.	40.	June 14.	July 22.	Aug. 13.
Phoenix S. M. Co.	Eureka, Nev.	Chas. H. Fish.	419 Cal. st.	$1 00.	July 6.	Aug. 12.	Sept. 2.
Piermont M. & M. Co.	White Pine.	J. W. Clark.	418 Cal. St.	60.	July 10.	Aug. 12.	Sept. 10.*
Pioche M. Ex. Co.	Ely District.	T. W. Colburn.	419 Cal. St.	30.	July 12.	Aug. 22.	Sept. 16.
Potomac S. M. Co.	Nye Co., Nev.	M. Lynch.	316 Cal. St.	50.	June 6.	July 15.	Aug. 19.
Sapphire S. M. Co.	Gold Hill, Nev.	J. F. Lightner.	438 Cal. St.	30.	July 16.	Aug. 17.	Sept. 9.
Senator S. M. Co.	Nevada.	T. B. Wingard.	3 8 Cal. St.	25.	July 6.	Aug. 10.	Aug. 30.
Southern Gold Hill.	Gold Hill, Nev.	David Wilder.	Merchants' Ex.	25.	June 28.	Aug. 3.	Aug. 26.
Spring Mt. Tunnel.	Ely Diet., Nev.		419 Cal. St.	30.	July 3.	Aug. 16.	Sept. 7.
Star Cons. M. Co.	Eureka Dist.	G. R. Spinney.	320 Cal. St.	25.	June 20.	July 30.	Aug. 22.
Sterling M. Co.	Ely Diet., Nev.	H. C. Kibbe.	419 Cal. St.	50.	July 15.	Aug. 21.	Sept. 12.
St. Louis M. Co.	Placer Co., Cal.	T. F. Cronise.	409 Cal. St.	$1 00.	July 1.	Aug. 6.	Aug. 27.
St. Patrick M. Co.	Placer Co., Cal.	D. A. Jennings.	401 Cal. St.	$3 00.	June 19.	July 27.	Aug. 19.
Tellurium G. & S. M.	Amador Co. Cal.	Wm. H Soery.	King & Clay.	$1 00.	July 22.	Aug. 23.	Sept. 16.
Union G. M. Co.	Sierra Co., Cal.	A. T. Durbrow.	Merchants' Ex.	$1 00.	June 25.	July 28.	Aug. 19.*
Wm. Penn Cons.	Nevada.	J. F. Pope.	6 Mont'gry St.	10.	July 3.	Aug. 5.	Sept. 2.*
Winnemucca Chief.	Nevada.	T. F. Cronise.	409 Cal. St.	15.	June 19.	July 30.	Aug. 20.*
New York Cone. M. Co.	Gold Hill, Nev.	H. C. Kibbe.	419 Cal. St.	50.	June 21.	July 22.	Aug. 9.

MEETINGS TO BE HELD.

Name of Co.	Location.	Secretary.	Office in S. F.	An'l or Sp'l.	Date.
American Flat M. Co.		J. L. King,	411 Cal. St.	Annual.	Aug 6
American Flag.	Ely Diet. Nev.	J. L. King.	411 Cal St.	Annual.	Aug 6.
Alta S. M. Co.		W. H. Watson,	302 Montgomery St	Annual.	Aug. 15.
Alabama & Humb'dt M.Co.		W. H. Watson,	302 Montgomery St.	Annual.	Aug. 17.
Alhambra Hill M. Co.	White Pine, Nev.	H. G. Langley.	612 Clay St.	Special.	Aug. 19.*
Bismarck S. M. Co.		F. Swift.	415 Montgomery St.	Annual.	Aug. 6.
Cerbat Cons. G. & S.M.Co.	Arizona.	T. E. Jewell,	320 Sansome St.	Annual.	Aug. 12.
Columbia S. & M. Co.	San Diego Co.	J. W Tripp,	406 Cal. St.	Annual.	Aug. 10.
Cons. Gold Hill Quartz.	Storey Co., Nev.	R. Wegener.	414 Cal. St.	Annual.	Aug. 3.
Enc. pa M. Co.		R. B. Noyes.	Merchant. Ex.	Annual.	Aug. 8.
Hartford M. Co.		C. H. Fish.	419 Cal. St.	Annual.	Aug. 12.
Imperatrae Eugenia		G. Berson	712 Market St.	Special.	Aug. 26
Ida Elmore.	Idaho.	Wm. Willie.	419 Cal. St.	Annual.	Aug. 5.
Lucin M. Co.		J. W. Clark.	418 Cal. St.	Annual.	Aug. 5.
Monitor Belmont M. Co.		B. B. Minor.	411½ Cal. St.	Annual.	Aug. 5.
National M. Co.	Nevada.	R. B. Minor.	411¼ Cal St.	Annual.	Aug. 9.
Occidental M. Co.	Washoe.	C. E. Elliot,	419 Cal. St.	Annual.	Aug. 7.
Oakville Quick-silver Co.	Napa Co.	W. H. Mott.	432 Montgomery St.	Annual.	Aug. 31.
Occidental M. Co.	Washoe	C. E. Elliot.	419 California St.	Annual.	Aug. 17.
Pride of the Mountain.	Winnemucca Diet., Nev.	T. W. Colburn.	419 Cal. St.	Annual.	Aug. 12.
Pennsylvania M. & M. Co.	White Pine, Nev.		331 Montgomery St.	Special.	Aug. 14.
Providence M. Co.		W. H. Knight.	331 Montgomery St.	Annual.	Aug. 24.
Revenue Cons. S. M. Co.	Arizona,	L. B. Edwards,	535 Cal. St.	Annual.	Aug. 10.
Tintic Eureka S. M. Co.		J. L. King.	415 Montgomery St.	Annual.	Aug. 5.
Woodville G. & S. Co.		A. Noel,	419 Cal. St.	Annual.	Aug. 6.
Woodville G. & S. M. Co.	Waehoe.	A. Noel.	419 Cal. St.	Annual.	Aug. 6.

LATEST DIVIDENDS—Within Three Months.

Name of Co.	Location.	Secretary.	Office in S. F.	Amount.	Payable.
Belcher M. Co.	Washoe.	H. C. Kibbe.	419 California St.	$30.	July 5.
Black Diamond Coal Co.	California.			½ per cent,	June 28.
Crown Point G. & S. M. Co.	Washoe.	C. E. Elliot.	419 California St.	$3 00.	July 5.
Eastport Coos Bay Coal.	Oregon.	I. L. Pool.	Merchants' Ex.	$5 00.	July 12.
Keystone Quartz M. Co.	California.	L. Vesaria.		50.	July 10.
Meadow Valley M. Co.	Ely Diet., Nev.	T. W. Colburn.	419 California St.	$1 00.	June 20.
Pioche S. M. Co.	Ely Diet., Nev.	C. E. Elliot.	419 California St.	$1 00.	July 5.
Raymond & Ely M. Co.	Ely Dist., Nev.	A. J. Moulder.	419 California St.	$7 00.	July 5.

—* Advertised in this journal.

STOCK SALES FOR WEEK ENDING AUG. 1—S. F. Stock and Exchange Board.

NAMES OF COMPANIES.	Feet in Mine.	Shs. in ft.	Total Shs.	FRIDAY. Shs	Prices.	SATURDAY. Shs	Prices.	MONDAY. Shs	Prices.	TUESDAY. Shs	Prices.	WEDNESD'Y Shs	Prices.	THURSDAY. Shs	Prices.
Alpha.....*	300	20	6000	135	60 @62	45	60 @62	80	59 @62	150	61 @62	95	60½@62½	160	60 @62
Alps.....§	800	37½	30000					150	3½			20	3½		
American Flag..§	2,600	11½	30000	280	21 @21¾	470	21½@22	410	19½@21	310	20½@21½	355	21 @21¾	200	21¼@21½
Arizona & Utah.*	1,500	7½	1800	30	2	200	2½	60	2½	200	2½@ 2¾				
Belcher.....*	1,000	40	40000	60	100@1075	10	1070@1080	232	108 @110	420	109 @115	545	119 @123	595	120 @125
Baltimore.....*	1,200	20	24000	90	2¾@ 3	350	3	100	3	50	2	345	3 @ 3¼	50	3½
Bowery.....§	1,000	30	30000					120	2¼	150	2½	70	2½	150	2¼@ 2½
Bacon.....*				20	7½@80			115	75 @80	10	80				
Buckeye.....*			16000			70	3¼			110	3¾@ 4				
Chollar.....*	2,800		28000	110	13 @115	70	109 @113	155	108 @112	100	108 @110	95	107 @110	280	102 @110
Caledonia.....*	5,000	4	20000	480	65 @67½	470	60 @64½	210	57 @61	350	62 @63½	145	63½@65	240	63 @65
Cone. Virginia..*	1,160	20⅝	23200	250	41	240	38½@40	165	35 @36	225	34 @36	195	38 @40	290	38 @38½
Confidence.....*	130	192	24960	625	12¾@12¾	170	12	380	11¾@12	330	11¾@12	120	11¾@12	185	11¾@11¾
Crown Point....*	600	166⅔	100000	210	157 @161	210	150 @156	350	142 @145	370	142 @149	640	107 @110	315	145 @150
Central.....*	70	357	25000	65	9½@10	20	11	10	10	50	11	105	10½@11	10	10½
Calaveras.....*				200	2½@ 6										
Condor.....§				2250	4 @ 4½	195	4¾	50	4	50	4	225	4	350	4½
Daney.....*	2,000	12	24000	175	2			500	2	100	2½	543	2 @ 2⅛	260	2 @ 2⅛
Eureka Cone....*			5000	1335	24 @25	1244	23½@26¾	540	26¾@27¾	1120	26 @28	570	24½@26½	400	23¾@24¼
Eureka.....*	1,650	12	2000												
Exchequer.....*	400	20	8000	185	19 @20	70	22 @23	90	21 @23	60	23			60	20 @21
Eclipse.....*	70	357	25000	1050	14 @14¾	220	13½@14	745	12½@14¾	615	14 @14¾	420	14¼@14¾	190	13¾@14¾
Empire Mill.....*	75	16	1200	940	16 @16¾			300	14¾@14¾	400	13¾@14	275	13¾@14	400	13¾@13¾
Excelsior.....*			5000	200	13¾	200	13¾	200	13¾	200	13¾	150	13¾@14		
Gould & Curry..*	1,200	4	4800	105	202 @205	90	192 @200	130	189 @192	45	175 @180	30	190 @192	35	189 @190
Golden Chariot.*	750	14½	10000	130	12 @12¾	10	12			155	10	160	10 @11	45	10
Globe.....*			20000	100	2¾	30	2¾	30	2½@ 2¾	100	2¾	75	2¾		
Hale & Norcross*	400	50	20000	280	92 @97	140	87½@90	205	79 @82½	255	83 @86	24	87 @91½	115	91 @93
Hubn & Hunt....*	3,600	8½	30000	500	3½	200	3½@ 3¾	385	4 @ 4¼	940	4¼@ 4¾	350	4¾@ 4½	1120	4
Ida Elmore.....*	1,300	7½	10000	395	18 @19	55	17			70	17				
Imperial.....*	184	543⅜	100000	1410	14½@14¾	740	14½@14¾	2785	13¾@14¼	1800	13¾@13¾	125	13¾@14	695	13¾@13½
Ingomar.....§	1,000	40	40000	600	1¾	800	1⅝@ 2	610	1¾@ 2	800	1⅝@ 2	365	1¾	50	1⅞
Julia.....*	2,000	10	20000	100	6½			60	7	60	8¾@ 7	285	8½	150	9⅜@ 6¾
Justice.....*	3,000	7	21000			50	14 @14½	30	14	90	14	135	13½@14		
Kentuck.....*	95	21	2000	5	800										
Knickerbocker..*	1,200	20	24000	300	87@ 9	500	8¾@ 9⅜	320	8¾@ 8¾	90	8½@ 8¾	400	8⅜@ 9	150	8¾
Mammoth.....*	1,800	20	36000	100	70c			200	70c	50	70c			50	70c
Meadow Valley..§	24,022	2½	60000	1000	17¼	705	16½@17½	215	16½@17	1330	16¾@17⅜	5	70 @17	210	16⅝@16¾
Mahogany.....*	72	13⅞	10000	100	19 @20	170	19 @20	1750	19½@20	350	18½@18¾	295	18 @18⅝	790	18 @19½
Ophir.....*	1,400	12	16800	645	51 @54	610	55 @57	195	55 @56¾	440	50 @52	475	49 @50	225	42½@47
O. H. Treasure..*	800	26⅔	21333	270	8	280	7¾	70	7¾@ 8	175	7½@ 7¾	160	7¾@ 8	50	7½
Overman.....*	1,200	10	12000	60	92½@93	60	92 @94	80	86 @88	60	90	20	91 @92½	80	91 @92
Occidental.....*	800	12½	10000												
Pioche.....*	1,000	20	20000	1225	32½@33½	430	33½@35	685	29 @30	590	29 @31	440	29½@31½	580	30 @30½
Page & Panaca..§	2,400	16⅔	40000	100	2							150	2¼	50	2½
Phoenix.....*			50000	200	3¾	110	3¾	1900	4 @ 4¼	185	4 @ 4½	2045	4¼@ 4¾	1110	4½@ 4¾
Raymond & Ely..*	4,000	7½	30000	240	145 @150	170	147 @150	230	151 @155	185	155 @160	85	156 @157	90	155 @157
Savage.....*	800	20	160 0	760	177 @190	325	172 @175	380	162 @167	200	163 @165	200	170 @174	225	168 @175
Seg. Belcher....*	160	40	6400	190	112 @116	138	116 @117	110	112 @116	110	122 @129	125	125 @128	10	120
Sierra Nevada..*	3,000	7½	20000	854	17½@19	760	18½@19¾	190	16¾@17¾	270	16¾	225	16¾@16½	280	16 @16½
Succor.....*	7,600	3	22800	150	5⅞	420	5¾@ 5⅞	275	5¾	255	5 @ 5⅛	70	5	50	5
St. Patrick.....*	1,800	12¾	5600												
South Chariot..*	680	30½	20000	200	3¾					50	3¾	50	3¾		
Trench.....*	20	250	50000	20	15	15	15	100	15			120	15 @15¾	100	15
Wash. & Creole.§	200	150	30000	75	4¾			300	5 @ 5¼	75	5	100	4¾	150	4¾
Yellow Jacket..*	1,200	20	24000	330	151 @157	75	146 @148	227	140 @145	230	142 @145	130	145	80	140 @147
Yule Gravel.....*	400	25	10000							120	2				

Notes.—†—California. *—Waehoo. ‡—White Pine. §—Ely District. ¶—Eureka District. ‖—Idaho. ⌊—Nearly. ⌊—Over.

S. F. Stock and Exchange Board.

Thursday, August 1, 1872.

The sales at the Stock Board for the week ending on Thursday 25th ult. were $3,028,000. During the past week, 90 tons of ore were raised from the North Star, and 109 tons reduced, leaving 25 tons on the dumps. The American Flag mine shipped $22,000 on the 26th inst. There is now 1,160 tons of ore ready for the furnaces at the Eureka Consolidated mine. The Phœnix shipped 11 tons of bullion on the 26th ult. The Eureka (Grass Valley) mine turned out 550 ounces of gold last week. The Sierra Nevada produced during the same period, 420 tons of ore. The Crown Point mine yielded 2,300 tons last week valued at $59,000 and the August dividend is expected to be lower than last month. The snm of $35,400 was sent down from the Rsymond & Ely mine on the 29th ult. and $44,500 on the 31st making a total of $346,705 for the month. The mill and mines are reported in good condition. The Chollar-Potosi turned out last week 950 tons, assaying $40.40 per ton; the Savage 1,230 tons, assaying $25.08 per ton, and the Hale & Norcross 700 tons of ore. The sum of $10,300 in bullion was shipped from the Pioche mine on the 30th ult. The Mahogany mine shipped $7,900 on the 26th ult. Dividends this month amount to $852,000; the dividends in same month last year were $363,300 showing an increase of $488,700.

The principal excitement among stock circles this week is the proposition of some of the stockholders in the Gould and Cnrry mine to oust the present trustess and place others in their stead, which under the law passed at the last session of the Legislature can be done under certain conditions. The first practical application of this law was in the case of the trustees of the Savage mine some five months since. The mine has returned no profit to the stockholders for the past two years and has sent down no bullion to stockholders since October 1871. The Diamond mine company, incorporated as the San Francisco and New York Mining and Commercial Co. have put 15,000 shares of their 100,000 shares on the market at $40 per share. Considerable excitement exists in stock circles over this diamond discovery, the particulars of which will be found in another column.

A letter from the Crown Point states that the indications are of an increased breadth of ore in the 1,300 foot level over that in the 1,200 foot level, which is 120 feet wide. Assays in the bottom of the winze average $269.40 in silver and $200.80 in gold—total $570.20 per ton.

The ore sent to the mills duriug the week ending July 26th inst. did not run as high as nsnal being from the 1,100 foot level, work below the 1,200 foot level having been interrupted by the cave. The water is receding slowly bnt surely, and the pump works well. It is now all out of the 1,300 foot. level, and a few days work will clear the winze. The mine will fnlly recover its productious of ore. A dispatch from the Pioche dated the 30th ult. states north winze down 21 feet, in ore two feet wide assaying $251. Sonth winze down 36½ fcet, ore 2¼ feet thick, assays $185. The new 160 foot drift is in 26 feet. The Belcher has not been able to get out the usual quantity of ore because the Yellow Jacket company have beeu compelled to nse their cages in hoisting water. The capital stock of this mine has been increased from $1,040,000 to $10,400,000 during the week which accounts for apparent discrepancy in our list of sales.

On Friday stocks were moderately firm. From Thursday morning's sales Belcher advanced $20; Gould & Curry $10; Alpha, Bacon and Ophir each $5; Crown Point $4; Yellow Jacket $5; Confidence, Exchequer, Eclipse, Empire Mill, Imperial, Sierra Nevada and Trench, each $1. Kentuck and Savage each declined $5; Hale & Norcross $4; Consolidated Virginia and Segregated Belcher each $2.

On Saturday prices were weak and irregular. From highest prices of the previous morning-Belcher advanced $10, Exchequer and Ophir each $3, Segregated Belcher $2, Enreka Consolidated, Pioche and Sierra Nevada each $1. Savage declined $10, Chollar-Potosi $2, Gould & Curry $8, Hale & Norcross and Yellow Jacket each $5, Caledonia and Crown Point each $4, Jnstice $2, Ida Ellmore $1.50, Consolidated Virginia and Overman each $1. No particnlar variation in other kinds.

Monday the market opened at lower prices. From highest rates on Saturday Caledonia declined $2; Chollar-Potosi $4; Consolidated Virginia $4; Crown Point $10; Exchequer $1; Gould & Curry $7; Hale & Norcross $8; Imperial $1; Overman $4; Savage $10; Segregated Belcher $1; Sierra Nevada $1, and Yellow Jacket $3. Belcher sold on the new basis on Monday at $110 to $108, equal to $1,100@ $1,080 for old stock. There are now 100 shares to the foot.

Mining stocks on Tuesday were in moderate demand and prices irregular. From the rates paid Monday morning, Segregated Belcher advanced $9; Caledonia $3; Belcher, Hale & Norcross and Overman each $2, and Central $1. Gould & Curry frrther declined $10, Ophir $4, Yellow Jacket $2, Chollar-Potosi, Crown Point and Sierra Nevada each $1.

On Wednesday stocks were much livelier, Belcher being the feature, and continuing to sdvance, compared with highest prices of day previous; Belcher advanced $8, Caledonia, Chollar-Potosi, Overmau, Segregated Belcher and Yellow Jacket each $2; Consolidated Virginia $4; Gould & Curry $12; Hale & Norcross $6; Savage $7; Ophir was $2 lower. Stocks were in light demand to-day at weak prices. From yesterday morning's sales, Segregated Belcher declined $7; Ophir $3; Alpha and Consolidated Virginia $2; Caledonia, Chollar-Potosi Exchequer and Overman each $1. Belcher and Hale & Norcross were each $3 higher than yesterday morning.

Mining Summary.

The following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

California.

ALPINE COUNTY.

Exchequer.—Alpine *Chronicle*, July 20: Two tons of ruby silver ore, low grade, was last week worked at the Schenectady by wet crushing and raw amalgamation with salt and bluestone. Seventy-four per cent. of its assay value was obtained in bullion .798 fine.

Leviathan.—A body of ore of the richest quality of the oxidized class has recently been opened out in No. 7 drift. An average sample upon assay showed 44 per cent. copper.

Globe.—Pumping was resumed on Tuesday, and on Monday drifting will again commence.

AMADOR COUNTY.

Bunker Hill.—Amador *Ledger*, July 27: The mine is looking well, and as work progresses gives most flattering assurance of future valne.

Original Amador.—Several days ago the 40 stamps were set in motion, and are pounding away on the large accumulation of valuable rock taken from the mine during the construction of the mill.

BUTTE COUNTY.

The Mines.—Chico *Enterprise*, July 26: The Alder Creek claims pay from $3 to $4 per day to the hand, with rocker. The Negro claims on Alder Creek are laying a flume preparatory to cleaning up. The ground prospects well. Gamblers' Gnlch quartz claims are paying from $1.50 to $2.50 per day to the hand. Georgia Slide, on Gamblers' Gulch, is paying about the same by ground sluicing. The Bull Creek mines have paid very well the past season.

Goon Prospects.—Parties sinking a well at Redding fouud coarse gold several feet below the surface, prospectiug 9 cents to the pan.

Cherokee Mines.—Marysville *Appeal*, July 23d: The Spring Valley Co. cleaned up about $50,000 last week. This makes about $200,000 taken out by this Co. during the season. The Cherokee Co. has cleaned up $82,000 during the season. The Hendricks Co., at Morris Ravine, have plenty of water, and are supposed to be doing well.

CALAVERAS COUNTY.

Upper Country.—Calaveras *Chronicle*, July 27: The Wolverine folks are surprised by the richness of the ore from the 200-ft. south level. The streak referred to last week contains rock *now*, which will pay handsomely for crushing at the rate of $3,000 per ton.

The 350-ft. north level in the Petticoat is in barren vein matter, the level having passed through the south chimney. Sinking in the main shaft. Some 75 tons of ore are at the mill, which is being overhauled.

The re-opening of the Sanderson was delayed on account of the scarcity of experienced underground miners. The vein is ready for active operations. The vein in the north level prospects better than expected; sinking commenced yesterday.

Gamble & Co., west of Independence, met a fine body of ore in the south level containing a valuable streak of solid sulphurets. A new tunnel is being started one hundred feet below the old one.

The Grasshopper at Mosquito has resumed sinking.

Preparatory work is going on at the Lonc Star, on the North Fork, with the view of reopening this mine.

At 40 ft. water was met in the main shaft of the French Lead, near West Point.

The Blazing Star shaft continues to yield ore worth $100 per ton.

Work has been commenced on the Josephine.

Gwin Mine.—Thursday we saw the product of 16 stamps during a run of 13 days. The amonnt was several thousand dollars. The rock crnshed was taken from the central shaft at 120 ft. The sinking of this shaft has developed an immense body of rich ore, extending from the surface down. A coutract for sinking it 100 ft. has been let. A wide ledge of first grade ore also shows itself in the bottom of the 500-ft. level in the south shaft, and the work of sinking 100 ft. deeper will be commenced next Monday.

Silver Mining.—Work has been recommenced npon the Heckerdon at Blue Mountain. The President of the Co. has purchased the Water Co's mill in Chili Gulch, which will

be placed npon the mine aa aoon as practicable.

Machinery.—A water-power arastra ia being put on the Horse-thief mine near Jesus Maria.

EL DORADO COUNTY.

Nearly Completen.—Placerville *Democrat*, July 27: The new 10-stamp mill on tbe Cedarburg, near Greenwood, will probably commencee crushing next week. The Co. are down about 60 ft. on the ledge, at which point it is immensely rich. Very rich ore has been discovered in the northern extension of this mine.

NAPA COUNTY.

Reddington.—Napa *Register*, July 27: We note the arrival of 66 flasks of quicksilver from the Reddington mine.

Quicksilver.—The numerous mines are all reported to be in a promising condition. The Valley mine has yielded 13 flasks witbin a month, and the Washington, with a force of 5 men, has yielded 28 flaske and a net profit of $1,000 within the same period. The Phœnix has 4,000 tone of ore on hand, and has resumed the work of reduction after a stoppage of 4 weeks for repair of its works. The Oakville is reported in snceessfnl operation. The Whitten lately sold for $45,000, is awaiting the erection of reduction works.

PLACER COUNTY.

Enterprise.—Auburn *Stars and Stripes*, July 25: At the Weske claims, Mr. Anderson has taken a contract to run a 4,000 ft. tunnel tbat will tap the main ridge portion of the claims.

Better.—The Auburn claim, Rock ereek, is improving in the character and richness of rock and size of ledge as tho shaft deseends. The shaft is down 130 ft., with a solid ledge 3¼ ft. in thickness and beautiful bluish rock, heavily loaded with galena and other sulphnrets, and making a good showing of free gold.

PLUMAS COUNTY.

Hunoarian.—Quincy *National*, July 20. Thesc claims are paying splendidly.

SAN DIEGO COUNTY.

Bullion.—San Diego *Union*, July 18: W. F. & Co. shipped by the *Pacific* gold bullion from the Julian and Banner mines valued at $2,807.

Discovery.—W. P. Miller came in on Sunday with some fine specimens from a lead discovered 12 miles thie side of Fort Yuma. He struck the lead hy sinking a shaft abont 30 ft. deep. The quartz contains a good ehowing of free gold.

The Mines.—The Defrees mill is running regularly on Owens rock, and that mine looks better than ever as the boye go down.

In the old tnuncl of the Good Hope the Swain hoys have just struck a splendid body of ore, very rich, and showing much free gold.

The Bush hoys have been taking out eome very rich rock from the Mahel ledge.

In the Helvetia shaft better rock tban ever hae been struck at 165 ft. The ledge is exceedingly well defined and improvee ae tbey go down.

Rock has been taken from the shaft of the Segregated San Diego, 100 ft. deep, richer than any taken out during the last two years.

In the Cañon the Antelope Co. are getting out splendid ore, and the mill will soon start up.

The Golden Chariot boys are at work, getting out ore of the usual richnese. The Whitney mill will soon begin on 100 tone of it, which will yield from $30,000 to $40,000.

SIERRA COUNTY.

Nuoget.—Downieville *Messenger*, July 20: A nugget weighing 5 ounoes was recently found in Hungrymoutb ravine.

Discovery.—A man named Crawford hae etruck very rich diggings a few miles ahove Poker Flat.

TULARE COUNTY.

Coal and Cinnabar.—Visalia *Delta*, June 25: Botsford and Thomas, returned last week from a prospecting expedition on the eastern slope of the Coast range. They brought with them samples of a bed of coal of great extent, and good quality; also specimens of cinnabar very rich, which will pay largely, if the quicksilver can be separated by mechanical meane.

TUOLUMNE COUNTY.

La Grange Ditch.—Sonora *Democrat*, July 27: The water is running through from its head at Indian Bar to its terminus at La Grange, to tho capacity of 800 inches.

Luce.—Sonora *Independent*, July 27: The Tulloch Quartz mine, at the head of Bear Creek has recently struck rich paying rock.

Nevada.

ELKO COUNTY.

Pensylvania Coal Mine.—Elko *Independent*, July 27: Work is being systematically prosecnted. At 150 ft. the first layer of coal wae struck The coal is of excellent quality. A tunnel will be run to the eastward from tbis lovel, and at the same time work will he continued in the shaft.

EUREKA DISTRICT.

Lanner Cons.—Eureka *Sentinel*, July 20: On the Banner a tunnel has just been started and is in about 20 ft. showing a fine body of rich ore the whole length.

The San José shaft is down 94 ft. and a drift has been run parallel with the ledge 10 ft. The ledge is six ft. wide.

On the New Years claim two shafts have been put down on the ledge, which is about 3½ ft. wide carrying extraordinarily high grade milling ore.

The Charlestown has a shaft 35 ft. deep, showing 4 ft. of ore. The ledge hae steadily increased in width from the surface to the present depth.

The Dannbe is being opened by a tunnel, which has penetrated the mountain over 25 ft. The ledge is 5 ft. wide.

The Republic has two shafts, besides several ents and drifts, which discloee a magnificent body of ore.

Louisville Cons is developing satisfactorily. Some exeellent ore is being raised whicb assaye on an average about $200 per ton.

Ruby Hill Tunnel.—Tbe tunnel is in over 100 ft. Another shift of men are to be immediately employed and the work driven with all possible dispatch.

Good Ore.—Supt. Copp, of the Magnolia Co. lately delivered at the Phenix furnace a lot of abont 40 tons of ore from the Newport which yielded at tha rato of $102 per ton.

The New Furnace of the Silver West Con. will soon be in readiness to start np.

Phenix.—The reduetion works aro running satisfuctorily, and turning out clear profit abont $18,000 worth of bullion daily.

Eureka Con.—This Co. is erecting two sets of hoisiting works on Ruby Hill. The mine never looked eo well, and two of the furnaces are in full blast.

New Mines.—In the Pittsburg tunnel of the Pittshurg Co. a body of antimonial silver was recently developed, which assays as high as $1,800 per ton. One of the mines of tbe Co., the Rose Murdock, erops out boldly for over 2,000 ft.—the ore assaying on a general average ahont $87 per ton. The Lide Horner assays $74 per ton in silver.

ELY DIST.

Bullion.—Ely *Record*, July 21: During the past week W. F. & Co. have shippsd bullion valued at $93,661.14.

Pioche.—The new strike on the 110-ft. level is not looking eo well ae at the time of our last review. Pulp assaye from the battery during the past week show an average of $200 per ton.

Sterling.—Sinking of shaft progressee steadily, good headway being made. Shows well in bottom, and carries mnch mineral.

Harper.—Have cut tho ledge in weet drift. It shows 2 ft. in width ae far as opened up.

Page & Panaca.—Shaft down 306 ft., and continues. Tbe hoisting machine is in poeition, and ready to start up as soon as the steel cahle arrives.

American Flag.—Mine continues looking exceedingly well in all parte.

Newark.—Everything will be in readiness for the erection of the hoisting worke as soon as the machinery arrivee.

Ivanhoe.—Work is progressing finely, the old shaft being down 200 ft., and the new one 100 ft.

Peavine.—Resumed work on Friday morning.

Condon.—Work on bottom drift continues, and it is in about 10 ft., witb no foot wall yet in sight.

Pacific Tunnel.—From present appearauces it ie expected another ledge will be cnt in a short distance.

Chief of the Hill.—Tracing drift is in 30 ft. Good headway is being made.

Aztec.—Shaft down 60 ft., following vein the entire distance. Ore assaye for tbe paet week average $88 per ton.

Chapman.—Sinking of the shaft is progreseing favorably.

Alps.—Shaft down 163 ft., and sinking progressing ae usual.

Mocking Bird.—Ledge bas a bold outcrop showing it to be full five feet wide. Shaft down some 65 ft., following the hanging wall of the vein, wbich pitches into the hill to the south at an angle of about 70 deg. Vein, 4 ft. wide on an average; walls regular, and casing ehowing it to be a true fisenre vein. The entire vein matter carries mineral, much of it very higb grade.

San Jose Con.—The Justice shaft ie einking on the incline. Present depth of incline 115 ft.; bottom of incline in good milling ore. Will soon commence saving ore for milling.

Huhn & Hunt.—Running the main drift into the hill, and making good progreee. Indicatione in the face of the drift are very favorable.

Amazon.—A vertical shaft hae been eunk 85 ft., from whence a drift has been run north 50 ft., tapping the ledge, which ehows 2 ft. of low grade ore.

Burtol Dist.—Mr. Ordway, manger of the National, ie erecting a furnace 5 miles north of the mine. They have about 500 tons of galena ore on the dump, that ie estimated to net $100 per ton, and the Hercnles hae at leaet 2,000 tone of the same clase ore.

Grey Eagle.—The shaft is down 45 ft., and a conetant improvement ie noticeable in the ledge as sunk npon. Ore from tbe bottom shows an average assay of $167.25 per ton.

HUMBOLDT.

Relief Dist.—Unionville *Silver State*, July 27: In the Central Pacific the ledge is 8 ft. wide, 3 ft. of which is firet-clase or sbipping ore, and the balance average milling ore. A force of 20 men ie employed, and the nnmber will probably be increaeed. The mill commenced crushing on Saturday.

On the West Point, the working force will be increased immediately.

Work will be resumed ehortly on the Alta and Greenstone ledgee.

From the Silver Queen, some very rich silver ore is being extracted.

Occidental.—The Occidental copper mine, San Jacinto Dist., is turning ont rich. The shaft shows a 3 ft. of solid copper ore of a high grade.

Pride of the Mt.—Humboldt *Register*, July 27. Work continues on the Pride of the Mountain. The Co. have 13 men at work, running exploring drifts and tunnels.

REESE RIVER.

Whitlatch Union.—Reese River *Reveille*, July 20: Not looking aa well for eome months past. Breasting continues and a considerable amount of ore going to the mill.

Saratoga.—Work being vigorously prosecuted; mine looks encouragingly well.

Lone Star.—A large amount of very high grade ore has been taken out during the last 6 months. Mine being put in condition to open eome new breasts; some good ore being raised.

Star of Nevada.—Main tunnel progressing into the hill.

Freehold.—New hoisting works operate satisfactorily; a good body of average ore in sight.

Florida.—Prospecting continues in various parts of the mine; hoisting some ore daily.

Semanthe.—Going down on the incline.

Morgan & Muncey.—Looks well, and paying well.

Grove Tunnel.—Some little improvement.

Isabella.—Holds out splendily; lessees doing well.

Saybrook.—The 150-ft. level being driven ahead; some little quartz appears; indications good.

Ironclad.—Nothing doing at present.

Lane & Fuller (Pacific Co.)—Large quantities of ore coming out; large force of men employed.

Manhattan Mills.—This mill is working satisfactorily to both agent and owners, and turning ont immense qnantities of bullion.

Patriot.—Taking out ore steadily.

San Antonio.—The Liberty and Potomac are being constantly worked.

Jefferson Canon.—Johnson & Co., whose first working wae over $900 per ton, bave several tone more in sigbt tbat they are assured will nealy double those figures. About 30 men are employed in the dist.

Overman.—Tbe 1,100-ft. station is fully opened for the drift to the ledge at that level. The drift west at the 1,000-ft. level is 470 ft. and the face is in ledge matter.

Jacob Little.—The ledge in the main tunnel is over 12 ft. in width and showe a fine body of excellent pay ore. The vein is well defined and of the regular Comstock silver ore.

Kentuck.—Daily yield 50 tons from the old fifth and sixth levels. The ore breasts promise to hold out for several months yet. A drift is commenced at the 400-ft. level. The 1,300-ft. level continues full of water.

Woonville.—The daily yield will he considerably increasd next week, in order to supply an additional mill. Tbe ore is paying splendidly.

Sierra Nevada.—Daily yield 45 tons, from the lower mine. A great deal of energetic prospecting is being done.

Sutro Tunnel.—Total length 2,978 ft. The rock is very hard in the face of the tunnel but blasts well. Tbe various air shafts are progressing well.

Buckeye.—Incline being sunk deeper, with good progress. The ore breasts are yielding well and looking excellent.

Knickerbocker.—The 400-ft. station timbers have been put in and sinking the main shaft deeper is actively resumed.

Baltimore.—New shaft down 178 ft.; considerable water is coming in, yet not enough to obstruct operatione.

Daney.—The drift at the 500-ft. level shows improvement.

Caledonia.—The 400-ft. level drift is progressing well and shows excellent indications.

Succor.—No new developments in the mine. New shaft and mill idle.

WASHOE.

Bullion.—Reno *Crescent*, July 20: Amount that passed through Reno for the week ending Friday, July 19th, wae 14,097 lbs.

Local Summary.—Gold Hill *News*, July 17: Belcher.—The ore breasts are all looking splendidly. The main incline is down 497 ft. below the 850-ft. level, and has 34 ft. further to go to connect with the weet drift from the 1,000-ft. level. A drift or gangway east has been run 100 ft. from the incline, which has cut into the ledge and shows very favorable indications for finding ore. The eouth drift at thie level ie being run to connect with this east drift. The yield of the mine for the past quarter wae $1,203,050.

Crown Point.—Daily yield eame as before the cave. The main drift at the 1,200-ft. level, has been cleared of the debris. Tbe cave extende to the 1,100-ft. level, both timbers and ore having settled in placee from that point and the drift closed np. No great damage done to the mine.

Utah.—Operations are confined exclusively to einking the new ehaft on the east side of the vein.

Savage.—Daily yield 180 tons worth $28 per ton. The incline is down 100 ft. bslow the 1,500-ft. level, and making but moderate progress. Tbe ore body struck last week in the sonth cross-cnt of the 1,500-ft. level is not only holding out as the work of prospecting progresses, but ie steadily increasing in assay value.

Silver Hill.—Engaged in sinking and enlarging the shaft. The drift on the 125-ft level has crossed the east ledge. The average of the assaye at thie depth, for a width of 17 ft. is $26.

Hale & Norcross.—Daily yield about 80 tons from npper levele. Prospecting ie carried on in the 1,500 (lowest) level. The main incline is advancing downwards with regularity.

Cone. Virginia.—On the 500-ft. level crossdrifts have been started to the east and west, and a cross-cut is in progress from the end of the drift leading from the 1,116-ft. level of the Gonld and Curry.

Justice.—The water being drained from the main shaft the drift for the ledge at the 400-ft. level is reopened and the ledge will he ent and investigated in about 2 weeks. The ore found in Waller's Defeat ground is of excellent character and pays well.

WHITE PINE.

Ruby Hill—Columbus.—Schell Creek *Prospect*, July 20: The tunnel is in 90 ft., have struck the ledge under the eroppings with a very steep pitch. Tbe ledge matter assayed from $75 to $100. They are in a body of quartz carrying ruby and horn silver.

Tambien.—Looking well and working several men.

Savage.—This mine continnes with fine prospects; will start with a force of men next week.

Ajax.—The mine is looking well and prospects better than ever.

Gallagher.—Work has progressed on this rich claim during the week. Ore assays have gone as higb as $248.

Henry Mine.—Improves steadily as work progresses. Assays show about 70 per cent. lead, and $60 to the ton of silver.

Schell Creek Mine.—The eroppings are nearly 200 ft. in width mixed with limestone and quartzite. About 8 tons of good milling ore taken out. The tunnel is in abont 130 ft. They struck quartzite at a distance of 125 ft. which shows indications of silver. They are working three shifts of men and pushing the work ahead vigoronsly. They expect to strike the ledge within 20 ft.

Silver Canon Dist.—We were shown some rich specimens of ore from tbe Clayton. There are 5 men to work and the mine is improving daily. There is a quantity of ore on the dump wbich will mill $500 per ton.

Treasure Hill Mines.—Treasure.—White Pine *News*, July 20: The open cut has been connected with the lower tunnel, showing good ore, wbich is being shipped to the Big Smoky mill. Tbe Wheeler tunnel ie in about 300 ft. with good indications of striking ore. Assays from the spar eeams average $50. Tbe lower tunuel is furnishing a rich and large lot of ore. Working 65 men.

Beecher Con. M. ann M. Co.—The south end is being worked with 45 men. The Ward Beecher (proper) is taking out about 30 tons of good ore daily and shipping to mill.

Silver Wave.—Will commence shipping rock to the Swansea mill next week. A fine body of ore has been struck in the Boswell works.

Eberhardt and Aurora Co's Mines.—The largest breast of ore in the De Pass chamber is increasing in width. The deposit ie of great richness, and promises continuance.

Silver Plate.—Four new openings are being made. Very little change in the appearance of the ore.

Pennsylvania.—A decided improvement in vein matter since our last report.

San Juan del Rio.—The contractors are down 65 ft., on a body of fine ore. The Co. contemplate building a mill ae soon ae tbe mine is thoroughly opened.

Noonday.—Taking out good ore from tbe surface worke.

Sunbeam.—Working 5 men. A wagon road has been built to the mine. Mine looking splendid, and there is a good lot of ore on the dumps, which will average $100 per ton.

Pogonip and Othello.—Conciderable work is being done upon these minee. The ore-body is improving in extent, with a fair prospect of the quality increasing in value.

Mammoth.—Looking well, and a large force of men employed. Large body of good milling ore in sight.

South Icenebo.—Jim Logan is having 70 tone of fine ore worked at the Big Smoky.

East Sheboygan.—Ore of a high grade hae been broken down from the ore chamber.

Copper Glance.—The north shaft and west drift is being pushed ahead by the contractors. Ore of a very good grade in each.

Outside Dist.—Schell Creek.—Many of the principal mines are being opened, and others making preparations for vigorous working.

Troy.—The mines are looking well, the ore being of a good quality.

Mills—International.—Running 60 etamps on ore from the Eberhardt & Aurora Co.'s mines.

Manhattan.—Running steadily on ore from the Beecher Con. M. & M. Co.'s mines.

Big Smoky.—The full number of stamps ie running on O. H. Treaeure ore.

Swansea.—Shut down for repairs; bnt will probably etart on Monday on Silver Wave ore.

Arizona.

Mines and Mining.—Prescott *Miner*, July 13: The Vulture Co. are running 20 stampe. At Weaver, a party of miners are making considerable money by crushing free gold ore in an arastra. Fred Henry is preparing to sink on a lode there.

Colorado.

Ætna.—Colorado *Miner*, July 11: Marsh & Gilchrest are working the Ætna lode, on the west slope of Griffith mountain. The crevice is wide, and carries an ore vein of from 8 inchee to 2 ft. in width. The ore is galena, zinc blende, and a grayish white quartz; in places the mineral is found aggregated in bunchee, often very rich and somewbat decomposed. A lot of one-half a ton was sent to the Swansea works, a few daye since, and a returu of $415 wae realized. A continnoue ore vein has been found wherever any work has been done.

The Economic Value of Certain Australian Forest Trees, and their Cultivation in California.

[Delivered before the Academy of Sciences by ROBERT E. C. STEARNS.]

Australian foreet trees propagated from the seed, with perhaps a few excepti one, thrive remarkahly in California; the climate and eoil appear to he nearly or quite ae favorahle to the growth of these exotic as of the native forest forms.

In many of the priucipal towns in this State, especially in and around San Francisco, in the neighhoring city of Oakland and adjoining towns on the easterly side of San Francisco bay, fine specimens of many of the Australian forest species are exceedingly numerous. The most popular of these helonging to the genera *Acacia* and *Eucalyptus*, have been planted for ornamental and shade purposes; the light feathery fern-like foliage of some of the Acacias, tbeir gracefulness, heauty and color combined with rapid growth, present so many advantages as to fairly entitle them to popular esteem. Of the Acacias recommended by Dr. Mueller on account of their economic value, I am not aware of any heing cultivated in this State for that ohject. *A. decurrens* (A. mollissima) also *A. lopantha* and some other epecies, are frequent, and highly prized for ornamental purposes; from twenty to thirty species are euumerated in the catalogues of the principal nurseries.

The many valuahle properties of the species mentioned, combined with rapidity of growth, would warrant cultivatiou on an extensive acale, which if judiciously conducted would he highly advantageous to the State and yield a handsome return upon the capital invested. Mueller says that the wood of *A. decurrens*, properly known as the "Black Wattle or Silver Wattle," can he used for staves, but its chief use would he to afford the first shelter, in treelees localities, for raising forests. Ite hark rich in tannin, and its gum not dissimilar to Gum Arabic, render this tree also important.

A. Homalophylla,

Has a "dark hrown wood, is much sought for tanner's work on account of its eolidity and fragrance; perhaps its most extensive use is in the manufacture of tobacco pipes."

A. melanoxylon "ie most valnahle for furniture, railway carriages, boat building, casks, hilliard tahles, pianofortes (the sound-hoards and actions) and numerous other purposes. The fine-grained wood is cut into veneers. It takes a fine polish and is considered equal to the hest walnut." Under favorahle circumstancee it attains "a hight of eighty feet with a stem several feet in diameter." This species requires a deeper and moieter soil than *A. decurrens* and *A. lophantha*, which are especially recommended for their ability to resiet drought, and therefore particularly applicable to treeless and sterile areas in the southern part of California, and the adjoining country, where the temperature does not decline below 10°.

The peculiar yellow displayed in the China silks and other articles, is obtained from the yellow flowers of a species of Acacia, and of an exceedingly permanent character.

The Acacias are easily propagated from seed, as I have (with some species) practically tested; and it is not unlikely that the flowers of most of the species, which are yellow, might he equally as valuable for the dyer, as the variety cultivated or nsed by the Chinese.

Of the *Eucalypti*, *E. globulus* is very common in California, and easily cultivated; it is the Blue Gum of Victoria and Tasmania. "Tbis tree is of extremely rapid growth and attains a hight of 400 feet, furnishing a first-class wood; shiphuilders get keels of this timber 120 feet long; besides thie they use it extensively for planking and many other parts of the ehip, and it is considered to he generally superior to American Rock Elm. A test of strength has heen made between some Blue Gum, English Oak and Indian Teak. The Blue Gum carried fourteen pounds weight more than the Oak, and seventeen pounds and four ounces more than Teak, upon the square inch. Blue Gum wood, hesides for ship building, is very extensively used by carpenters for all kinds of outdoor work, also for fence rails, railway sleepers —lasting ahout nine years—for shafts and spokes of drays, and a variety of other purposea.

Rapidity of Growth.

Of the rapid growth of this species of Eucalyptus and the facility with which it is propogated, most people in California who have had any experience with it are familiar; but as perhaps few persons who have specimens of it growing upon their grounds or in their yards are aware of its value otherwise than for ornamental purposes, I have deemed it a matter of interest as well as of importance to quote from Dr. Mueller's valuahle paper. Having propogated the Blue Gum from the seed and raised may specimens under not particularly favorahle circumstances, I can indoree the remarks of the author from whom I have quoted. An instance of rapid growth immediately under my observation, is that of a specimen purchased by me of a nurseryman, which at the time of planting (Jan. 5, 1871) measured from the ground level to the extreme tip six and one half feet, and in ahout eleven months (Dec. 8, 1871) had reached a hight of a trifle over fifteen feet; the diameter of the stalk when set out was half an inch, and at the final measurement one and three quarters inches. I am prepared to hear of inetances far exceeding my figuree, hut it ehould he horne in mind that we had very little rain after this tree was planted, and furthermore that the locality was upon nearly the highest ground in Petaluma. This tree was occasionally, but only moderately watered during a part of the time. Other trees of thie speciee planted at the samo time, also made a remarkable growth; apecimens raised by me from the seed, whose growth I bave uoted, ehow a gain of ten and a half inches in twenty-one days, or half an inch per diem.

Tbe development of the lateral branchee is as surprising as ite perpendicnlar growth.

George C. Potter, Esq., of Oakland, informe me that specimens upon hie grounde nine years old, show a diameter of twelve inchea.

Of the large plantation of Eucalyptus of the Blue and Red species made a few years ago hy Mr. J. T. Stratton, of Alameda, I hear indirectly that the trees have done well. I hope at a future meeting to be ahle to learn from Mr. Stratton, and inform the Academy more definitely of the euccees thus far, and prospects of this highly commendahle and important enterprise. The many

Valuable Properties.

Of the Eucalyptus attracted the attention of the French Goverment several years ago. A specimen in the Jardin d'Acclimation at Algiers, excited the admiration of the Emperor while on a visit to that place, and upon measuring the tree it was found, according to the Paris *Moniteur*, to have made "a hight of 30 feet and a diameter of six inches in two years." Since that time it has heen extensively cultivated in Algiers, and of late it has been stated that it "is making rapid progress in the south of France, Spain and Corsica, especially on account of its alleged virtues as a remedy for fever. It furnishes a peculiar attractive matter, or alkaloid, called Eucalyptine, said hy some to be as excellent a remedy against fever as quinine.

In Spain its efficacy in cases of intermittent and marsh fevers has gained for it the name of "fever tree." It is a powerful tonic and diffusihle stimulant, performs remarkahle cures in cases of chronic catarrh and dyspepsia, is an excellent antiseptic application for wounds, and tans the skins of dead animals, giving the fragrance of Russia leather. The tree prefers a marshy soil in which it grows to a great hight very rapidly. It driee the earth under it by evaporation from its leaves, and sheltere it from the sun, thus preventiug the generation of marsh miasm."

Of the medicinal properties of *E. globulus* we have additional testimony in a recent number of the Practitioner, where Dr. M. C. Maclean relates the results of his experiments on patients in the Hospital Wards at Netley, England. He says in connection with certaiu cases of chest aneurisms and cardiac asthma, "With the exception, perhaps of the subcutaneous injection of morphia, I know no remedy so efficacious in allaying pain, restoriegdyspnœa, calming irritation, and procuring sleep in such cases, as to be compared to *E globulus*. He also refers to the use in Germany of a tiucture made of the leaf, which "has been used successfully in 3ij doses in the treatment of intermittent fevers. It appears that it is not only used medicinally in form of a tincture, but also that cigars are made frome the leaves, and its palliative influence obtained by smoking.

"German physicians, as appears from medical journals, have fouud a tincture of the leaves of the *Eucalyptus globulus*, or Australian gum-tree, to he a remedy for intermittent fever. Dr. Lorimer gave it to fifty-three patients, of whom forty-three were completely cured. In five othera there was a relapse, owing to a failure in the supply of the tincture. In eleven of these cases quinine had heen used without effect, and nine of these were cured by the *Eucalyptus*."

Other species of the Eucalypti, of great value and well worthy of consideration, are recommended by Dr. Mueller.

E. Amygdalina,

Labill, which is sometimes met with 400 feet in hight; one specimen in the Dandenong ranges measured 480 feet, surpassing in altitude the gigantic Sequoias of our own State; the wood of this species ia said to be well adapted for "shingles, rails, housebuildings, for the kelson and planking of ships, and other purposes;" in rapidity of growth it equals the *E. globulus*, hut is not so easily satisfied with any soil.

E. diversicolor, *F. v. Mueller*, a native of S. W. Australia, sometimes reaching 400 feet in hight, with a proportionate growth of stem. The timber is excellent, and young trees are reported as doing well even "in dry, exposed localities in Melbourne." It is regarded by Dr. Mueller as a valuable shade tree for avenues, as it makes a dense growth.

The Eucalyptus citriodora, *Hooker*, a native of Queensland, "combines with the ordinary qualities of many Eucalypts the advantage of yielding from its leaves a rather large supply of volatile oil of excellent lemon-like fragrance."

E. gomphocephala, *Candolle*, grows to a height of "fifty feet, wood close grained, hard and not rending."

Eucalyptus marginata, *Smith*. "The Jarrah or mahogany tree of S. W. Australia, famed for its indestructible wood, which is attacked neither hy Chelura nor Teredo nor Termites, and therefore so much sought for jetties and other structures exposed to seawater, aleo for underground work, and largely exported for railway eleepers. Vessels built of this timber have been enabled to do away with copper-plating. It is a very strong, of a close grain and a slightly oily and resinous nature; it works well, makee a fine finish, and is hy shiphuilders here considered superior to either Oak, Teak, or indeed any other wood." The tree does not grow as rapidly as the Blue Gum in the neighhorhood of Melbourne, but Dr. Mueller expresses the opinion that it would make a rapid growth in a more favorahle locality.

The E. Rostrata.

Schlecht, the Red Gum of Victoria, is a very valuahle speciee for the "extraordinary endurance of the wood underground, and for this reason highly valued for fence-poste, piles and railway sleepers; for the latter it will laet a dozen years, and if well selected much longer. It ia also extensively used by shiphuilders, for mainstem, sternpoet, innerpoat, deadwood, floor timbers, futtocks, transoms, knightheads, hawsepiecee, cant, stern, quarter and fashion timber, bottom planks, hreasthooks and riders, windlass, bowrails, etc. It ehould he ateamed hefore it is worked for planking. Next to the Jarrah, from W. Australia," this is the best wood for resisting the attacks of eeaworms and white ants. This species reaches a hundred feet in hight, which ie also the hight of the next and last of the Eucalypti referred to herein, viz.: E. SIDEROXYLON, *Cunn.*, which produces a wood of great strength and hardness, and desirable for carpentere, shiphuilders, and wagonmakers, heing suitahle for wheels, treenails, helaying pins, and ia considered the strongest wood in the colony; also valuahle for railway sleepers, underground work in mines, etc.

The wood of the Gums is "so soft at first as to render the feeling, splitting, and sawing up of the tree, when green, a very easy process, but when thoroughly dry hecoming as hard as oak.

When we consider the fact of the great number of farms in California that are nearly or wholly destitute of wood, and the great and continuous expense entailed by our eystem of fencing, the importance to the farmer of dedicating a portion of his land to the cultivation of forest trees, from which he can ohtain fuel, and fencing materials, is too palpahle to admit of dehate. The comparatively small expense and labor with which the cultivation of a few acres for the purposes I have named is attended, its absolute feasibility and practicability, with the heneficial results that would flow therefrom, ehould commend itself at once to every farmer, as a few acres of timher land for economic purposes would add much more than the cost to the cash value of a farm. The boundaries of a farm should be marked hy a row or rows of trees, thus defining its limits hy living monuments, and greatly adding to ite heauty—from theee rows as the treee advance in growth and age, some wood could he cut, and where the farm is of considerable size, enough in the way of trimmings or prunings to supply the fuel of the house. In the treeless areas of tbe southern part of the State, the varieties of the Acacia ahove named would prove an important aid iu assisting by their protection the planting of other species of timber; as they are easily taken care of and will stand excessive drouth. They would also he useful as is our Monterey Cypress, *(Cupressus macrocarpa)* for belts to break the force of the winds in exposed places, and it is to be hoped that hefore many years, timher helts for this purpose will he common wherever the coast winds prevail, as a protection to orchards and vineyards.

Our Native Trees.

We have many native trees well adapted for timber or wind-hreaks, and while calling the attentiou of land owners and others to the exotic forms ahove mentioned and their special qualities as enumerated in Dr. Mueller's excellent paper, I do not wish to he understood as making an unfavorahle comparison as against indigenous species, as for some of the purposes mentioned they will answer equally well.

It must he remembered, however, tbat our foreats are unfortunately deficient in many of the hardwoods much naed in the arts, and which we are now compelled to import from localities more favored in this respret. The aggregate amount annually sent out of the State for the purchase of thia material could hy proper foresight and enterpriee, in a few years, he retained within our own horders, and here expended in the estahliehing of new industries pertaining to the very material, the manufacture of which in other portions of the Union employs large communitiea, to whose support we are now contributing.

As in Germany to anticipate a future need our own *Sequoia pervirene* or Redwood tree is extensively cultivated, so here by the cultivation of the Australian Eucslypti we can in a few years aupply a positive want, and reap the advantages ahove indicated.

Since the reading of the ahove paper I have had many questions asked me by persons not present at the meeting of the Academy, and as an answer to said inquiries and to various propositions I have added the following:

Planting and Trimming.

Some objection has been made to the Acacias and Eucalypts hy persons who have planted them for shade or ornamental purposes in the neighhorhood of San Francisco, for the reason as alleged that they do not withstand the winds. So far as the observations of myself and others who have investigated the matter extend, it is really surprising that so few are proetrated. The fault is not with the trees hut the purchasers; as treee of from four to eix feet in hight are sold at a low price, they are hought by partiee who require only a few, in preference to smaller trees, as they make a greater immediate show. As most of the growth of the trees as uenally purchaeed, after having attained a hight of six inchee, has heen made in the pot or box in which they are sold hy the dealers, it will he readily perceived that the tap-root which in a natural state descende, ie diverted from a perpendicular into a rotary direction, analogous to a epiral spring, and is also crossed and recrossed on itself—with the liahility as it increasee in size to atrangle the tree by one portion of this root making a short-turn or twist upon another part of the eame, or hy heing wound ahout and restricted by the lateral roots. It is therefore apparent that the hetter policy would be, even where only a few trees are wanted, (and thie remark appliee with eqnal pertinence to all trees) that other thinge heing equal, euch as comely ahape and healthy condition, the younger and smaller trees are really cbeaper at the same price than the larger, and can generally he obtained for much lees. For foreet culture the smaller trees are indispensahle to success.

Again it is frequently the case that the lower branchee are trimmed off to a mischievous extent, which also ie a mistake; for where a tree has eufficient space to grow in, but little trimming ie neceasary, and it is a false taste which seeke to improve (?) upon nature by depriving a tree of its normal physiognomy and distinctive character by carving it into grotesque or inappropriate shapes; it is aimply mutilation, and is certain to result in the premature decay and death of the victim. The flattening of the head hy certain ahoriginal trihes, and the distorted feet of the fashionahle Chinese ladies, are further and pertinent illustrations of analogous hideous violations of natural form.

In compliance with my request to Dr. Arthur B. Stout, of this city, for a relation of his experience with the Eucalyptus in connection with his medical practice, I have received the following:

MR. STEARNS:

Dear Sir: In response to your invitation, I am happy to contribute to your important article on the culture and uses of the Eucalyptus in California, my experience of the medical properties of that valuable plant. The Eucalyptus is not lees precious for its medicinal virtues than it is ornamental in arhoriculture and useful in the arts. Several months ago, incited hy information derived from the *Practitioner* and other sources of knowledge, I collected and dried the leaves. The agreeable empyreumatic oil of the leaves, in evaporating, diffused a halmy odor through the house. I therefore considered that as this oil, as well as the catechu gum and kino, and the cajeput oil, are all similar hydrocarbons, their qualities must reeemble the creosote, pyroligneous and carholic acids in their disinfectant and hygienic propertiea. I have no douht that Eucslyptus has theee properties in a milder or weaker degree, only differing in being accompanied with an agreeahle perfume, wanting to creosote and carbolic acid. As a purifier, therefore, of the musty atmosphere and unpleasant emanatious in hasements and cellars, I have recommended the scattering of the dried leaves in such places. The powder of the dried leaves acattered in trunks and among clothes will no douht he as useful and more agreeahle than tobacco or camphor to prevent the growth of moths or other inaects.

Medicinal Value.

Its chief value ie, however, as a sedative and antieeptic in asthma and throat diseases, nasal catarrhs, and affections of the mucous membranes. To utilize these properties I had a concentrated tincture with alcohol at 95° preprepared by Messrs. Steele & Co., and also contrived an inhaler with which to introduce the vapor of the essential oil to the throat and lungs. I can teetify to the excellent effect of this mode of medication. The paroxisms of chronic asthma are relieved and shortend, and acute attacks are quickly allayed. The inhaler is a simple instrument made of tin. It is a cup of a capacity of 4 fluid ouncee; the lid, attached hy a hinge, has a tuhe from the centre ahout three inches high, bent near the end at a right angle, and terminated with a mouth piece like that of a epeaking trumpet. The cup is on legs so that a spirit lamp may be placed underneath, and has a wooden handle to move it ahout when heated. Put two ounces of boiling water, (4 tahlespoonfuls) in the cup; add one tablespoonful of the tiucture; and inhale the vapor, while the fluid is kept gently boiling with the spirit lamp. Again, I had prepared cigarettes with the coareely powdered leaves. These produce a decidedly anodyne and antispasmodic effect. An agreeable ayrup may aleo be prepared, useful in infantile maladies.

There can he little doubt hut that the oil of Eucalyptus, and Eucalyptine when it can be procured, will be available remedies against malarious diseases of all typee, and that the presence of the trees, cultivated in gardens, contribute to sanify the atmosphere from those emanations which give origin to epidemic diseases. That the parasitic insects which infest other plants do not relish the Eucalyptus is evident from the general cleanness of the leaves and the fact that the hydro-carbon oils are fatal to animal life. The balmy perfume, therefore, that exhales from them, must have an influence in destroying the parasitee which frequent shruhs growing in their vicinity, tending to diminish if not suppress them.

Its General Acclimation.

Iu corroboration of the advantages to be obtained by the cultivation of this Myrtacea, may be shown the efforts made during the last fifteen years to acclimate it in Europe and elsewhere. Ramel hae euceeeded admirahly in introducing thie tree in Provence (France), in Spain, Italy, the islande of the Mediterranean eea, and in Algeria. It appears in the botanical gardens of Germany (Munich); and in Vienna, Austria, an apothecary, Lamaleh, has

raised 3,000 specimens from seeds. From these he has prepared tinctures and oils for medical purposes.

See annual report of Wiggon and Husemann of progress in Pharmacy, etc., Gottingten, 1871.

By the assidnity of Dr. Pigns-Dupnytreu, this tree has been carefully cultivated in the garden of the French Hospital of the Mutual Benevolent Association. So, that institntion enjoys already the bcnefit of the tree hygienically, and has its supply of leaves for tinctures and syrups. The leaves steeped in boiling water are also nsed as a ptisane or beverage.

However obnoxious to parasites in general this tree may be, it appears it nevertheless has its own species in the Psylla Eucalypti. This insect is an Hemipteron, and appears on the Eu. dumosa. It deposits a species of manna, called in Australia *Lerp* or *Luap*. It is a white substance, 53.1 per cent. of sugar syrup and 46.9 p. c. of a s pecial modification of starch. This is prized by the inhabitants as a Manna; and is greatly sought for by the bees, who convert it into honey. Dobsou (entomology) describes it as the cup-like coverings of the Psyllidæ, but Wittstein mentions six varieties of Psylla, and that one species produces a colored Lerp handsomer than the white, but as a deposit beneath the cup like shields of the insect.

See same annual, Göttingen, 1870.

If this insect derives his Lerp from the aromatic and balmy oil of the Eucalyptus, and furnishes an agreeable aliment for the inhabitants, and a Mt. Hymettus-like honey stuff for the bees, certainly the busy little insect manufacturer, parasite as he is, may be freely pardoned. Very respectfully yours,

A. B. Stout, M. D.

From experiments recently made upon myself, I find that small doses, 3 ij to 3 iij, of the infusion of the leaves (of young trees) drank when cold, quiet the nerves and induce sleep; quite likely, in ordinary cases of wakefulness, a pillow stuffed with the leaves would produce the same result. My friend, Dr. Kellogg, has prescribed the infusion in dyspepsia, and reports favorably. In addition to the many valuable properties of the Blue Gum herein recited, I have no doubt but camphor in considerable quantity can be obtained from it.

Useful Information.

Correcting Echos in Large Halls.

We clip the following from the Bloomingtou, Ill., *Pantagraph*. "On Mouday we took some observations in the court-room for the purpose of ascertaining the effect produced by the wires stretched across the room, for benefitiug the acoustic properties of the same. Most of our readers are aware that it has hitherto been a subject of remark, and noticed by every one, that it was almost impossible to hear distinctly in the body of the court-room what was said in an ordinary tone of voice within the bar. This is now remedied. Mr. W. S. Carlock suggested that the stretching of small wires at a proper hight and at suitable distances would be of great benefit. This has been tried, and the effect proves to be a vast improvement.

"We entered the room, Monday, while Mr. Ewing was addressing the jury in an ordinary and easy conversatioual tone of voice, and found no difficulty in distinctly hearing every word. We tried in various places from the remote corners to the center, and fouud it about the same. It appears to be a success. The theory is that the wires, although so small as to be hardly visible, break the sound waves, and prevent the reverberation which has hitherto been the chief obstacle and annoyance to listeners. Only three or four wires crossing the room each way produce this improvement."

We invite all who have occasion for it, to verify this experiment and communicate the result to us, for the benefit of those readers interested in this matter.

Linseed Oil.—Linseed oil is made from the seeds of the flax plant (formerly called lintseed), by grinding them in a mill, and pressing the powder by hydraulic or other power. When first pressed it is of a golden yellow color, but soon collects impurities from the air and turns brown. The impurities can be washed out by stirring water into it thoroughly, and leaving the water to settle. It contains no stearine, and hence does not congeal ata low temperature. Its chief use is in decorative and preservative painting. Being mixed with the powdered colors, and spread on wood, stone or iron with a brush, it soon dries and hardens into a coating which acts as cement, varnish, and shield from weather. To quicken ita drying it is often boiled before using. It is sometimes used in medicine as a laxative, and for this purpose is made from the raw seed without roasting. It is quite an important article of commerce.

Longevity in Ecuador.—In the mountain town of Coxamarca, in the year 1862, there were seven persons—one of whom was then 114 years old, one 117, one 121, one 131, one 132, one 141, and the seventh had reached the extreme age of 147 years. One of these patriarchs at his death left 200 descendants to mourn his untimely end.

What is Arsenic?—It is not yet settled among chemists whether or not arsenic is a metal; it is not absolutely known whether it is not itself a compound; the elements of it, if it is a compound, are of course not known.

Gas Swindling.—In alluding to the miserable quality of gas usually supplied to consumers, and the high price generally charged for it, the *Journal of Applied Chemistry* says:—"The custom of paying for gas by the cubic foot, is like buying all cloths at a uniform price per yard, without any question as to the fineness of the wool. No one would like to pay as much for shoddy as for cassimere, and yet shoddy gas is the principal article now furnished to customers, while the price actually paid calls for the best gas that can be made. It is really surprising that a monopoly of such a monstrous character should be permitted to maintain itself so many years in an enlightened community. The city companies should be compelled to furnish gas of a prescribed density, and fixed candle power. Some of the London companies pride themselves on keeping up the illuminating powers of their gas to the maximum standard of fifteen candles.

Besides the loss to the consumer in the amount of light afforded by a poor gas, there is another difference which tells in favor of the company. Assuming the specific gravity of poor gas to be 5, and that of rich gas to 750, the former will pass through the burner much faster than the rich, and increase the bills of the consumer from 30 to 50 per cent., without any correspondent increase in the photometic power of the gas."

From all this it would seem certain that there ought to be a fixed municipal standard, say fourteen or fifteen candles, prescribed by law, and an inspector appointed to see that the companies comply with it; and in case of any breach of coutract, a heavy penalty should be imposed. Let us be no longer intimidated by the bugbear of a paternal government, but insist that swindlers who rob the poor, in order to divide 100 per cent. dividends, shall be baffled and punished.

Sawing Wood Without a Saw.—Dr. George Robinson of New York, say *Moore's Rural*, has invented a process of cutting wood by passing a galvanic current over a platinum wire in sufficient quantity to raise its temperature to a red heat. He has found that gently pushing a piece of wood against a red-hot platinum wire, especially when aided by a slight sawing movement, the wood was divided in any required direction as by a handsaw, and, of course, without any effort of skill or appreciable expenditure of muscular power. The *Scientific American* says: "By arranging the wire with handles or other means, so as to guide it readily, the lumber, whether in trees, logs, or planks, may be cut easily as desired. There is here, therefore, a simple and easily applied force, which, in a child's hands, my be employed to fell trees, divide them into logs, and, in short, perform all the operations of the saw and the ax. The surface of the wood where thus divided, is, of course, slighty charred, bnt the black layer is very thin, and for many purposes not disadvantageous, as it is known to preserve timber. The battery employed need only be of the simplest character, as quantity, and not intensity, of current is required."

Marvels of the Insect World.—The *Spectator*, in its notice of M. Touchet's work, "The Universe," says: "Man generally flatters himself that his anatomy is about the highest effort of Divine skill; yet that of the insect is far more complicated. No portion of our organism can compare with the proboscis of the common fly. Man can boast 270 muscles. Lyonet, who spent his whole life in watching a single species of caterpillar, discovered in it 4,000. The common fly has 8,000 eyes, and certain butterflies 25,000. M. Touchet treats it as an established fact that so fine are the sensory organs of ants that they converse by means of their anteunæ. Consequently the strength and activity of insects far surpass ours in proportion. In the whole field of natural science there is nothing more astounding than the number of times a fly can flap its wings in a second; it must in that point of time vibrate its wings five or six hundred times. But in rapid flight we are required to believe that 3,600 is a moderate estimate."

Varnish to Protect Polished Metals from Rusting.—Dr. C. Pascher recommends the use of a solution of paraffine (one part by weight in three parts of petroleum) as a varnish, which may be usefully applied to polish metals, especially as, after having brushed this liquid over the surface of the metals, they may be gently wiped clean with a soft piece of flannel, so as to leave only a very thin film of the varnish, yet sufficient for the protection of the polish.

Why Colored Persons Stand Heat Better than White.—It is alleged that colored peraons are never sunburned because the dark color of their skin absorbs the heat and conveyait into the system, so that it is converted into sensible heat, producing perspiration. But the white skin does not absorb the heat; the sun's rays therefore rest upon and burn it.

Non-inflammable Fabrics.—Carteron and Rimmel have taken out a patent in England for the use of acetate of lime and chloride of calcium for rendering goods non-combustible. Equal weights of each are dissolved in twice their weight of hot water.

Pulverizing Camphor.—If a few drops of Castor-oil be added to the alcohol employed, in the proportion of 1 to 24 or 30, the camphor is much more easily reduced to powder.

Good Health.

Effect of Arsenic on the Human System.

The first effect of arsenic when administered is local. It is classified as an irritant, bnt not a corrosive poison—that is it inflames the parts it comes in contact with, without destroying or softening or perforating them; the local effects thus first produced cause local symptoms; these appear generally in an hour after the poison has been swallowed. They are: burning pain in the stomach, which, as the poison passes down, extends along the intestinal tract. It increases in severity, is accompanied by great thirst, dryness and constriction of the throat, vomiting and purging.

The matters vomited are dark, bilious and offensive. By this time more or less of the poison has become absorbed; it enters the blood and produces a second class of symptoms called remote, the action being apparently mainly upon the blood corpuscles; these symptoms are characterized by great prostration of strength, anxiety and depression of mind, a peculiar lividity of the face, a blue line under the eyes, the intellect being as yet unaffected and the mind clear; death may ensue at this stage of the action, due to the prostration; usually takiug place under these circumstances, in from one to eight days.

If life be continued, the effect of the arsenic is apparent upon the nervous system and brain; stupor, passing into profound coma, may develop itself in case the action is primarily upon the brain, delirium and convulsions, passing into tonic spasms, in case the spinal cord is also involved, may precede death; all of these symptons may not be present in any one individual; the patient may recover from all these symptoms, which may be called primary, and may die from the secondary effects of the poison years afterwards.

White arsenic, when taken into the stomach, is dissolved both in the stomach and intestines by the gastric and intestinal juices; spread out upon the posterior surface of the intestines, is a set of blood vessels which compose what is known as the portal system; the arsenic thus dissolved passes into these blood vessels through their walls; these vessels unite, thus forming the large trunk known as the portal vein, which empties itself directly into the liver, so that this organ is not only more fully supplied with blood than any other, but it is supplied with blood charged with arsenic from the intestines; hence the liver is more likely to contain this poison than any other organ. It passes from the liver into the general circulation, and thus produces its remote effects. Most probably it does its fatal work on the blood itself, disintegrating the blood-corpuscles, thus rendering the blood unfit to perform its functions.

From 2½ to 3 grains of arsenic would kill an adult; less quantities than that have been fatal; and more has been taken without producing death. Arsenic would not probably be found if death ensued from the secondary effects. Persons have died from the primary effects of arsenic in eight days, and no trace of the poison has been found in the body on analysis. Constriction of the throat, when arsenic is taken, occurs in from one-half hour to an hour ordinarily.

The effect of arsenic on the heart and lungs is as follows: The pulse during the great prostration is generally small and rapid, and sometimes, when the prostration is very great, the pulse is less rapid than usual; the respiration is difficult, requiring a voluntary effort to breathe; it is sometimes quick and sometimes slow; the action of the poison on the lower intestines is to produce tenesmus; i. e., straining without result; inflammatory action produces a dry and hot skin at the first stages; during collapse the skin is cold and clammy and sometimes moist; the inflammation causes dryness and a folding up of the mucous membrane; there is also more or less faintness; sometimes entire syncope; purging may be wanting; convulsions are exceptional; the same is true of delirium.

Persons have been poisoned by rubbing arsenic on the head; the article that has produced it, is called Fowler's solution. Persons are also known to have died from sleeping in rooms papered with arsenical green.

Asparagus for Rheumatism and Gout.—A medical correspondent of an English journal says the advantages of asparagus are not sufficiently estimated by those who suffer from rheumatism and gout. Slight cases of rheumatism are cured in a few days by feeding on this delicious esculent, and more chronic cases are much relieved, especially if the patient carefully avoids all acids, whether in food or beverage. The Jerusalem artichoke had also a similar effect in relieving rheumatism. The heads may be eaten in the usual way, but tea made from leaves of the stalk, and drank three or four times a day, is a certain remedy, though not equally agreeable.

Wash for Sunburn.—Take two drachma of borax, one drachm of Roman alum, one drachm of camphor, half an ounce of sugar candy, one pound ox-gall; mix and stir well for ten minutes or so, and repeat this stirring three or four times a day for a fortnight, till it appears clear and transparent. Strain through blotting-paper, and bottle up for use. It is said that strawberries rubbed over the face at night will remove freckels and sunburn.

Instinct of Appetite.

It is nearly always best to consult the instinct or appetite as the kinds of food children eat. The quantity needs to be guarded far more than the quality. Where there seems an overweeing desire for a particular dish, it may pretty generally be presumed that some element in it is required by the child's system, and it is better to gratify it even to what may seem an intemperate degree than to unduly restrain it. When the system is fully supplied with the constituent it needs, it will cease to turn greedily toward it.

Dr. Hall's injunctiou is, "never in sickness or health to force your children (or yourself) to take ons single mouthful of food or drink that they do not like." This is against very much of our common practice, and whether or not it be a fact that such a rule should have no exceptions, there can be no doubt that in general it is much safer than the more arbitrary method. It does not, by any means, sanction the giving of a sick child everything it does like, though even if this were done in minute quantities the danger probably would be less than in stuffing it with that for which it has an aversion. In sickness there is often a morbid appetite, which craves more food than can safely be allowed, but a morbid appetite and a prevented one are different things. Most of us can recall occasions when a much craved but forbidden dish justified our instinct by proving really beneficial in spite of being surreptitiously obtained. "Begin by taking a little at a time of what is so urgently craved, and feel the way along to an amount which nature can bear."—*Ohio Farmer.*

Death From the Bite of A Skunk.—Mr. N. Douglass, of Kassel, Kansas, recently died from the effects of the bite of a skunk. On the 13th of June last, he complained of an unpleasant sensation in his thumb, which he at first thought was the incipient stages of a felon; but, on consultation with a physician, he subsequently referred it to the bite of a skunk which made a grip at his thumb as he was camping out on the prairie about five weeks previous. The savage animal could not be made to loosen his hold till pounded nearly to death and choked off.

On the 14th the pain extended up the arm, reaching the shoulder, with sharp pains shooting through the chest, the pain in a measure leaving the thumb. On the 15th, Mr. Douglass complained of a choking sensation in the throat and a difficulty of breathing, and could swallow only with great effort, but appeared cheerful and hopeful, and was about nearly all day, visiting different business places in town. In the evening, at about 7 o'clock, the doctor was sent for in great haste, and found him in a raging condition, could not get anything down him or into his mouth, and found that he had eaten nothing during the day. Every breath-stirring, or the slightest disturbance, brought on these paroxysms. The doctor did all that medical science could do to relieve his patient, but to no purpose, only to allay momentarily. From this time on he continued to grow rapidly worse, the paroxysms more frequent, harder, and of longer duration, until death came to his relief at half-past 3 o'clock on the morning of the 16th.

Treatment in Small-Pox.—A correspondent, "Q. A. T.," sends us the following: "The clay dressing may be good in small-pox, bnt is not so pleasant as a remedy. I tried it when visited by that complaint in its most malignant type, some years ago. We had two cases, and although decidedly "Eclectic," we called in a homœpathic physician. The first case was badly marked. In the second, the disease, up to the time the pustules appeared all over the body, seemed as virulent as in the first case, and then almost immediately (in a few days) subsided, without leaving a scar. The progress and usual course of the disease seemed arrested by the free application of thick sweet cream to all parts of the body. In some instances the disease is aggrevated by the close room and extra cover, which the kindness of friends force upon the patient. Let them have an open window and light cover in the coldest season, if the ground were covered with snow.

The Cotton Plant Root in Medicine.—The root of the cotton plant, which is employed as medicine, has been subjected to careful chemical analysis by Professor E. S. Wane. He obtained from the root a dark red resinous mass, inaoluble in alcohol, ammonia, chloroform, and ether, but soluble in caustic solutions of soda and potass. It contains no alkaloid principle. He concludes that it is an acid resin, and suggests for it the name of gossypic acid.

Remedy for Toothache.—Powdered alum, two drachms; spirits of ether, seven drachms; mix, and apply to the tooth. Another: Chloroform, one ounce, alum, five grains; morphine, three grains; mix and apply with cotton.

The Cause.—Paul Bert, in an article in *Comptus Rendus*, ascribes the cause of death of fresh-water fishes when placed in salt-water to the chlorides present in the latter.

Cramp Colic.—It is said that two pills of gum camphor swallowed will give relief in twenty minutes.

MINING AND SCIENTIFIC PRESS.

W. B. EWER.....SENIOR EDITOR.

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ILLUSTRATIONS AND REPORTS OF MINING ENTERPRISES WANTED.—Drawings or photographs of mining works that are of general interest to our readers are solicited for publication in this journal. Official reports of Companies, and descriptions of mines of importance, of special interest, are also desired. Sketches of any new method and discoveries will be very acceptable.

San Francisco:

Saturday Morning, Aug. 3, 1872.

Gold and Legal Tender Rates.

SAN FRANCISCO, Thursday, August 1, 1872.—Legal Tenders buying, 87; selling, 87¾. Gold in New York to-day, 115⅝.

Table of Contents.

ILLUSTRATIONS.—The Lightning Mill; The Goodwin Pump, 65. Steam Plowing, 78.
EDITORIALS.—The Emma Mining Suit; The Mint Contract; The Diamond Fields of the Pacific Coast, 72. Revolution in Wine Cask-Making, 73.
MECHANICAL AND SCIENTIFIC.—A Manageable Balloon; Soldering Fluids; Iron in the Blood; A new Motive Power for Ships; The Weather and the Gulf Stream; An Immense Bridge Structure; Moving Railroad Trains by sail, 67.
USEFUL INFORMATION.—Correcting Echos in Large Halls; Linseed Oil; Gas Swindling, Sawing Wood Without a Saw; Marvels of the Insect World; Why Colored Persons Stand Heat Better than White, 71.
GOOD HEALTH.—Effect of Arsenic on the Human System; Asparagus for Rheumatism and Gout; Instinct of Appetite; Death From the Bite of a Skunk; Treatment in Small-Pox, 71.
DOMESTIC ECONOMY.—Rice—Its History and Value: Salad; How to Distinguish Edible Mushrooms, 74.
CORRESPONDENCE.—Notes of Travel in White Pine County, Nev.; Giant Powder in Bank Blasting, 66.
MINING SUMMARY from various Counties in California, Nevada, Arizona, Colorado, Montana, and Utah; Mining Shareholders' Directory; Stock Report, 68-9.

Substantial Appreciation of the Mining and Scientific Press.

During the past four weeks we have received over 262 new cash subscripions from a portion only of the State of Nevada, visited by our excellent agsut, Mr. L. P. McCarty. Since the commencement of the present improved volume an unueual number of renewals have been received hy us from other parts of Nevada, California, Utah, Colorado, Idaho, Moutana, and other Mining sections. Our extra labor and expense upon the MINING AND SCIENTIFIC PRESS being thus appreciated, we ahall not relax onr energies in making a still better paper.

To this end we invite friends of the interests which we represent to assiet our agents in obtaining information to enrich our columns as well as dollars to meet increased expenses. Intelligent and practical men are cordially invited to send us reliable information, not only of important discoveriee, extensive operationa, etc., but write us also their daily experiences which may be a guide and help to others who may be engaged in the eame businees. A few minntes spared now and then in the evening to write to the paper, will not be lost, since descriptions of certain localities or mines, turn pnblic attention to them, and, in the case of new districts particularly, will he of great benefit by furnishiug information which it would be difficult otherwise to get.

BAY DISTRICT HORTICULTURAL SOCIETY.—The next annual exhibition of this Society will he open to the public in their new and splendid hall, corner of Post and Stockton streets, on Thursday, the 22d of August, and will continue for fifteen days.

STOCK REPORTING INSTRUMENT.—The New York Gold and Stock Reporting Instument, a recent invention, for reporting the enlea and pricee of etock in the hoard, to auhscribere at their office by telegraph, is now in practical operation in this city.

The Emma Mining Suit.

The great Emma Mining snit, which hae been creating so mnch interest, both here and ahroad for the paet fewweeks, has heen brought to a tsrmination, temporarily, at least, much to ths satisfaction of csrtain intersated partiee and to the puhlic in general. We have been furnished with the facts in the cass which will be interesting to our rsaders. This was a suit in equity in which ths plaintiff, the Emma Silver Mining Co. prayed for a preliminary injnnction to rsstrain the defendsnts, the Ciucinnati and Illinois Tnnnel Co. from continuing certain alleged wrongful acts, during the pendency of an action of trespass hrought by the plaintiff against the defsndents for alleged trespass upon certain Silver Mining property, claimed by the plaintiff, but in the possession of the dsfsndants.

The suit has without doubt been one of the most remarkahle and important casee ever know in the history of mining litigation, as not only were the pereonal intersats of a few parties concerned, hut certain principles were involved wbich ars of vast moment to all miners, and holders of mining property in Utah. Perhaps if the immense capital of the Emma Co. had alons besn at stake the case might not have excited such universal intersst; bnt the most of those who wsre acquaintsd with the facts of ths case fslt that there were questions of issue, the decision of which would very materially influence the future dsvelopment and prosperity of the entire territory.

A Brief Review of the Case

May not be uninteresting to onr readers. The celebrated Emma mine, situated in Little Cottonwood District, was located and partially developsd in 1865, by csrtain parties who are now some of ths defendants. Its discovery did not cause any excitement whatever; in fact so little was known of its true value, that a practical miner refnsed to waste his time in working upon it, simply for the remunsration of a certain number of feet. Afterwards the mine was sold to an organized company called the "Emma Silver Mining Co. of Utah, and in May, 1871, this company dieposed of all their interest to the Emma Silver Mining company, of New York. In August Angust, 1871, a Government patent was obtaioed for ths mine, and in November of the same year, the New York company sold the mine to the plaintiffs for ths sum of $2,500,000.

For some tims past the defendants have been working a tunnel on the same hill, called the Cincinnati and Illinois tunuel; austansibly for the purpose of devsloping three mines, known as the Monitor, Magnet, and Cincinnati lodes. In April last, the men at work upon this tunnel broke through some of the Emma works in the weeterly part of what is claimed to be ths devsloped portion of the mine. The Emma workmen etopped up the break, and for nearly two months there appears to hava been no furthsr interference. But in the early part of Jnne, on account of a thaw on the mountain, a portion of the Emma caved in and for awhile work had to be euspended. When the Emma workmen again auceeeded in penetrating to the place where the break had heeu made, they found the developed floors in that part of the works occupied by the tnnnel company, whose employée forcibly held possessiou, and drove hack the Emma workmen. This ground contains large quantities of very rich silver hearing ore, and ia claimed by the Emma Co. as a part of their mine. The Illinois Co. contend that it is a separate deposit, and hence tbe suit in queetion.

The Evidence.

Tbe case came up in the Third District Court, Cbief Justice McKean presiding, and occupied several days in hearing. The evidence on both sides consisted mainly of affidavits of mining engineers and experts, whose testimony was as conflicting as can well he imagined. Several gentlemen who had large experience in practical mining, in different parts of the world, and who were mineral engineers by profession, and accquainted with geology aud mineralogy, testified on the Illinois side, and gave it as their opinion that the deposits were separate and distinct, and that their was a break hetween them which existed before the formation of the ore deposits. On the part of the Emma Co. a large number of other gentlemen, also engineere and experts skilled in mineral science and with experience varying from five to twenty years, gave evidence that the Emma deposit was one continnous body of ore, and what was claimed as ths Illinois dsposit was nothing but a part of the Emma lode, and that there was nothing hetween the different works to break a continuons ore connection. It was fully proven by two of the employés of the Emma Co. that from the spot where it was claimed there was barren rock forming a break, specimens of ore had bsen taken only two fest apart which assayed from $75 to $295 in silvsr to the ton; and that first-class ore had been taken from directly under this spot and shipped to England.

The Argument.

After ths evidencs came the arguments of the learned counssl, Hempstead and Kirkpatrick, L. P. Poland, W. M. Stewart and C. J. Hillyer, for plaintiff; Marshall and Carter, J. C. Royle, E. S. Joelyn and C. W. Bennett for defsndants. Although the arguments on both sides were able and sxhaustive, yst in one way, the least said about them the better, as they aboundsd in psrsonalities not expressed in the choicest or most elegant language. "Scoundrsl," "thief," and "swindler" are not the most dignified tsrms for conneel to address to each other, and it is to be regrstted that in this important case a little more calmness and decornm had not bsen observed.

The Decision.

The decision of Chief Justics McKean was deliversd in the presence of several hundrsd peopls, and was rsceived with universal satiefaction, becanss it was concsded to be honest and just by all classes disinterssted ae well as interested. After reviewing the testimony at lsngth he said that the court fully understood the magnituds of the cass and had considered it with great care, and was conetrained to reach ths conclusion that the hody of ore known as the Emma mine, and the body of ore in posseession of the dsfendante wsre parts of one and ths same deposit of ore; that the patent issued hy the United Statss conveyed to ths plantiff ths body of ore in dispnte, and that ths injuuction must issue. Suhsequently the injunctiou was issued iu accordance with ths praysr of the plantiffs' bill, and the Emma Co. put in possession of all the works, and the dsfsndants' prohibited from working the tunnsl or extracting any more ore whatever, or in interfering with with any acts of the plantiff.

Quite nniversal satisfaction was manifested at the result of the trial, and it is hoped that this decisiou may bs a precsdent for all eimilar suits in the future, as it is felt that an adversse dscisiou would have materially retardsd the progrsss of ths Tsrritory and would have deterred capitalists from investing in our mines, aud honest meu from engaging in mining pursuits iu Utah.

The Iron Contracts for the New Mint Again.

Iu our issne of June 29th ws made some comments upon the apparsnt unfairnsss manifested in giving out the contracts for the new mint building in this city, and we now notice that the Washington correspondent of the *Bulletin* of a late date, gives a partial and one-sided statement of the case, which does injuetice to the California hiddera nnder the first advertisement of proposals. If the reader will compare this statement with the facts eet forth in our issue ahove referred to, and which are not and cannot be controverted, it will be seeu that manifest injustice has beeu done, and that the Government is eeeking to add still more to the wrong by a prosecution of the boudsmen in a matter where hoth the facts and equity are altogether on the side of the defeudants, as cannot fail to be shown when the case comea to trial. The bond waa given on the express stipulation that the contract, if awarded, should be coneistent with the propoeal, which any one who reads hoth can see is not the case. During the unueual delay of 101 days after the date of proposals, iron had ao advanced in price, that a large loss to the contracters would have occured which would have been avoided had the Government given notice of acceptance within 15 or 20 days, which would have heen a reasonable time. This is a feet which was overlooked in our first notice, and which should he added to the unreasonahle time unnecessarily required for the performance of certain portions of the work.

DITCH COMPLETEN.—The Burnet river ditch in Baker county, Oregon, haa been completed, and the water turned in. This ditch is ninety-six milee long, cost over $400,000, and will open up a rich mining field.

Diamond Fields on the Pacific Coast.

Interesting and Important Discoveries Reported.

The diecovery of diamonds on the Pacific Coast is no nsw thing; they are occasionally found in a grsat number of localities, hut nowhere, heretofore, so plentifully as to make a special search for thsm profitahls. But during the past week a most nnusual sensation has been crsated in this city by ths allsgsd discovery, in great abundance, of diamonds, ruhise, sapphires, etc., in a locality somswhere in or near Eaetern Arizona. The prscious stones havs hesn on exhihition, and have heen seen by thoueands.

From ths reports of the parties interested, it appears that about three ysars ago soms psreons employed hy Meesrs. Robsrts & Harpsnding in prospecting for gold and eilver in Eastern Arizona, met, and obtained from an Indian soms precioue stonss, rubies, diamonds, etc., which hs claimed to have found in that vicinity. These stones were brought to this city, tested hy lapidariss and pronounced genuins. Upon the strength of these facts, immediate steps were taken to find the locality whsre the diamonds were obtained, and prospsct the eame. This business was placsd in chargs of Mr. Henry Janin, ths well-known mining euperintsndent, who euccesded in the sndeavor, and obtained and brought to this city a largs quantity of diamonds and othsr prscions stonss—several thousand in nnmber and valued at from one to two hundrsd thousand dollars.

Ths prospecting party aleo reportsd that thsre was quite an sxtensive diamond-bsaring deposit at the locality—embracing an arsa of eome 3,000 acres, throughont which the precious stones wsre found. Upon this information measures were takeu to secure the U. S. title to ths tract, which has now been dons, and a company organized to further prospect and work the same.

The Secret Out.

Up to this time all ths business has been managed with the utmost secrecy. But soon after filing the rscord of incorporatiou, with the heavy capital stock of ten millions of dollare—which was done on Tuesday last—soms ons connected with ths affair became a littls lsaky, aud dropped just enongh to allow some of the city reportere to get hold of facts sufficient to get up a first-class ssnsation item, the result of which, was a frank annonncement of ths whols fair, aud the puhlic display of the diamonds and other precious stones, the very pressnce of which, in this city, had been kept a profound secret for many months.

The Locality of the Discovery.

The prscise locality of the discovery has not yet heeu made known, although it is supposed to hs somewhere uear ths dividing line between Arizona and New Mexico, and probahly not far from the famous Burro mines.

It is claimed that although considerable search has heen made for many miles aronnd the particular location securad, no indications of diamonds have heen fonnd outside of that locality—a very unrsasonable assumption, however, if we are to place any reliance npon what is said of the alleged diecovery.

It is well known that Mr. Jauiu has beeu for some time near the locality alluded to, and is there now. The diamonds have heen on exhibition at the Bank of California and more puhlicly ahown at Mr. Lent'e office on California Street. There can be no question about the genuineness of the diamonds shown. Several huudreds, if not thousands, are shown, varying in size from the head of a small pin, up to that of a good sixed beau, and black diamonds of mucb larger sizea. The names of such men as Milton S. Latham, Thos. H. Selby, Wm. F. Babcock and Maurice Dore, which appear on the list of Directore, would eeem to give assuraace that the discovery and organization is a genuine one.

Further developments will be awaited with much intereat. In the meantime it is to be hoped no uudue excitement will he engendered or rush made for the reported diamond fields. At present, as we have already said, nothing definite is known with regard to their locality. Should further advices confirm the reports circulated, there is time enough and room enough for all who may wish to try their fortunes in that direction.

THE El Dorado South company have purchased a twenty-stamp mill, which will he put up at once, the Company having eufficient ore in their eeveral minee now to supply a mill for aix months to come.

Steam Plowing.

A great deal has been said and written on the subject of steam plowing in the United States; and engines, some to draw the plows by direct traction, others stationary on the sides of the field to be plowed, have been put to use, some drawing three plows, others five, and others again have attempted with as many as eight, and yet it is a fact that with all the skill usually attached to American ingenuity, we have fallen far behind the English in our efforts to successfully cultivate the land by steam plowing.

Fowler's steam plow has been at work successfully for years in England and France, and the Pacha of Egypt has as many as four hundred in steady employment during the plowing season. Land of the same quality, side by side, the one plowed by steam yields forty bushels per acre, the other by horses, yielding but twenty bushels. The cost of plowing by steam is one-third less than with horses, even in Europe where the plowman's wages are but forty cents a day.

Plowing by Contract.

There are establishments in England that employ 1,200 men each in the manufacture of steam plowing apparatus; and there are organized companies who hire out their steam machines or do work by contract, and there are said to be over five hundred steam plows thus held for hire, and parties contract to do plowing from eight to twelve inches deep, for $1 and $1.15 per acre, and plowing from thirty to forty acres per day.

It is not surprising therefore that Americans should be making continued efforts in the direction of some invention that shall equal if not greatly excel the present English steam plow.

An invention has been put to practical test within the past three years in California, on the principle of revolving cutters, that seemed to promise favorable results, but we have not heard of its recent trials or performances. And now Mr. Alexander Campbell, of Yolo Co., submits an invention of his, both as regards peculiarity of engine and its attachment to plows, that seems to merit careful consideration and a full trial, and we are pleased to learn that the "Reclamation Fund Commission" of which G. G. W. Morgan is the active efficient Secretary, has taken the matter in hand. It has also been brought to the notice of the Sacramento Farmers' Club as follows:

Engines for Plowing.

In response to an invitation extended by the Sacramento Farmers' Club, Alexander Campbell of Washington, Yolo county, resubmitted his drawings and also the description of his steam-plowing, ditching and traction engines: "These engines are capable of cultivating from thirty to sixty acres per day of ten hours, from seven to twelve inches in depth, or of cutting one mile of ditching per hour, three feet wide at the top, one foot at the bottom, by two and one-half feet in depth. They may be made available at a moment's notice for any ordinary work, such as threshing, pumping, sawing, hoisting, or as a traction engine. They are fitted with Campbell's compound windlass, expansion frames, telescopic hoisting crane, etc. This windlass has a clip-drum, enabling one engine to be used when wanted, independent of any other, for plowing, etc. The expansion frames take all strain entirely off the boilers, thereby greatly reducing the wear and tear. The cylinders are steam jacketed, and all the gearing and working parts are made of cast steel, insuring the greatest strength and lightness. No other system of steam cultivation can compare with this for thoroughness of work, less wear and tear, and economy of expenses for work alone. The best traction engine known to the public is manufactured by Avling & Porter, of Rochester, England. Their six horse-power engine has an indicated power of thirty-eight horses, and weighs 11,704 pounds. Eighty-three pounds is the tractive power of a horse at four miles an hour.

Power Required

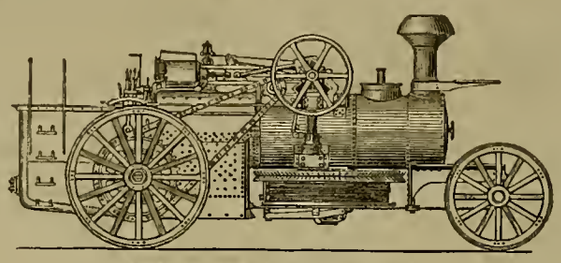
To pull a ton over soft, sandy or gravelly ground requires a strain of 210 pounds. To plow a furrow eight inches deep by ten inches in breadth it requires a strain of 303 pounds. This power would pull five plows in a gang at four miles an hour. This, deducting say fifteen per cent. for stoppages, will give 1 75-100 acres per hour, or 17 24-100 acres per day of 10 hours, at a cost of 1,900 pounds of coal and two skilled men's wages. This assuming five pounds of coal per horse-power per hour. This shows a consumption of 1,160 pounds for actual work done and 750 for propelling the engine. Supposing this engine to be fitted with a 'clip-drum,' the friction of the rope does not waste one-tenth of the engine power; thus we should have 34 2-10 horse-power for actual use instead of 23 2-10. Cost of direct traction—2,000 pounds of coal, $10; two men, $3—$18 for 17¼ acres. Stationary traction—2,000 pounds of coal, $10; two men, $8; two boys, $3—$21 for 27¼ acres. Thus direct traction will cost about $1 per acre, while the rope traction will cost seventy-six cents per acre."

After the reading of the above and the explanation of the drawings by Campbell, I. N. Hoag offered the following, which was unanimously adopted:

"Whereas, Alexander Campbell has exhibited to the Club drawings of a steam-plowing apparatus, an improvement on the English system of plowing by stationary engines, and explained the advantages of stationary engine-power over direct traction; and whereas we are fully satisfied that the productiveness of our soil can be greatly increased by deeper and more thorough cultivation, therefore,

"*Resolved*, That we regard Campbell's improvement a valuable one, and we would be glad to see the plow introduced in our State generally, and hope capitalists who are interested in the agricultural improvement of our State will not hesitate to furnish the necessary means to accomplish this object."

The illustration we present of engine, and field work being performed, were engraved at the Mining and Scientific Press patent agency, 338 Montgomery street, San Francisco.



IMPROVED STEAM PLOWING ENGINE.

THIS DESIGN SHOWS THE ENGINES AT WORK.

Revolution in California Wine Cask Making.

Hitherto all the lumber used for the manufacture of wine casks has been Eastern oak, and this of course has had to be imported at very high rates. For example it now sells retail, at $100 to $125 per thousand, whereas redwood costs only $37½ retail in this market. Now it is quite evident, that if redwood could be substituted for it there would be an

An Immense Saving

Effected in the cost of the casks, and these have always formed the most expensive of the items connected with the manufacture and export of wine. Redwood has been frequently attempted to be used as a material for the manufacture of wine casks, but the experiments with it have generally proved failures, inasmuch as the coloring matter contained in it, has given a bitter and disagreeable taste to the wine. Several manufacturers of wine in the country districts have, however, steamed the casks after making them, and coloring matter thereby removed, the wine kept just as well in them as in oak built casks.

Among the gentlemen who have joined this business, are Arpad Haraszthy, Esq., with Landsberger & Co., Messrs. Pellet & Carver, of St. Helena, Mr. Hood, of Sonoma, and West Bros., of Stockon. The plan of steaming after making, has failed to be entirely successful, on account of the great shrinkage of the wood. However, the Messrs. Fulda and Sons, wine-cask makers, cor. of Commercial and Drum streets, in this city, have solved the difficulty by adopting the process of

Steaming the Lumber

Before making the casks. They are pioneers in the introduction on the coast of steam machinery in the business of coopering, and have introduced several labor-saving machines of their own invention into it, as well as being the first to render of practical use, this change in the material for the manufacture of casks. They receive the redwood at the factory from Mendocino, in large bolts, cut to any size that may be required These bolts are first cut into thicknesses and steamed for a week, in an air tight-box, twenty-five feet long, and capable of holding at once 10,000 feet of lumber. This box is kept all the time filled with hot steam conveyed thither by a pipe leading from the steam boiler. At the end of the week all the sap, coloring matter, etc., is entirely removed, and the lumber comes out half bleached, much shrunken, and not over half its previous weight. The process, moreover, causes the wood to become much tougher and makes the grain closer, as has been proved by practice. The effect of the steaming may be estimated when it is known that sawdust taken from the prepared lumber and steeped for a week is as colorless as mucilage, whereas without, the wood from which it has been taken, having undergone the process, it would be as black as a similar solution of logwood. After steaming it is seasoned and dried, and it is then ready for the process of manufacture. The Messrs. Fulda & Sons are, however, making preparations for the future drying of the lumber by heated steam, and thus effecting a great saving in point of time. The saving effected by the use of redwood is just about one-half the cost of the casks, those made from oak costing about 15c. per gallon per cask, while those made from redwood cost in the neighborhood of 7½c.

The First Cask

Manufactured by them under this system has been for J. R. Snyder, Esq., President of the Wine Growers' Association. It holds 1,700 gallons. Its staves are three inches thick at the ends, and two in the middle. The head is made of lumber three inches thick, the central piece being of oak, with a manhole in the middle. It has 12 hoops made of 2½ by 3-16 inch iron. This firm has also commenced to manufacture tanks similarly from redwood, and have now orders for a dozen from Dr. Crane, of St. Helena. They have also invented

An Apparatus for Filling Tanks.

One source of trouble to wine growers has been hitherto that they have not been able to fill the tanks completely, a small space always remaining between the surface of the wine and the head of the tanks. This frequently caused the wine to sour, but the new invention will preclude all possibility of this happening.

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co's. Mining and Scientific Press, American and Foreign Patent Agency, the following are worthy of mention:

Improvement in Rock-drilling Machines.—A. J. Severance, S. F. This invention relates to that class of rock-drilling machines known as boring drills, and is particularly applicable to the Diamond drill. Its object is to provide a revolving attachment for the drilling machine by which the swivel head and drill rod can be turned to any point desired, and in which they can be elevated and lowered as necessary. This is effected by means of two circular castings, which are united by a plate by which to secure to the drilling machine. The castings are provided with circular T-shaped grooves in which lugs from a circular frame move. A slide moves in a longitudinal slot in this frame, and the slide and vertical shaft are steadied by a V-shaped casting. This casting supports a short horizontal shaft and bevel wheel which meshes into another wheel (moving on a friction) on the vertical shaft, and each part of the device is thus supported at the proper point and can be separately adjusted.

Improvement in Wind Wheels.—W. I. Tustin, S. F. This invention relates to a novel device for operating the rudder or guide vane of a wind-mill when placed in a position parallel with the wheel, and it consists in the employment of a vertical rod which is hinged to the vane rod or beam, and extends downward to a convenient point to be operated from the ground.

Improvement in Beadstead Fastenings.—Seneca Jones, S. F. The object of this invention is to provide an improvement in the ordinary fastenings for securing the side rails of a headstead to the corner posts; and it consists in casting upon the extremity of the plate which is fastened to the side rail, a projection which can be countersunk into the rail so as to prevent the plate from shifting from its proper position, and thus disarranging the entire fastening.

Improvement in Gaiping Pulleys.—A. S. Hallidie, S. F. The object of this invention is to provide an improvement upon a former invention, and it consists in hinging or otherwise loosely connecting the two sections or halves of each grip by a suitable joint at their meeting edges along the bottom of the grooves in which the rope lies, so that they will be held closely together when the strain comes upon them.

Cederberg Mine.—The 10-stamp mill of the Cederberg mine in El Dorado county, started up on the 1st inst. The mine, specimens from which have attracted considerable attention in a jeweler's window on Montgomery street, has paid all expenses from the start, no assessment having been levied. They have, moreover, some $13,000 in the bank now. The prospects are reported to be good. The names of the newly elected officers and Trustees will be found in another column.

Camp Floyd District.—A dispatch from Salt Lake states that the first silver bullion from Camp Floyd District, from the English company's works, was received there on the 29th ult. There was a large amount and of the highest pureness ever produced in the Territory.

Quicksilver.—The high price and light stocks in New York and London, give tone to our market, and an advance from the present rate of 85c. is quite possible.

Mill Burned.—The mill at the Eliza mine on Humbug was entirely destroyed by fire on the night of the 28th inst.

Mining Sales.—The Inyo *Independent* reports the sale of the Bennet interest or title to the Santa Maria mine, Cerro Gordo, by P. W. Bennet and P. Reddy, to Wm. Walt, of New York, for $30,000.

The Grass Valley *Union* says that a half interest in the State mine, better known as Perrins, has passed over to Judge Brown, of You Bet. The amount was in the neighborhood of $18,0000.

The Ely *Record* gives the particulars of the sale of the Oneida mine, situated on Panaca Flat, east of the Lightner shaft of the Raymond & Ely. The price paid was $40,000. The purchase was made for San Francisco parties, who will at once place the mine in running order.

Rumored Consolidation.—The Salt Lake *Tribune* has the following item: The rumor gains strength that a gigantic consolidation of mining interests is going on in Little Cottonwood. There is talk of a company organizing with a capital of 20,000,000, which will include all the old-title-men. It is said the object is to "have less law and more mining." We hope this will be the case.

The Lassen *Sage Brush* says the placer miners near Susanville are working by the old process of shoveling the dirt into sluices, and are making from $6 to $30 per day to the hand.

United States Mining Laws and Regulations Thereunder.

[Continued.]

10. With regard to the extent of surface-ground adjoining a vein or lode, and claimed for the convenient working thereof, the act provides that the lateral extent of locations of veins or lodes, made after its passage shall in no case *exceed three hundred feet on each side of the vein at the surface*, and that no such surface rights shall be limited hy any mining regulations to less than twenty-five feet on each side of the middle of the vein at the surface, except where adverse rights existing at tbe date of said act may render such limitation necessary, the end lines of such claims to be in all cases parallel to each other.

11. By the foregoing it will he perceived that no lode-claim located after the date of said act can exceed a parallelogram fifteen hundred feet in length hy six hundred feet in width, but whether surface-ground of that width can he taken, depends upon the local regulations or State or territorial laws in force in the several ming districts; and that no such local regulations or State or territorial laws shall limit a vein or lode claim to less than 1,500 feet along the course thereof, whether the location is made hy one or more persons, nor can surface rights be limited to less than fifty feet in width, unless adverse claims existing on the 10th day of May, 1872, render such lateral limitation necessary.

12. It is provided in said act that the miners of each district may make rules and regulations not in conflict with the laws of the United States, or of the State or Territory in which such districts are respectively situated, governing tbe location, manner of recording, and amount of work necessary to hold possession of a claim. It likewise requires that the location must be so distinctly marked on the ground that its houndaries may be readily traced. Thie ie a very important matter, and locators cannot exercise too much care in defining their locations at the ontset, inasmuch ae the law requires that all records of mining locations made snhsequent to ite paesage, shall contain the name or names of the locators, the date of the location, and such a *description of the claim or claims* located, hy reference to some natural object or permenent monument, as will indentify the claim.

13. The eeid act requires that uo lode claim can he recorded until after the discovery of a vein or lode within the limite of the ground claimed; the object of which provision is evidently to preveut the encumhering of the district mining records with uselese locations before sufficient work has heen done thereon to determine wbether a vein or lode has really been discovered or not.

14. The claimant should therefore, prior to recording his claim, unless the vein can be traced upon the surface, sink a shaft, or run a tunnel or drift, to a sufficient depth therein to discover and develop a mineral-hearing vein, lode, or crevice; should determine, if possible, the general couree of such vein in either direction from the point of discovery, by which direction he will he governed in marking the houndaries of his claim on the surface, and should give the course and distance ae nearly as practicable from the discovery-shaft on the claim, to some permanent, well-known points or objects, such, for instance, as stone monuments, blazed trees, the confluence of streams, point of intersection of well-known gulches, ravines, or roads, prominent buttes, hills, etc., which may be in the immediate vicinity, and which will serve to perpetuate and fix the *locus* of the claim and render it susceptihle of identification from the description thereof given in the record of locations in the district.

15. In addition to the foregoing data, the claimant should state the names of adjoining claims, or if none adjoin, the relative positions of the nearest claims; ehould drive a post or erect a monument of stones at each corner of his surface-ground, and at the point of discovery or discovery-shaft, should fix a post, stake, or board, upon which should be designated the name of tbe lode, the uame or names of the locators, the number of feet claimed, and in which direction from the point of discovery, it heing essential that the location notice filed for record, in addition to the foregoing description, ehould state whetber the entire claim of fifteen hundred feet is taken on one side of the point of discovery, or whether it is partly upon one and partly upon the other side thereof, and in the latter case, how many feet are claimed upon each side of such discovery-point.

16. Within a reesonahle time, say twenty daye after the location shall have been marked on the ground, notice thereof, accurately deecribing the claim in manner aforesaid, should be filed for record with the proper recorder of the district, who will thereupon issue the nsual certificate of location.

17. In order to hold the possessory right to a claim of fifteeu hundred feet of a vein or lode located ae aforesaid, the act requires that unitl a patent shall have been issued therefor, not less than one hundred dollars' worth of labor shall be performed or improvements made thereon during each year, in default of whicb the claim will he subject to re-location by any other party having the necessary qualifications, unless the original locator, his heirs, assigns, or legal representatives, have resumed work thereon after such failure and before such re-location.

18. Tbe importance of attending to these details in the matter of location, labor and expenditure will he the more readily perceived when it is understood that a failure to give the suhject proper attention, may invalidate the claim.

TUNNEL RIGHTS.

19. The fourth section of the act provides that where a tunnel is run for the development of a vein or lode, or for the discovery of mines, the owners of such tunnel shall have the right of possession of all veins or lodes within three thousand feet from the face of such tunnel on the line tbereof, not previously known to exist, discovered in such tunnel, to the same extent as if discovered from the surface; and locations on the line of such tunnel of veins or lodes not appearing on the surface, made by otber parties after the commencement of the tunnel, and while the same is being prosecuted with reasonable diligence, shall he invalid; but failure to prosecute tbe work on the tunnel for six months shall he considered as an abandonment of the right to all undiscovered veins or lodes on the line of said tunnel.

20. The effect of this section is simply to give the proprietors of a mining tunnel run in good faith tbe possessory right to fifteen hundred feet of any hlind lodes cut, discovered or intersected hy such tunnel, which were not previously known to exist, witbin three thousand feet from the face or point of commencement of such tunnel, and to prohibit other parties, after the commencement of the tnnnel, from prospecting for and making locations of lodes on the *line thereof* and within said distance of three thousand feet, unless such lodes appear upon the surface or were previously known to exist.

21. The term "face," as used in said section, is construed and held to mean the first working face formed in tbe tunnel, and to signify the point at which the tunnel actually enters cover, it being from this point that the three thousand feet are to be counted, upon which prospecting is prohibited as aforesaid.

22. To avail themselves of the benefits of this provision of law, the proprietore of a mining tunnel will be required, at the time they enter cover as aforesaid, to give proper notice of their tunnel location, hy erecting a snhstantial post, hoard, or monument, at the face or point of commencement thereof, upon which should he posted a good and sufficient notice, giving the names of the parties or company claiming the tunnel right; the actual or proposed course or direction of the tunnel; the hight and width thereof, and the course or distance from such face or point of commencement to some permanent well known objects in the vicinity by which to fix and determine the *locus* in manner heretofore set forth applicable to locations of veine or lodes, and at the time of posting such notice they shall, in order that miners or prospectors may he enahled to determine whether or not they are within the linee of the tunnel, establish the boundary lines thereof hy stakee or monumente placed along such liues at proper intervals, to the terminus of the three tbousand feet from tbe face or point of commencement of the tunnel, and the lines so marked will define and govern as to the specific boundariee within which prospecting for lodee not previouely known to exist is prohibited while work on tbe tunnel is being prosecuted with reasonable diligence.

23. At the time of posting notice and marking out the lines of the tunnel as aforesaid, a full and correct copy of such notice of locatiou defining the tunnel claim must be filed for record with the mining recorder of tbe district, to which notice must he attached the sworn statement or declaration of the owners, claimants, or projectors of sucb tunnel, setting forth the facts in the case; stating the amount expended by themselvee and their predecessors in interest in prosecuting work thereon; the extent of the work performed, and tbat it is *bona fide* their intention to prosecute work on the tunnel so located and described with reasonahle diligence for the development of a vein or lode, or for the discovery of mines, or hoth, as the case may be.

24. This notice of location mnst be duly recorded, and, with the said sworn statement attached, kept on the recorder's files for future reference.

25. By a compliance with the foregoing much needless difficulty will be avoided, and the way for the adjnstment of legal rights acquired in virtne of said fourth section of the act will be made mucb more easy and certain.

26. This office will take particular care that no improper advantage is taken of this provision of law by parties making or professing to make tunnel locations, ostensibly for the purpose named in the statute, hut really for the purpose of monopolizing the lands lying in front of their tunnels to tbe detriment of the mining interests and to the exclusion of *bona fide* prospectors or miners; but will hold such tunnel claimants to a strict compliance with the terms of the act; and as *reasonable diligence* on their part in prosecuting the work is one of the essential conditions of their implied contract, negligence or want of due diligence will be construed as working a forfeiture of their right to all undiscovered veins on the line of such tunnel.

MANNER OF PROCEEDING TO OBTAIN GOVERNMENT TITLE TO VEIN OR LODE CLAIMS.

27. By the sixth sectiou of said act, authority is given for granting title for mines by patent from the Government, to any person, association or corporation having the necessary qualifications as to citizenship and holding the right of possession to a claim in compliance with law.

[To be continued.]

Domestic Economy.

Rice—Its History and Value.

The use of rice as a breadstuff is probably coeval with the human race. Like that of the other cereals, it extends beyond tbe reach of record. Under the name of *oruz* in Arabic, *oruza* in Greek, *oryza* in Latin, *riz* in French, *reis* in German, *rice* in English,—it has heen known to history for two or three thousand years, heing mentioned hy Pheophratus 2,200 years ago, and by Horace, Pliny, and Celsus at a later date.

Its native place is probahly the steaming river hottoms of India, whence it traveled eastward and uorthward to China aud Japan, and westward to Egypt and to us. When it reached Egypt we know not; early enough, as many think, to give rise to that singular exhortation of the royal preacher of Israel, 2,800 years ago, in which, alluding probably to the mode of sowing rice on the swollen surface of the Nile, he says, "Cast thy hread upon the (face of the) waters: for thou shalt find it after many days," Eccles. xi. 1.

After being introduced into Italy from Greece, as we learn hy the form of the uame, and being domesticated for centuries in all the southern countriee of Europe, it was carried, in the year of 1605, to the then infant colony of Carolina, where it was cultivated to such extent, and brought to so high a degree of perfection, that the rice raised upou the southern seaboard of the American colonies, now the United States, has heen ever since known in Europe as Carolina rice.

As au article of food it surpasses in importance every other cereal in present use. Wheat may he more nutritious, rye more hardy, maize spread over a wider range of temperature—hut rice feeds the greatest number of humau mouths. Amoug the swarming millions of the tropice, and of China, it occupiee the same place as wheat in the warmer parts of tbe temperate zoue, and rye in the colder.

It has heeu estimated that, if the human race were divided into families according to tbe predominant use of the several grains, the rice eaters would occupy the first place in numher; while wheat and maize would contend for the eecond, with a fair promise of victory for the maize; and the fourth place would he held hy rye, oats, and barley. Indeed, besides heing "the staff of life" in the most populous parts of the earth, it is used so extensively among all the other grain eaters of the human race, that it ie questionable whether a greater amount of it is not consumed as a breadstuff than of all the other cereale combined.

Among the botanist rice is kuown by its Latin name, *Oryza*. There is hut one species, though there are many varieties; for the wild rice, eo called, of tbe North American ponds and lakes, is not a rice, but a reed—not an *Oryza* hut a *Zizania*.

Food chemists tells us that it contains "less of the nutritive principal than wheat." This however, is in some measure compensated hy tbe fact that of all the cereals it is the most compact—a merchantable bushel of maize or Indian corn, being rated at 56 lbs., and wheat at 60 lbe., while rice, which rarely sells hy hulk, and therefore has no estahlished standing like the othere, seldom weighs leee than 65 lbs. to the bushel, and oftentimee more. Its compactness ie shown also in ite resistance to heing crushed, having almost a gravel-like hardness, and also in the fact that skillful hoiliug will cause it to expand and donhle, perhaps trehle, its former hulk. But, however weighty in the scales, it is exceedingly light upon the stomach.

In general wholesomeness, iu delicacy of flavor, and in the variety of nses to which it is applicable, it is prohahly not surpassed by any other grain. To the strong stomach of the day lahorer it as well suited as the coarse bread of the Indian corn, rye, or oats; while for the deli-
appetite of the habe, invalid or for the ten-
organs of the it ie a safe substitute for sago, arrowroot, tapioca, or cassava.—*Food Journal.*

Salad.—Dr. Kitchiner's receipe for making a salad:—"Boil a couple of eggs for 12 minutee, and put them in a hasin of cold water for a few minutes. The yolks must be quite cold and hard, or they will not incorporate with the ingredients. Ruh them through a seive with a wooden epoon, and mix them with a tablespoonful of cream; then add two tahlespoonfuls of oil. When these are well mixed, add by degrees a teaspoonful of salt and powdered lump sugar, and the same of made mustard; when these are emoothly united, add very gradually 3 tablespooufuls of vinegar; rub it with the other ingredients till thoroughly incorporated with them; cut up the white of the egg, and garnish the top of the ealad with it. Let the sauce remain at the hottom of the howl, and do not stir up the salad until it is to be eaten." If to the above he added a teaspoonful of Tarragon vinegar, and a teaspoonful of Eschalot vinegar, a salad will be made to which none will object.

Broiling Meats.—When meats are hroiling on a gridiron over hot coals, the sndden high heat applied sears the outside, which shuts in the jnices, and rapid application of heat soon cooks the meat through, if in moderately thin piecee. It is then tender, juicy and palatahle. Those who never broil their fresh meat, fish or poultry, do not know the excellencies of a properly cooked dish of animal food.

How to Distinguish Edible Mushrooms.

Every housekeeper who makes nse of this delicious esculent, should know how hy some test, to distinguish the true mnshroom from the poisonous species. A writer in the English *Mechanic* gives what he considers an infallihle tcst for so distinguishing the good from the bad.

He remarks, in the first place tbat the true mnshroom is invariahly fonnd in rich pastures; and never on or about stumps, or in the woods, and, although a wholesome species sometimes occurs in the latter localities, the writer considers it better to avoid their products. A very good point, in the second place, is the peculiar intense purple hrown color of the spore-dust, from which the ripe mushroom derives the same color (almost black) in tbe gills. To see these spores, it is only necessary to remove the stem from the mushroom, and lay tbe upper portiou with the gills downward, ou a sheet of writing paper, when the spores will be deposited, in a dark impalpahle powder, in a short time. Several dangerous species, sometimes taken for the true, have the spore umber-brown, or pale umher-hrown.

In the true mushroom, again, there is a distinct and perfect collar, quite encircling tbe stem, a little ahove the middle, and tbe edge of the cap overlaps the gills. In some poisonous species this collar is reduced to a mere fringe, and the overlapping margin is absent or reduced to a few white scales. Lastly, the gills never reach to nor tonch the stem, there being a space all around the top of the stem, where the gills are free from the stalk.

There are numerous varieties of true mushrooms, all of them equally good for the table. Sometimes the top is white and soft as kid leather; at other times it is dark hrown and ecaly. Sometimes on heing cut or broken, the mushroom changes color to yellow, or even blood-red; at other times, no change whatever takes place. To sum up, it is to be observed that the mushroom always grows in pastures; always has dark, purple-hrown spores; always has a perfect encircling collar; and always has gills which do not touch the stem, and has a top with an overlapping edge.

In addition to the method just indicated for testing the genuinenes of mushrooms, we are informed tbat, however much any particular fungus may resemhle the eatahle mushroom, none are genuine or safe, the skin of whicb cannot be easily removed. When taken hy the thumb and finger at the overlepping edge, this skin will peel up ward to the center, all around, leaving only a small portion of the ceuter of the crown to he pared off by the knife.

The "Why" in Vegetable Cookery.

Why should Soda be boiled with greens, cabbages, brocoli and turnip greens?—Because the oil which all these vegetables contain more or less, the soda extracts, and leaves the greens swect and wholesome; hut the water is, after boiling tbe geeens with soda, most unwholesome, perbaps poisonons. A piece of soda, filhert size, is sufficient for a very large saucepan of boiling water. Turnip greens have scarcely any oil in tbem, hut are neverthelese much more wholesome for cating when cooked with a little eoda. From the secd of cabhage the colza-oil is manufactured.

Why should Vegetables be washed in rather warm water first, then in cold, to cleanse them from sand and insects?—The hot water, which must he hotter than tepid, causee the insects and sand to fall out at once. Insects do not alwaye dislike cold water and salt, but the hot water kills them. It must he understood that only a small handful of greens or one head of cabhage at a time must be washed, and then instantly thrown into the cold water, which crispe and thoroughly cleanses them. Spinach, leeks, celery and seakale, are thus rendered very clean, and, moreover, are very rapidly cleansed. It is worse than useless to attempt to cleanse vegetahles in salt and water. The hardness which salt creates in the water prevents all cleansing properties. The salt may kill the iusects (it does not always do this,) hnt they stick on hard and fast; the hot water makes them fall out at once, and the cold water crisps and also blanches them.

Why should Turnips be cut across the fibre in rings of less than half an inch in thickness?—For three reasons: first, the turnip need only be peeled very tbin, instead of in the usnal manner, thickly and wastefully; secondly, hy so cutting them the fibres are cut across, so that however old the turnip is, it is never stringy; thirdly, they require only fourteen minutes to hoil in *plenty of boiling water* and salt, and thue the delicate flavor of tbe turnip is preserved, also they can he more easily mashed. The thinner the circles of turnip are cut, the quicker they cook and the less fihre they will have.—*Mrs. Warren.*

Caution.—Housekeepers cannot be too carcful in avoiding poisonous articles and mixtures in connection with the culinary art and in other domestic arrangements. Dr. R. Mirus mentions two cases in Jena, and one in Frankfort, where persons using green glazed paper shades were attacked with symptoms of arsenic poisoning. In no case the symptoms did not cease until the use of the shade was discontinued. Tbe heat of the lamp volatilizing the areenic renders even the very small quantity present extremely dangerous. The areenic is used in the Paris green with which lamp shades, wall papers, toys, etc., are so often colored.

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BROWN'S PATENT LAMP.

BROWN'S PATENT LAMP, FOR Mills and Hydraulic Mining Claims.

One of these Lamps, when placed at a distance of 200 feet from the bank, will light up a bank surface 250 feet in length and 160 feet high, and to a much better advantage than any other light heretofore tried, and at an expense not to exceed five cents per hour. Lamps furnished at short notice.
For further particulars address
C. B. BROWN,
7v24-t Placerville, Cal.

THE TANITE COMPANY,
STROUDSBURG, PA.,
Sole Manufacturers of
THE TANITE EMERY WHEEL,
And builders of Emery Grinders, Saw Gummers, Etc., Etc.
Emery Grinding Machines,
At $15, $20, $50, $75, and $110. DIAMOND TURNING TOOLS, $15 each.
SOLID EMERY WHEELS,
From 40 cents to $113 each.
Every IRON FOUNDER can save money by using these Wheels to grind the sprues and gates off of castings. Every MACHINIST can save money, files, and labor, by using them to shape his lathe tools, to grind off chilled edges, to finish nuts, etc., etc. Every BRASS WORKER can use them on Brass. Every WOOD WORKER can use them to gum his saws, to sharpen his planer knives, to make his moulding cutters. For illustrated circulars address THE TANITE Co., Stroudsburg, Monroe county, Pa.
13v24-tf

BURLEIGH
ROCK DRILLS
AND
AIR COMPRESSORS.
The Burleigh Rock Drills, which have stood the test of five years constant use at the Hoosac Tunnel, and which are now in use in nearly every State in the Union, as well as in Europe and South America, are unequalled in efficiency and economy by any other Drilling Machine. They are of various sizes, and equally well adapted to Tunnelling, Shafting, Open Cut or Quarrying, and will drill six to ten inches per minute in granite. They are driven by steam above ground, or compressed air when under ground. The Burleigh Air Compressor is the best engine yet devised for furnishing the "air motor" for the many purposes to which it is now being applied.
Send for illustrated pamphlet to
BURLEIGH ROCK DRILL CO.,
FITCHBURG, MASS.
25v24-6m

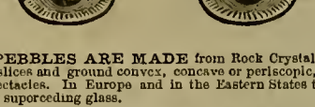
NELSON & DOBLE,
AGENTS FOR
Thomas Firth & Sons' Cast Steel.

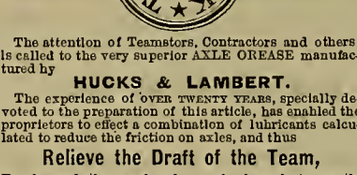
MANUFACTURERS OF
Sledges, Hammers, Stone Cutters', Blacksmiths' and Horse-Shoers' Tools.

13 and 15 Fremont street, near Market, San Francisco.
10v14qr

Peteler Portable Railroad Co.,
OFFICE, 42 BROADWAY, NEW YORK.

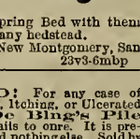
By this invention, one man, with one horse and five cars, does the work of ten men, ten horses and ten carts.
Highly Approved by all who Use Them.
CARS AND TRACKS FOR SALE OR TO LET.
Samples at the office. Illustrated Circulars free.
State and County Rights for Sale.
19v24eow3m

"Clear as Crystal."

PEBBLES ARE MADE from Rock Crystal cut in slices and ground convex, concave or periscopic, for Spectacles. In Europe and in the Eastern States they are superceding glass.
Among the advantages they have over glass are, that being susceptible of the HIGHEST POLISH, they transmit more rays of light, nothing having more transparency.
They are COOLER to the Eyes—a very important gain.
They are much harder than glass, and DO NOT SCRATCH.
The best quality of Crystal is found in Scotland and the Brazils, and is manufactured into lenses by the best workmen in England and France, for
Thomas Houseworth & Co.,
OPTICIANS,
No. 9 Montgomery street, Lick House,
Where they can be obtained, already fitted, in frames, or may be fitted to order.
Persons sending their Spectacles can have Pebbles inserted of the same grade as their glasses.
Illustrated Circular for style of frames sent to any address free.
☞ Pebbles sold as such by us, are Warranted.
15v3awbp3m

H & L AXLE GREASE.


The attention of Teamsters, Contractors and others, is called to the very superior AXLE GREASE manufactured by
HUCKS & LAMBERT.
The experience of OVER TWENTY YEARS, specially devoted to the preparation of this article, has enabled the proprietors to effect a combination of lubricants calculated to reduce the friction on axles, and thus
Relieve the Draft of the Team,
Far beyond the reach of any who have but recently gone into the business; and as the H & L AXLE GREASE can be obtained by consumers at as
LOW A RATE
As any of the inferior compounds now being forced upon the market by unprincipled imitators, who deceive and defraud the consumer.
HUCKS & LAMBERT
Invite all who desire a First-class and Entirely Reliable Article, and which for Over 18 Years in this country has given such GENERAL SATISFACTION, to ask for the H & L AXLE GREASE. See that the trade mark **H & L** is on the red cover of the package, and take no other.
3v24-eowr

"STAR" CANDLES.
MINERS AND TUNNEL MEN are reminded that we are in constant supply of the old and popular brand
PROCTER & GAMBLE'S
Cincinnati "Star" Adamantine Candles, the best and cheapest in the market, affording the most LIGHT FOR THE LEAST MONEY, and in every particular sustaining their reputation as the leading candle of the U S. For sale in lots to suit by
ROSS, DEMPSTED & CO.,
25v26-3m 105 and 107 California St., S. F

WARNER & SILSBY
Manufacture all sizes of
Bed and Sofa Springs,

Which they offer to the trade at reduced prices; also the celebrated Obermann Self-Fastening Bed Spring.
Any man can make his own Spring Bed with them by attaching them to the slats of any bedstead.
642 Mission Street, above New Montgomery, San Francisco. 23v3-6mbp

$1,000 REWARD! For any case of Blind, Bleeding, Itching, or Ulcerated Piles that **De Bing's Pile Remedy** fails to cure. It is prepared expressly to cure the Piles and nothing else. Sold by all Druggists. Price $1.00.
O. F. RICHARDS & Co., Agents, corner Clay and Sansome streets, San Francisco, Cal.

Metallurgy and Ores.

RODGERS, MEYER & CO.,
COMMISSION MERCHANTS,
ADVANCES MADE
On all kinds of Ores, and particular attention
PAID TO
CONSIGNMENTS OF GOODS.
4v16-3m

LOUIS FALKENAU,
STATE ASSAYER,
Analytical and Consulting Chemist,
421 Montgomery St. up stairs.
Particular attention given to the Analysis of Ores Minerals, Metallurgical Products, Mineral Waters, Soils, Commercial Articles, Etc.
One or two pupils can receive theoretical and practical instruction in Assaying, Analysis, or any particular branch of Chemistry at the laboratory. 11v21-3m

G. W. STRONG. W. L. STRONG
C. W. STRONG & CO.,
Metallurgical Works,
No. 10 Stevenson Street, near First, SAN FRANCISCO
We purchase Ores, Bullion, etc. Ores worked Tests made with care. Also, Assays of Gold, Silver Copper, Lead, Tin and other Metals. 23v22tf

LEOPOLD KUH,
(Formerly of the U. S. Branch Mint, S. F.)
Assayer and Metallurgical CHEMIST,
No. 611 Commercial Street,
(Opposite the U. S. Branch Mint)
SAN FRANCISCO, CAL. 7v21-3m

CALIFORNIA ASSAY OFFICE
No. 512 CALIFORNIA STREET,
One Door West of Montgomery.....SAN FRANCISCO.
J. A. MARS, Assayer.
☞ Analysis of Ores, Mineral Waters, etc. 10v26

Richardson & Co., Copper Ore Wharves,
SWANSEA.
RICHARDSON & Co. have been for thirty years established in Swansea as Agents for the preparation, Sampling, Assaying, and Sale of Copper, Silver, Gold, Lead, Zinc, and all other Ores and Metals, for which they have extensive Warehouses and Wharves under cover, 1,000 feet of Quay Frontage within the Floating Dock, and the most complete Machinery and Appliances. They are also prepared to make advances against Ores in anticipation of realization, and to guarantee all payments when required. 17v24-1y

PLATINUM
Vessels, Apparatus, Sheet, Wire, Etc., Etc,
For all Laboratory and Manufacturing Purposes
H. M RAYNOR,
25 Bond street, New York.
Platinum Scrap and Ore purchased. 22v18

JOHN TAYLOR & CO.,
IMPORTERS OF AND DEALERS IN
ASSAYERS' MATERIALS,
Chemical Apparatus and Chemicals,
Druggists' Glassware and Sundries,
PHOTOGRAPHIC GOODS, ETC.,
512 and 514 Washington street, SAN FRANCISCO.
We would call the special attention of Assayers, Chemists, Mining Companies, Milling Companies, Prospectors, etc., to our large and well adapted stock of
ASSAYERS' MATERIALS
—AND—
Chemical Apparatus,
Having been engaged in furnishing these supplies since the first discovery of mines on the Pacific Coast.
WE ENUMERATE IN PART:
Assay Balances—L. Oertlings, London.
Assay Balances—Becker & Sons, Antwerp.
Chemical Balances—Becker & Sons, Antwerp.
Ore or Pulp Balances—Becker & Sons, Antwerp.
Assay Weights—Grains and Grammes.
Bullion Balances and Weights.
Humid Assay Apparatus.
Iron Furnaces—Improved, Lined with Fire Brick for Cupelling and Melting.
Tongs, Muffles, Cupel Moulds, Assay Moulds, Scorifiers, Roasting Dishes, Annealing Cups, French Clay, Assay Crucibles, Hessian (or Sand) Crucibles.
Dixon's Celebrated Black Lead Crucibles and Covers—all sizes.
Assayers' and Chemical Glassware and Assayers' Hardware—a full assortment.
Steel Stamps for hats cut to order.
ACIDS AND CHEMICALS.
Acid in carboys and bottles, commercially and chemically pure.
Bi Carb. Soda, Borax, Bone Ashes, Litharge.
Assay Lead in bars, rolled and granulated.
Black Oxide Manganese, Sodium and Sodium Amalgam, Sulphate of Copper, Quicksilver, and all Chemicals and Reagents required by Assayers and Milling Co.'s.
☞ Our Gold and Silver Tables, showing the value per ounce Troy at different degrees of fineness, and valuable tables for computation of assays in Grains and Grammes, will be sent upon application.
24v23-tf JOHN TAYLOR & CO.

ALL KINDS OF
Office Desks and Book Cases
On hand and Manufactured to Order, by
JOHNSON & BEST,
No. 311 Pine street, opposite the Pacific Bank,
18v24-6m SAN FRANCISCO.

New Incorporations.

NORTH CONFIDENCE M. Co.—Jnly 25. Location: State of California. Capital stock, $2,000,000, in 20,000 sharee. Trustees—Wm. B. Bourne, Richard Ivere, Robert Sherwood, John W. Coleman and John W. Pearcon.

FORBES HIDDEN TREASURE Co.—July 25. Object: an expedition to Cocos Island, for the purpoce of obtaining certain treasure deposited there. Capital stock, $10,000,000, divided in 500 sharee. Trustees—Walter R. Slicer, Daniel McNeil and Mocee R. Cheever.

FLOBAL M. AND M. Co.—July 26. Location: Ely District, Nevada. Capital stock, $100,000, in 20,000 shares. Trustees—Joseph Clark, M. G. Gillette, Wm. H. Taylor, John R. Wilson and C. H. Light.

FRY EXTENSION M. Co.—July 27. Location: Ely District, Lincoln county, Nevada. Capital stock, $3,000,000, in 30,000 sharee. Trustees—J. D. Fry, Coll Deane, Samuel Curtis, Robert Sherwood and Seth Cook.

TEHAMA CONSOLIDATED M. Co.—July 29. Location: Schell Creek District, White Pine county, Nevada. Capital stock, $3,000,000, in 30,000 shares. Trustees—E. J. Lewis, George Treat, John Boggs, Wm. H. Duren and J. M. Dickerson.

JOSEPHINE CON. S. M. Co.—July 31. Location: Lander county, Nevada. Capiial stock, $5,000,000, divided in 50,000 shares. Trustees—G. A. Treadwell, James R. Granniss, P. W. Van Winkle, H. H. Blake and E. L. Willard.

PATENT BARREL AND VENEER Co.—July 31. Capital stock, $500,000, in 5,000 shares. Trustees—Thomae A. Wilson, Raymond A. Duer, M. Howard Webeter, Samuel McCullough aud Charles S. Capp.

SAN FRANCISCO AND NEW YORE MINING AND COMMERCIAL Co.—July 21. Object: To carry on the business of mining and exploring for precious metals in all the Statee and Territories, and to carry on commercial business. Capital, $10,000,000, divided in 100,000 shares. Trustees—Albert Gansl, Wm. F. Babcock, Milton S. Latham, Louis Sloss, William M. Lent, Thomas H. Selby, Maurice Dore, of San Francisco, and George B. McClellan and Samuel L. M. Barlow, of New York.

Certificate of increaee of capital stock of Del Rey Silver Mining Company was filed July 25, from $100,000 to $3,000,000, divided in 30,000 shares at $100 each.

The certificate of the increase of capital stock of the Placer Gold Mining and Canal Company was filed July 29. The capital stock is increased from $40,000, divided into 400 shares, to $1,200,000, divided into 12,000 shares.

Meetings and Elections.

Trustees and officere of mining companies have been elected as follows:

Calaveras G. & S. M. Co.—Trustees, Geo. Congdon, (President) B. F. Tuttle, J. S. Niswander, G. W. Osborn and James Palache. T. B. Wingard was chosen Secretary and Wm. M. Donnell, Superintendent.

Mammoth Grove M. C.—Same officers as above.

Eclipse, Wintere and Pluto Cons. M. Co.—Trustees, H. H. Flagg, (President) F. Locau, S. Greenbaum, Geo. Treat and E. F. Stone. Joseph Marks was elected Secretary.

Stanford M. Co.—Truetees, James Dods, A. N. Towne, Thos. Comens, S. A. Raymond aud A. F. Fletcher.

Julian G. M. Co.—Trnstees, Geo. D. Roberts, J. W. Gashwiler, Thomas J. Poulterer, D. F. Verdenal and W. H. V. Cronise.

Pictou M. Co.—Trustees, A. P. Forbes, (President); H. H. Flagg and E. Skerrett; S. Phillips, Secretary.

Silver Lick Cons. M. C.—Trustees, Alphens Bull, (President) J. O. Earl, and Daniel B. Blair. A. K. Durbrow was chosen Secretary.

Original Schell Creek Cons. M. Co.; Trustees, E. B. Pond, (President) W. Leffingwell, D. L. Phillips, David Conkling and W. H. Duran. J. W. Clark was chosen Secretary, and Charles S. Coover, Superintendent.

Virginia and Gold Hill Water Co.—Trustees, J. Flood, W. S. Hobart, A. Hayward, W. S. Obrien, John Skae, A. K. P. Harmon, and J. G. Fair; W. E. Dean was chosen Secretary.

Piermont M. & M. Co.—Trustees, J. E. Perkins (President), J. De. Forrest, L. Fensier, H. N. Tilden and H. Kosminsky; J. W. Clark was chosen Secretary and E. B. Dickiuson, Superintendent.

Dayton G. & S. M. Co.—Trustees, A. K. P. Harmon, C. B. Land, W. S. Hobart, James A. Pritch and Jas. Clark; W. E. Dean was chosen Secretary.

Eliza M. & M. Co.—Trustees, T. J. Poulterer, (President), J. P. Conch, M. Mayblum, G. W. Osborne and Geo. Marshall; Secretary, T. F. Cronise.

Cederburg G. M. Co.—Trustees, J. M. Seamans, (President) S. G. Beatty, H. P. Wakelee, Elisha Lathrop Jr., and P. F. Mohrhardt. D. M. Bokee was chosen Secretary and the California National Gold Bank and Trust Co. Treasurer.

Johnson G. & S. M. Co.—Trustees elected Nicholas Steiner President, P. A. Ryan Secretary, and Peter Johnson Superintendeut.

The Lucin M. Co. have elected the following Trustees: S. B. Boswell (President), George C. Shreve, J. D. Fry, W. P. Pritchard aud James Freeborn. J. W. Clark was retained as Secretary and W. H. Forbes as Superintendent.

Trustees of the Phil. Sheridan M. Co. have been elected as follows: J. A. Pritchard, O. F. Giffin, S. A. Raymond, E. W. Jones and M. Strouse.

San Francisco Metal Market.

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, July 25, 1872.

IRON.—			
Scotch Pig Iron, ₱ ton	$60 00	@	65 00
White Pig, ₱ ton	50 00	@	65 00
Refined Bar, bad assortment, ₱ lb	04½	@	— —
Refined Bar, good assortment, ₱ lb	— 05	@	— —
Boiler, No. 1 to 4	— 05½	@	— —
Plate, No. 5 to 9	— 06	@	— —
Sheet, No. 10 to 13	— 08	@	— —
Sheet, No. 14 to 20	— 08	@	— —
Sheet, No. 24 to 27	— 09	@	— —
Horse Shoes	7 50	@	
Nail Rod	10		
Norway Iron	8		
Rolled Iron	5		
Other Irons for Blacksmiths, Miners, etc.	5	@	5
COPPER.—			
Sheathing, ₱ lb	— 40	@	— 45
Sheathing, Yellow	— 30	@	— 33
Sheathing, Old Yellow	— 12	@	— 12½
Composition Nails	— 28		— 30
Composition Bolts	— 28		— 30
TIN PLATES.—			
Plates, Charcoal, IX ₱ box	19 00		19 50
Plates, I C Charcoal	17 00		17 50
Roofing Plates	15 00		15 50
Banca Tin, Slabs, ₱ lb	— 45		— 50
STEEL.—English Cast, ₱ lb	— 15		— 15
Drill	15		15
Flat Bar	17		18
Plough Points	$ 75		
Russia (for mould boards)	12½		
QUICKSILVER.—₱ lb	— —		— 85
LEAD.—Pig, ₱ lb	— 05¾		— 05
Sheet	— 10		— —
Pipe	— 9		— 10
Bar	— 05½		— 07
ZINC.—Sheets, ₱ lb	— 11		11½
BORAX.—Refined	— 28		— 30
Borax, orude	— 5		— —

Leather Market Report.

[Corrected weekly by Dolliver & Bro., No. 109 Post st.]

SAN FRANCISCO, Thursday, July 25, 1872.

SOLE LEATHER.—The Eastern market is higher, and some tanners have advanced their prices here. We quote as below:

City Tanned Leather, ₱ lb			26@29
Santa Cruz Leather, ₱ lb			26@29
Country Leather, ₱ lb			25@28
Stockton Leather, ₱ lb			26@29
French skins continue firm. All California skins are scarce and bring full prices.			
Jodot, 8 Kil., per doz	$60	00@	
Jodot, 11 to 19 Kil., per doz	63	00@	88 00
Jodot, second choice, 11 to 15 Kil. ₱ doz	54	00@	75 00
Lemoine, 16 to 18 Kil ₱ doz	15	00@	77 50
Levin, 12 and 13 Kil., per doz	63	00@	70 00
Cornellisn, 15 to 19 Kil., per doz	53	00@	65 00
Cornellian, 12 to 14 Kil., per doz	60	00@	68 00
Ogerau Calf, ₱ doz	54	00@	
Simon, 18 Kil., ₱ doz	65	00	
Simon, 20 Kil. ₱ doz	68	00	
Simon, 24 Kil. ₱ doz	72	00	
Robert Calf, 7 and 8 Kil	35	00@	40 00
French Kips, ₱ lb	1	10@	1 30
California Kip, ₱ doz	60	00 to	80 00
French Sheep, all colors, ₱ doz	15	00	
Eastern Calf for Backs, ₱ lb	1	15@	1 25
Sheep Roans for Topping, all colors, ₱ doz	9	00@	13 00
Sheep Roans for Linings, ₱ doz	5	50@	10 50
California Russett Sheep Linings	1	75@	5 50
Best Jodot Calf Boot Legs, ₱ pair	5	25	
Good French Calf Boot Legs, ₱ pair	4	50@	5 00
French Calf Boot Legs, ₱ pair	4	00	
Harness Leather, ₱ lb		30@	37½
Fair Bridle Leather, ₱ doz	48	00@	72 00
Skirting Leather, ₱ lb		34@	37½
Welt Leather, ₱ doz	30	00@	50 00
Buff Leather, ₱ foot		18@	21
Wax Side Leather, ₱ foot		20@	22

GEO. W. PRESCOTT. C. W. SCHEIDEL. W. R. ECKART.

PRESCOTT, SCHEIDELL & CO.,

MARYSVILLE FOUNDRY.

Corner of B and Fourth streets, Marysville, Cal.

MANUFACTURERS OF

STEAM ENGINES,

STATIONARY AND PORTABLE

SAW AND GRIST MILLS,

Hydraulic Machinery,

Quartz Crushing and Amalgamating Machinery

Of every description, constantly on hand.

Plans and estimates furnished upon application. Repairs upon all kinds of Machinery promptly made, and at moderate charges.

Having unrivalled facilities, we are prepared to make to order, at short notice, anything required in our line.

Specimens of our work may be seen in all the mining regions on this coast.

Blowers, Steam Pumps, Hair Felt, **Mining Tools**

PORTABLE ENGINES, TURBINE WATER WHEELS, Wood and Iron Lahor-Ssving Machinery, Hardwsre, Belting, Lacing, Packing, and a general stock of Engineers', Miners', Farmers' and Mechanics' Tools and Mill Supplies.

TREADWELL & CO.,

At the Old Stand, } Cor. Market and Fremont Sts., SAN FRANCISCO.

eow 12v24

P O BOX 1349, PITTSBURGH, PA.

Breech-Loading Shot Guns, $40 to $300. Double Shot Guns, $8 to $150. Single Guns, $4 to $20. Rifles, $8 to $75. Revolvers, $6 to $25. SEND STAMP FOR PRICE-LIST. *Army Guns, Revolvers, &c., bought or traded for.*

5v25-eow26t

CAUTION.

Betts's Patent Capsules.

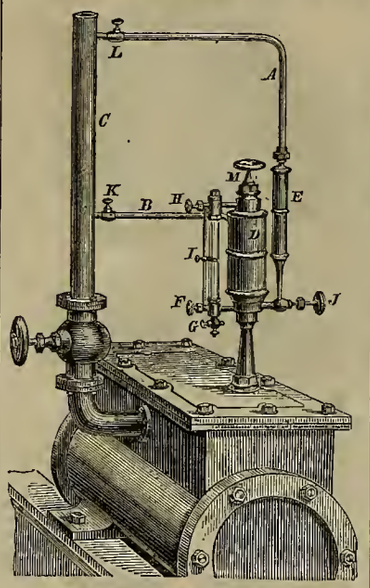
The public are respectfully cautioned that BETTS'S Patent Capsules are being Infringed

BETTS'S name is upon every Capsule he makes for the leading Merchants at home and abroad,

and he is the ONLY INVENTOR and SOLE MAKER in the United Kingdom.

MANUFACTORIES:—1, WHARF-ROAD, CITY-ROAD, LONDON, AND BORDEAUX, FRANCE.

N. Seibert's Eureka Lubricators

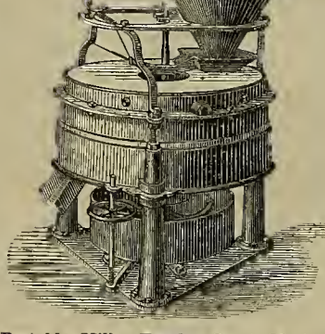


THE HIGHEST PREMIUM

Awarded by the Mechanics' Institute Fair, San Francisco, and State Fair, Sacramento, 1871.

These Lnbricators are acknowledged by all engineers to he superior to any they have ever used; feed constantly hy pressure of condensed water, supplied by pipe A, regulated under the oil hy valve J, and forced out through check valve and pipe B into the steam pipe C; it then becomes gressy steam, passes to all the valves and cylinder at every stroke of the engine; glass tube I indicates amount used per hour. Packing on rods and stems lasts longer, and the rings on the piston will not corrode. One pint of oil will last from three to six days, according to speed and size of engine; I, sliding gsuge; K, valve to shut off when engine stopps; H, F, valves to shut off in case of frost; steam does not enter the cup; it is always cool; warranted to give satisfaction. Patented February 14, 1871. Manufactured hy California Brass Works, 125 First street, S. F. 24v23tf

MILL STONES.



Portable Mills, Eureka Smut Machinee Bran Dusters, Dufour & Co.'s Celebrated Dutch Anchor Bolting Cloths, and General Mill Furnishing.

TRAVIS & WAGNER,

18v24-3m 41 First street, San Francisco.

IMPROVED

DOUBLE SURFACER.

E. & F. GLEASON,

MANUFACTURERS OF IMPROVED WOOD TOOLS,

No. 27 Haydock Street,

25v24eow PHILADELPHIA, PA.

THE "LEFFEL"

All sizes, and adapted to from 3 to 500 feet head **TURBINE Water Wheels**

Parties desiring to economize in water power will find it for their interest to send for a catalogue and price list of the "Leffel." Power pledged equal to any Overshot in the world. Address

TREADWELL & CO., San Francisco.

Who have all sizes on hand. 3v25

Mining and Other Companies.

Owing to the time necessary to mail the present large edition of the M. & S. Press, we are obliged to go to press on Thursday evening—which is the very latest hour we can receive advertisements.

Office of Alhambra Hill Mining Company,

San Francisco, July 14th, 1872.

In accordance with a resolntion adopted at a meeting of the Board of Trustees of the Alhambra Hill Mining Company, Pinto Mining District, White Pine County Nevada, held this day, a special meeting of the stockholders of said Company is hereby called, the same to be held at the office of the Company, 612 Clay street, San Francico, California, on Monday, the 19th day of August, 1872, at four o'clock, P. M., to take into consideration and decide upon the proposition to increase the capital stock of said Company, from five hundred thousand dollars, divided into five thousand shares of the par value of one hundred dollars each, the present capital stock, to five million dollars, divided into fifty thousand shares of one hundred dollars each.

(Signed) ROBT. C. JOHNSON.
E. J. MOORE,
L. JACOBI,
H. G. LANGLEY.

jul29-4t

Corona Consolidated Mining Company—

Location of works, Eureka District, Lander County, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 25th day of June, 1872, the several amounts set opposite the names of the respective shsreholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Charles Hanson	229	100	$10 00
Charles Hanson	230	100	10 00
Charles Hanson	233	50	5 00
Charles Hanson	234	20	2 00
Charles Hanson	238	50	5 00
Charles Hanson	239	50	5 00
Charles Hanson	240	50	5 00
Charles Hanson	241	50	5 00
Charles Hanson	242	50	5 00
Charles Hanson	272	50	5 00
Charles Hanson	274	50	5 00
Charles Hanson	275	25	2 50
Charles Hanson	276	25	2 50
Charles Hanson	277	25	2 50
J M Foley	151	4000	400 00
D H Hall	324	500	5 00
D H Hall	325	500	50 00
D H Hall	326	500	50 00
D H Hall	327	500	50 00
D H Hall	328	200	20 00
D H Hsll	329	200	20 00
D H Hall	330	100	10 00
D H Hall	331	100	10 00
D H Hall	332	100	10 00
D H Hall	333	50	5 00
D H Hall	334	50	5 00
D H Hall	335	50	5 00
D H Hall	336	50	5 00
D H Hall	337	25	2 50
D H Hall	338	25	2 50
D H Hall	339	25	2 50
D H Hall	340	25	2 50
H P Coon, President	160	4000	400 00
H P Coon, President	161	4000	400 00
H P Coon, President	206	3000	300 00
E A Richardson, Trustee	163	200	20 00
E A Richardson, Trustee	164	200	20 00
E A Richardson, Trustee	165	400	40 00
E A Richardson, Trustee	166	500	50 00
E A Richardson, Trustee	167	500	50 00
E A Richardson, Trustee	169	500	50 00
E A Richardson, Trustee	170	500	50 00
E A Richardson, Trustee	171	500	50 00
E A Richardson, Trustee	172	500	50 00
E A Richardson, Trustee	173	200	20 00
E A Richardson, Trustee	175	200	20 00
E A Richardson, Trustee	177	200	20 00
E A Richardson, Trustee	179	100	10 00
E A Richardson, Trustee	180	100	10 00
E A Richardson, Trustee	181	100	10 00
E A Richardson, Trustee	182	100	10 00
E A Richardson, Trustee	183	50	5 00
E A Richardson, Trustee	184	50	5 00
E A Richardson, Trustee	185	50	5 00
E A Richardson, Trustee	186	50	5 00
E A Richardson, Trustee	187	50	5 00
E A Richardson, Trustee	188	250	25 00
E A Richardson, Trustee	190	50	5 00
E A Richardson, Trustee	191	50	5 00
E A Richardson, Trustee	192	50	5 00
E A Richardson, Trustee	193	50	5 00
E A Richardson, Trustee	194	50	5 00
E A Richardson, Trustee	195	50	5 00
E A Richardson, Trustee	196	50	5 00
E A Richardson, Trustee	197	50	5 00
E A Richardson, Trustee	198	100	10 00
E A Richardson, Trustee	199	100	10 00
E A Richardson, Trustee	200	100	10 00
E A Richardson, Trustee	201	100	10 00
E A Richardson, Trustee	202	100	10 00
E A Richardson, Trustee	203	20	2 00
E A Richardson, Trustee	204	20	2 00
E A Richardson, Trustee	210	1000	100 00
E A Richardson, Trustee	211	500	50 00
E A Richardson, Trustee	212	500	50 00
E A Richardson, Trustee	213	250	25 00
E A Richardson, Trustee	214	250	25 00
E A Richardson, Trustee	215	100	10 00
E A Richardson, Trustee	216	100	10 00
E A Richardson, Trustee	217	100	10 00
E A Richardson, Trustee	218	100	10 00
E A Richardson, Trustee	219	100	10 00
E A Richardson, Trustee	220	100	10 00
E A Richardson, Trustee	221	50	5 00
E A Richardson, Trustee	222	50	5 00
E A Richardson, Trustee	223	50	5 00
E A Richardson, Trustee	224	50	5 00
E A Richardson, Trustee	225	50	5 00
E A Richardson, Trustee	226	50	5 00
E A Richardson, Trustee	258	25	2 50
E A Richardson, Trustee	269	25	2 50
E A Richardson, Trustee	270	25	2 50
E A Richardson, Trustee	271	25	2 50
W H Adams	205	10	1 00
W H Adams	267	20	2 00
L S Adams	207	200	20 00
H Dutton	208	200	20 00
C J Collins	227	100	10 00
C J Collins	311	1000	100 00
C J Collins	314	250	25 00
C J Collins	315	250	25 00
C J Collins	317	150	15 00
C J Collins	318	100	10 00
C J Collins	319	100	10 00
C J Collins	320	100	10 00
C J Collins	343	25	2 50
C J Collins	344	10	1 00
C J Collins	345	5	50
C J Collins	346	5	50
C J Collins	347	5	50
H A Cheever	244	500	50 00
H A Cheever	245	500	50 00
H A Cheever	246	500	50 00
H A Cheever	247	200	20 00
H A Cheever	248	200	20 00
H A Cheever	250	200	20 00
H A Cheever	251	200	20 00
H A Cheever	252	100	10 00
H A Cheever	253	100	10 00
H A Cheever	254	100	10 00
H A Cheever	255	100	10 00
H A Cheever	256	100	10 00
H A Cheever	257	50	5 00

Names.	No. Certificate.	No. Shares.	Amount.
H A Cheever	258	50	5 00
H A Cheever	259	50	5 00
H A Cheever	260	50	5 00
H A Cheever	261	50	5 00
H A Cheever	262	50	5 00
H A Cheever	263	50	5 00
H A Cheever	264	55	5 00
H A Cheever	265	50	5 00
H A Cheever	266	50	5 00
J Clem Uhler, Trustee	279	500	50 00
J Clem Uhler, Trustee	280	500	50 00
J Clem Uhler, Trustee	281	250	25 00
J Clem Uhler, Trustee	282	250	25 00
J Clem Uhler, Trustee	283	250	25 00
J Clem Uhler, Trustee	284	250	25 00
J Clem Uhler, Trustee	285	100	10 00
J Clem Uhler, Trustee	286	100	10 00
J Clem Uhler, Trustee	287	100	10 00
J Clem Uhler, Trustee	288	100	10 00
J Clem Uhler, Trustee	289	100	10 00
J Clem Uhler, Trustee	290	100	10 00
J Clem Uhler, Trustee	291	100	10 00
J Clem Uhler, Trustee	292	100	10 00
J Clem Uhler, Trustee	293	100	10 00
J Clem Uhler, Trustee	294	100	10 00
J Clem Uhler, Trustee	295	100	10 00
J Clem Uhler, Trustee	296	100	10 00
J Clem Uhler, Trustee	297	100	10 00
J Clem Uhler, Trustee	298	100	10 00
J Clem Uhler, Trustee	299	100	10 00
J Clem Uhler, Trustee	300	100	10 00
J Clem Uhler, Trustee	301	100	10 00
J Clem Uhler, Trustee	302	100	10 00
J Clem Uhler, Trustee	303	200	20 00
J Clem Uhler, Trustee	305	100	10 00
J Clem Uhler, Trustee	306	20	2 00
J Clem Uhler, Trustee	307	20	2 00
J Clem Uhler, Trustee	308	20	2 00
J Clem Uhler, Trustee	309	20	2 00
J Clem Uhler, Trustee	310	20	2 00
P H Sullivan	304	25	2 50
T F Cronise, Trustee	323	1000	100 00
J Cassell, Trustee	341	100	10 00
J Cassell, Trustee	342	100	10 00
W J Ranken	350	100	10 00
W J Ranken	351	100	10 00
W J Ranken	352	100	10 00
W J Ranken	353	100	10 00
Amasa Clark	349	100	10 00
H P Coon	168	2000	200 00

And in accordance with law, and an order of the Board of Trustees, made on the 25th day of June, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction at the office of the Company, 409 California street, San Francisco, Cal., on the 22d day of August, 1872, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

T. F. CRONISE, Secretary.

Office, 409 California street, San Francisco, California.

Caution.—Eagle Quicksilver Mining Company.—Location of works, Eagle Mining District, Santa Barbara County, California.

Notice is hereby given to the public not to purchase or negotiate for the following named shares, designated by the names of the delinquent owners in the Eagle Quicksilver Mining Company, as, by law, and the articles of agreement made and provided, they were duly advertised and sold in full at public auction, by John Middleton & Son, auctioneers, on Monday, the 22d day of July, 1872, for delinquent assessment thereon, and accruing costs of advertising and expenses of sale, and will not be transferred by said company:

	SHARES SOLD.	AMOUNT.
Bush, A. T.	1	$40 00
Burton, L. T.	1	40 00
Burton, Benj	1	40 00
Brinkerhoff, S. B.	2	80 00
Church, Thos. R.	1	40 00
Crane, A. M.	1	40 00
Fernald, Chas	1	40 00
Kyle, J. J.	2	80 00
Ploche, F. L. A	2	80 00
Richards, Jarret T.	1	40 00

WM. H. WATSON, Secretary

Of the Eagle Quicksilver Mining Company, Room 5, No. 302 Montgomery street, San Francisco, California.

jly27-3t, 1872.

Hudson Gold Mining Company—Location of works, Cherokee Mining District, Plumas county, State of California.

NOTICE.—There are delinquent upon the following described stock, on account of assesement (No. 1) levied on the Eighteenth (18th) day of June, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Fassett, H H	9	100	$10 00
Hansen, Geo	36	100	10 00
Ives, G L	7	100	10 00
Kenney, Chas A, Trustee	27	275	27 50
McClellan, H H	14	500	50 00
McClellan, H H	28	500	50 00
McClellan, H H	30	100	10 00
McClellan, H H	32	100	10 00
Mack, Julius	39	100	10 00
Olmsted, S E	40	375	37 50
Olmsted, S E	42	800	80 00
Rowe, Robert	35	250	25 00
Reckleffsen, J Greggory	38	100	10 00
Uhler, J Clem, Trustee	26	200	20 00
Warner, Chas H	34	250	25 50

And in accordance with law and an order of the Board of Trustees, made on the eighteenth (18th) day of June, A. D., 1872, so many shares of each parcel of said stock as may be necessary will be sold at the office of the Company, No. 411 California street, San Francisco, California, on Saturday, the seventeenth (17th) day of August, A. D. 1872, at the hour of one (1) o'clock P. M., of said day, to pay said delinquent assesements thereon, together with costs of advertising and expenses of sale.

JOS. L. KING, Secretary.

Office, 411 California street, San Francisco, Cal.

NOTICE.—At a meeting of the Board of Trustees, held on the twenty-seventh (27) day of July, A. D., 1872, the above sale was postponed till Saturday, the twenty-fourth (24) day of August, A. D., 1872, at the hour of one o'clock P. M. of said day. JOS. L. KING, Secretary,

San Francisco, July 27th, 1872. au3-3t

Morning Star Gold and Silver Mining Company—Location of works, Great Mogul District, Alpine County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 12th day of July, 1872, an assessment of One Dollar per share was levied upon the capital stock of said company, payable immediately in United States gold and silver coin, to the Secretary, at the office of the Company, Room No. 43, New Merchants' Exchange, (3rd floor,) California street, in the City and County of San Francisco, State of California. Any stock upon which said assessment shall remain unpaid on the 20th day of August, A. D., 1872, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Saturday, the 14th day of September, A. D., 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. H. BOGART, Secretary.

Office, Room No. 43, Merchants' Exchange, California street, San Francisco. jul20-4t

Kincaid Flat Mining Company—Location of Works, Tuolumne County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 17th day of July, 1872, an assessment of Three Dollars per share was levied upon the capital stock of said company, payable immediately, in United States gold coin, to the Secretary, at his office, No. 220 Clay street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 23d day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Saturday, the 14th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. B. CORNELL, Secretary.

Office, 220 Clay street, San Francisco. jul20-4t

Louise Silver Mining Company—Location of works, Ploche, Ely Mining District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 3d day of July, 1872, an assessment of ten cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, room 5, No. 302 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Saturday, the 10th day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 7th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees. WM. H. WATSON, Secretary.

Office, room 5, No. 302 Montgomery street, San Francisco. jul8.

Marcelina Silver Mining Company—Location of works, Eureka Mining District, Lander County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 24th day of July, 1872, an assessment of Thirty (30) Cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, 419 California street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 9th day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 30th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees. CHAS. E. ELLIOT, Secretary.

Office, 419 California street, San Francisco, Cal.

Mount Jefferson Milling and Mining Company.—Location of works, First Garotte, Tuolumne county, California.

Notice is hereby given, that at a meeting of the Board of Trustee of said Company, held on the 25th day of July, A. D., 1872, an assessment of Ten Cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary, at the office of said Company. Any stock upon which said assessment shall remain unpaid on Monday, the 25th day of August, A. D., 1872, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Monday, the 16th day of September, A. D., 1872, at the hour of 2 o'clock, P. M., at the office of the Company, to pay the delinquent assessment together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. W. CLARK, Secretary.

Office, 418 California street, Room No. 2. aug3-4w

Nevada Land and Mining Company—Locations, Spruce Mountain, Clifton, and Antelope Mining Districts, Elko County, State of Nevada.

Notice is hereby given, that a meeting of the Board of Trustees of said Company, held on the 18th day of July, 1872, an assessment of Eight Cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office. Any stock upon which an assessment shall remain unpaid on Saturday, the 31st day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the 19th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees. WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery street, San Francisco, California. jul20-4t

Norman Gold Mining Company---Location of works, Aqueduct Mining District, Amador County, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessement levied on the 27th day of June, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shsres.	Amount.
Eldridge, G C	17	100	$5 00
Eldridge, G C	18	100	5 00
Hosmer, D M, Trustee	43	300	15 00
Hosmer, D M, Trustee	44	500	25 00
Hallet, G H	19	100	5 00
Humphreye, W P	26	100	5 00
Humphreys, W P	27	100	5 00
Hynemann, S	55	100	5 00
Levingston, J	7	100	5 00
Owens, Thurston C, True.	155	500	25 00
Owens, Thurston C, Trus.	156	500	25 00
Plummer, M D, Trustee	2	500	25 00
Plummer, M D, Trustee	34	300	15 00
Plummer, M D, Trustee	33	80	4 00
Plummer, M D, Trustee	153	100	5 00
Sheppard, J	54	100	5 00
Stewart, G W	85	200	10 00
Sewall, G, Trustee	131	100	5 00
Sewall, G, Trustee	132	400	20 00
Thompsom, J M, Trustee.	14	500	25 00
Thompson, J M, Trustee.	49	500	25 00
Thompson, J M, Trustee.	50	300	15 00
Thompson, J M, Trustee.	107	3000	150 00
Thompson, J M, Trustee.	109	200	10 00
Thompson, J M, Trustee.	111	75	3 75
Teewilliger, N B	15	100	5 00
Wayman, W G	21	500	25 00
Wayman, W G	22	300	15 00
Wayman, W G	47	300	15 00
Wade, Rufue	24	100	5 00
Watson, Wm H, Trustee	63	1167	58 35
Watson, Wm H, Trustee	54	1000	50 00
Watson, Wm H, Trustee	57	100	5 00
Watson, Wm H, Trustee	58	100	5 00
Watson, Wm H, Trustee	69	100	5 00
Watson, Wm H, Trustee	70	100	5 00
Watson, Wm H, Trustee	71	100	5 00
Watson, Wm H, Trustee	72	100	5 00
Watson, Wm H, Trustee	73	100	5 00
Watson, Wm H, Trustee	74	100	5 00
Watson, Wm H, Trustee	75	100	5 00
Watson, Wm H, Trustee	76	100	5 00
Watson, Wm H, Trustee	77	50	2 50
Watson, Wm H, Trustee	78	50	2 50
Watson, Wm H, Trustee	79	50	2 50
Watson, Wm H, Trustee	80	50	2 50
Watson, Wm H, Trustee	81	50	2 50
Watson, Wm H, Trustee	82	50	2 50
Watson, Wm H, Trustee	83	50	2 50
Watson, Wm H, Trustee	84	50	2 50
Watson, Wm H, Trustee	85	50	2 50
Watson, Wm H, Trustee	87	20	1 00
Watson, Wm H, Trustee	88	20	1 00
Watson, Wm H, Trustee	89	20	1 00
Watson, Wm H, Trustee	90	20	1 00
Watson, Wm H, Trustee	91	20	1 00
Watson, Wm H, Trustee	92	20	1 00
Watson, Wm H, Trustee	93	20	1 00
Watson, Wm H, Trustee	96	20	1 00
Watson, Wm H, Trustee	97	30	1 50
Watson, Wm H, Trustee	98	30	1 50
Watson, Wm H, Trustee	99	30	1 50
Watson, Wm H, Trustee	100	30	1 50
Watson, Wm H, Trustee	101	30	1 50
Watson, Wm H, Trustee	102	30	1 50
Watson, Wm H, Trustee	103	30	1 50
Watson, Wm H, Trustee	104	30	1 50
Watson, Wm H, Trustee	105	30	1 50
Watson, Wm H, Trustee	106	30	1 50
Watson, Wm H, Trustee	108	666	33 30
Watson, Wm H, Trustee	130	100	5 00
Wurkheim, M	110	25	1 25

And in accordance with law, and an order of the Board of Trustees, made on the 27th day of June, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, Room 5, No. 302 Montgomery street, San Francisco, Cal., on Thursday, the 22d day of August, 1872, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

WM. H. WATSON, Secretary.

Office—Room 5, No. 302 Montgomery street, San Francisco. au3-3t

Piermont Milling and Mining Company—Location of works, Piermont Mining District, White Pine County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 10th day of July, A. D., 1872, an assessment of Sixty Cents per share was levied upon the capital stock of said company, payable immediately, in United States gold coin, to the Secretary, at the office of said Company, Room No. 2, 418 California street, San Francisco. Any stock upon which said assessment shall remain unpaid on Monday, the 12th day of August, A. D., 1872, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Tuesday, the 10th day of September, A. D., 1872, at the office of the Company, to pay the delinquent assessment, together with costs of advertising and expensee of sale. By order of the Board of Trustees.

jul20-4t J. W. CLARK, Secretary.

Spring Mountain Tunnel Company—Location of works, Lincoln County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 9th day of July, 1872, an assessment of thirty cents (30) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary. Any stock upon which said assessment shall remain unpaid on the 16th day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 9th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

M. BUFFINGTON, Secretary.

Office, Room 37, third floor, New Merchants' Exchange, California street, San Francisco, California. july 13

Office of the Tyler Mining Company, San Francisco, July 9th, 1872.

The regular annual meeting of the stockholders of the Tyler Mining Company will be held at the office of the Company, Room No 22, Merchants' Exchange, California street, San Francisco, California, on Monday, the 22d day of July, 1872, at 1 o'clock P. M. of said day

juy13-2w ALFRED K. DURBROW, Secretary.

The above meeting of Stockholders is adjourned to the 5th day of August, 1872, to be held at same hour and place.

ALFRED K. DURBROW, Secretary.

San Frsncisco, August, 22d, 1872.

jn127-2t

William Penn Consolidated Gold and Silver Mining Company—location of works, Devil's Gate District, Storey County, State of Nevada.

Notice is hereby given, that at a meeting of the Trustee of said Company, held on the 3d day of July, A. D., 1872, an assessment of ten cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No. 0, Montgomery street, San Francisco, California. Any stock upon which said assesement shall remain unpaid on the 5th day of August, 1872, shall he deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Mouday, the 2d day of September 1872, to, pay the deliaquent assessment, together with the costs of advertising and expenses of sale. By order of the Board of Trnstees. JNO. F. POPE, Secretary.

Office, No. 5 Montgomery street, San Francisco, California. July6-4t.

Winnemucca Chief Silver Mining Company—Location of Works, Humboldt County, State of Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 19th day of June, 1872, the several amounts set opposite the namee of the reapective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
John Robins	159	100	$15 00
John Robins	160	100	15 00
John Robins	161	100	15 00
John Robins	162	100	15 00
John Robins	163	100	15 00
John Robins	164	100	15 00
John Robins	165	100	15 00
John Robins	166	100	15 00
John Robins	167	100	15 00
John Robins	168	100	15 00
John Robins	176	100	15 00
John Robins	177	100	15 00
John Robins	178	100	15 00
John Robins	179	50	7 50
John Robins	209	500	75 00
John Robins, Trustee	9	500	75 00
John Robins, Trustee	10	500	75 00
John Robins, Trustee	20	500	75 00
John Robins, Trustee	21	100	15 00
John Robins, Trustee	22	100	15 00
John Robins, Trustee	23	100	15 00
John Robins, Trustee	24	100	15 00
John Robins, Trustee	25	50	7 50
John Robins, Trustee	26	50	7 50
John Robins, Trustee	27	50	7 50
T F Cronise, Trustee	111	500	75 00
T F Cronise, Trustee	112	500	75 00
T F Cronise, Trustee	113	200	30 00
T F Cronise, Trustee	114	200	30 00
T F Cronise, Trustee	115	200	30 00
T F Cronise, Trustee	116	200	30 00
T F Cronise, Trustee	117	200	30 00
T F Cronise, Trustee	118	100	15 00
T F Cronise, Trustee	119	100	15 00
T F Cronise, Trustee	120	100	15 00
T F Cronise, Trustee	121	100	15 00
T F Cronise, Trustee	122	100	15 00
T F Cronise, Trustee	123	100	15 00
T F Cronise, Trustee	124	100	15 00
T F Cronise, Trustee	125	100	15 00
T F Cronise, Trustee	126	100	15 00
T F Cronise, Trustee	127	100	15 00
T F Cronise, Trustee	128	100	15 00
T F Cronise, Trustee	129	100	15 00
T F Cronise, Trustee	130	100	15 00
T F Cronise, Trustee	131	100	15 00
T F Cronise, Trustee	132	100	15 00
T F Cronise, Trustee	133	100	15 00
T F Cronise, Trustee	134	100	15 00
T F Cronise, Trustee	135	100	15 00
T F Cronise, Trustee	136	100	15 00
T F Cronise, Trustee	137	100	15 00
T F Cronise, Trustee	138	50	7 50
T F Cronise, Trustee	139	50	7 50
T F Cronise, Trustee	140	50	7 50
T F Cronise, Trustee	141	50	7 50
T F Cronise, Trustee	142	50	7 50
T F Cronise, Trustee	143	50	7 50
T F Cronise, Trustee	144	50	7 50
T F Cronise, Trustee	145	50	7 50
T F Cronise, Trustee	146	50	7 50
T F Cronise, Trustee	147	50	7 50
T F Cronise, Trustee	148	50	7 50
T F Cronise, Trustee	149	50	7 50
T F Cronise, Trustee	150	50	7 50
T F Cronise, Trustee	151	50	7 50
T F Cronise, Trustee	152	50	7 50
T F Cronise, Trustee	153	50	7 50
T F Cronise, Trustee	154	50	7 50
T F Cronise, Trustee	155	50	7 50
T F Cronise, Trustee	156	50	7 50
T F Cronise, Trustee	157	50	7 50
T F Cronise, Trustee	172	100	15 00
T F Cronise, Trustee	173	100	15 00
A C Peachy	52	3000	450 00
A C Peachy	53	1000	150 00
J H Crossman	74	200	30 00
J D Minor	11	100	15 00
M S Thompson	12	100	15 00
J J Lynn	13	100	15 00
O W Carter	14	100	15 00
M S Bonnifield	16	50	7 50
M S Bonnifield	17	50	7 50
T J Poulterer, Trustee	28	500	75 00
T J Poulterer, Trustee	29	500	75 00
T J Poulterer, Trustee	30	500	75 00
T J Poulterer, Trustee	32	500	75 00
T J Poulterer, Trustee	33	500	75 00
T J Poulterer, Trustee	34	500	75 00
T J Poulterer, Trustee	35	500	75 00
T J Poulterer, Trustee	36	500	75 00
T J Poulterer, Trustee	37	500	75 00
T J Poulterer, Trustee	38	500	75 00
T J Poulterer, Trustee	39	500	75 00
T J Poulterer, Trustee	40	500	75 00
T J Poulterer, Trustee	41	500	75 00
T J Poulterer, Trustee	42	500	75 00
T J Poulterer, Trustee	43	500	75 00
T J Poulterer, Trustee	44	500	75 00
T J Poulterer, Trustee	46	500	75 00
T J Poulterer, Trustee	47	500	75 00
T J Poulterer, Trustee	48	500	75 00
T J Poulterer, Trustee	49	500	75 00
T J Poulterer, Trustee	50	500	75 00
T J Poulterer, Trustee	51	500	75 00
T J Poulterer, Trustee	75	500	75 00
T J Poulterer, Trustee	76	200	30 00
T J Poulterer, Trustee	77	200	30 00
T J Poulterer, Trustee	78	100	15 00
T J Poulterer, Trustee	79	100	15 00
T J Poulterer, Trustee	80	100	15 00
T J Poulterer, Trustee	81	100	15 00
T J Poulterer, Trustee	82	100	15 00
T J Poulterer, Trustee	83	100	15 00
T J Poulterer, Trustee	84	50	7 50
T J Poulterer, Trustee	86	50	7 50
T J Poulterer, Trustee	87	50	7 50
T J Poulterer, Trustee	88	50	7 50
T J Poulterer, Trustee	89	50	7 50
T J Poulterer, Trustee	91	50	7 50
T J Poulterer, Trustee	93	35	5 25
T J Poulterer, Trustee	95	25	3 75
T J Poulterer, Trustee	96	25	3 75
T J Poulterer, Trustee	109	25	3 75
T J Poulterer, Trustee	110	25	3 75
T J Poulterer, Trustee	169	100	15 00
T J Poulterer, Trustee	170	100	15 00
T J Poulterer, Trustee	171	100	15 00
J Clem Uhler, Trustee	54	500	75 00
J Clem Uhler, Trustee	56	500	75 00
J Clem Uhler, Trustee	57	500	75 00
J Clem Uhler, Trustee	58	500	75 00
J Clem Uhler, Trustee	59	200	30 00
J Clem Uhler, Trustee	60	100	15 00
J Clem Uhler, Trustee	61	100	15 00
J Clem Uhler, Trustee	62	100	15 00
J Clem Uhler, Trustee	63	100	15 00
J Clem Uhler, Trustee	64	100	15 00
J Clem Uhler, Trustee	65	100	15 00
J Clem Uhler, Trustee	66	100	16 00
J Clem Uhler, Trustee	67	100	15 00
J Clem Uhler, Trustee	68	50	7 50
J Clem Uhler, Trustee	69	50	7 50
J Clem Uhler, Trustee	70	50	7 50
J Clem Uhler, Trustee	71	50	7 50
J Clem Uhler, Trustee	72	50	7 50
J Clem Uhler, Trustee	73	50	7 50
J Clem Uhler, Trustee	180	500	75 00
J Clem Uhler, Trustee	181	500	75 00
J Clem Uhler, Trustee	182	500	75 00
J Clem Uhler, Trustee	183	500	75 00
J Clem Uhler, Trustee	184	100	15 00
J Clem Uhler, Trustee	185	100	15 00
J Clem Uhler, Trustee	186	100	15 00
J Clem Uhler, Trustee	187	100	15 00
J Clem Uhler, Trustee	188	100	15 00
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J Clem Uhler, Trustee	194	100	15 00
J Clem Uhler, Trustee	195	100	15 00
J Clem Uhler, Trustee	196	100	15 00
J Clem Uhler, Trustee	197	100	15 00
J Clem Uhler, Trustee	198	100	15 00
J Clem Uhler, Trustee	199	50	7 50
J Clem Uhler, Trustee	200	50	7 50
J Clem Uhler, Trustee	201	50	7 50
J Clem Uhler, Trustee	202	50	7 50
J Clem Uhler, Trustee	203	50	7 50
J Clem Uhler, Trustee	204	50	7 50
J Clem Uhler, Trustee	205	50	7 50
J Clem Uhler, Trustee	206	50	7 50
J Clem Uhler, Trustee	207	50	7 50
J Clem Uhler, Trustee	208	50	7 50
L L Robinson	210	500	75 00

And in accordance with law, and an order of the Board of Trustees, made on the 19th day of June, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, No. 409 California street, San Francisco, California, on the 20th day of August, 1872, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

T. F. CRONISE, Secretary.

Office, 409 California Street, San Francisco, California.

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MOLDING, MORTISING, TENONING AND SHAPING MACHINES,

BAND SAWS,

SCROLL SAWS,

Planing & Matching MACHINES, ETC.,

For Railroad, Car, and Agricultural Shops, Etc., Etc.

Superior to any in use

J. A. FAY & CO.,

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ESTABLISHED 1851.

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MARINE AND STATIONARY,

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Foundry and Iron Works.

HINCKLEY & CO.,

MANUFACTURERS OF

STEAM ENGINES,

Quartz, Flour and Saw Mills,

Hayes' Improved Steam Pump, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

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These Works have lately been increased, by additional Tools, and we are now able to turn out any kind of work, equal to and cheaper than any establishment in the State; that is to say:—

STEAM ENGINES,

Flour and Saw Mills,

QUARTZ MACHINERY

Printing Presses,

AND MACHINERY MADE OF EVERY DESCRIPTION.

Improved Safety Store Hoists,

Fitted with Catting's Patent Cams, unequaled for safety, convenience and cheapness. This Hoist can be built for about half the price of any other in use. To be seen at HAWLEY & CO.'S.

ALSO, MANUFACTURER AND SOLE AGENT FOR

Pracy's Celebrated Governor.

TURNING LATHES, Etc., constantly on hand.

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Sacramento.

ROOT, NEILSON & CO.,

MANUFACTURERS OF

STEAM ENGINES, BOILERS,

CROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR

Dunbar's Patent Self-Adjusting Steam Piston

PACKING, for new and old Cylinders.

And all kinds of Mining Machinery.

Front Street, between N and O streets,

SACRAMENTO CITY.

PACIFIC

Rolling Mill Company,

SAN FRANCISCO, CAL.

Established for the Manufacture of

RAILROAD AND OTHER IRON

—AND—

Every Variety of Shafting,

Embracing ALL SIZES of

Steamboat Shafts, Cranks, Piston and Connecting Rods, Car and Locomotive Axles and Frames

—ALSO—

HAMMERED IRON

Of every description and size.

☞ Orders addressed to PACIFIC ROLLING MILL CO., P. O. Box, San Francisco, Cal., will receive prompt attention.

☞ The highest price paid for Scrap Iron 9v143

San Francisco Boiler Works, 123 and 125 Beale Street, San Francisco.

F. I. CURRY (late Foreman of the Vulcan Iron Works), Proprietor.

High and Low Preesure

BOILERS

of all descriptions.

SOLE

Manufacturers of the

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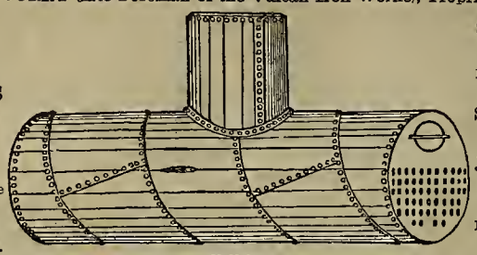
SPIRAL BOILER.



Sheet Iron Work of every DESCRIPTION done at the Shortest Notice.

All kinds of

JOBBING

and

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Promptly Attended to.

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MINING STEAM PUMPS.

DAVID STODDART,

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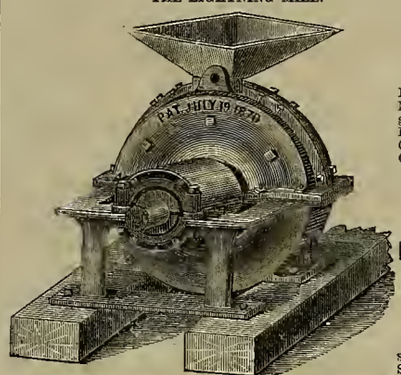
THE LIGHTNING MILL.



THE

LIGHTNING MILL,

For Pulverizing Quartz, "Charleston Rock," and all Native Phosphates, Flint, Feldspar, Iron Ore, Manganese, Antimony, Carbon, Corundum, Old Crucibles, Barytes, Brimstone, Slate, Soapstone, Graphite, Glass, Marble, Plaster, Anthracite and Bituminous Coals, etc.

WM. STEWART'S

Patent Bone Mills and Crushers.

For Grinding Bones, Rock, Quartz, and all hard substances; also, Corn, Wheat, Oats, Barley, Coffee, Spices, etc.

WALKER BROS. & CO., Twenty-third and Wood Streets, Philadelphia, Sole Manufacturers of Stewart's Celebrated Patent Bone Mills and Crushers, A. W. Stranb & Co.'s Patent Revolution French Burr Mill and A. Duval's Patent Centrifugal Pumps.

PORTABLE

DRILLING MACHINES,

THORNE & DE HAVEN,

Twenty-third and Cherry Streets, Philadelphia.

These machines can be placed with as much facility as a ratchet brace, and can be used in any position, at any distance, and in any direction from the power.

The No. 1 is capable of drilling up to 1¼ inches in diameter; the No. 2 up to 1¾ inches; and the No. 3 up to 2¼ inches, and boring up to 4 inches.

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STEIGER & BOLAND,

IRON FOUNDERS.

IRON CASTINGS of all descriptions at short notice.

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CALIFORNIA BRASS FOUNDRY,

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ALL KINDS of Brass, Composition, Zinc, and Babbitt Meta Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch

☞ PRICES MODERATE. ☜

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LIGHT AND HEAVY CASTINGS,

of every description, manufactured 24v16qr

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MANUFACTURERS OF ALL KINDS OF

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(The Oldest and most Extensive Foundry on the Pacific Coast).

Cor. First and Mission Sts.,

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Marine, Locomotive and Stationary Engines Quartz Crushing and Amalgamating Machines, Mill Irons and Brass and Iron Castings, of every description, made to order.

Steamboat Repairing, Boiler Making, Turning and Finishing,

EXECUTED WITH DISPATCH.

Beet Sugar Machinery complete in every part—made a specialty.

OIL MACHINERY.

A complete set of Machinery of our own design and patent for extracting oil from Castor Bean, dispensing with Hair Cloth. Also Machinery for Flax Seed Oil, Mustard Seed Oil, and Sun Flower Seed Oil.

MARBLE MACHINERY

For sawing Marble of any thickness or size.

Irrigating Pumps. Steam Pumps.

Plans, Estimates, and Advice promptly supplied.

H. J. BOOTH. GEO. W. PRESCOTT. IRVING M. SCOTT

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Miners' Foundry and Machine Works,

CO-OPERATIVE,

First Street, bet. Howard and Folsom, SAN FRANCISCO.

Machinery and Castings of all kinds.

THE RISDON

Iron and Locomotive Works.

INCORPORATED.....APRIL 30, 1868.
CAPITAL.....$1,000,000.

LOCATION OF WORKS:

Corner of Beale and Howard Streets,

SAN FRANCISCO.

Manufacturers of Steam Engines, Quartz and Flour Mill Machinery, Steam Boilers (Marine, Locomotive and Stationary), Marine Engines (High and Low Pressure). All kinds of light and heavy Castings at lowest prices. Cams and Tappets, with chilled faces, guaranteed 40 per cent. more durable than ordinary iron.

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WM. H. TAYLOR.....President.
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JOSEPH MOORE.....Superintendent.
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OSCAR LEWIS. S. S. MORRILL.

CITY IRON WORKS,

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LEWIS & MORRILL,

Manufacturers of all kinds of Architectural and Ornamental Iron Work,

LAUNDRY MACHINERY, STEAM ENGINES, ETC.

Agricultural Work and all kinds of Blacksmithing and Jobbing done with promptness and at reasonable prices. Orders from the country promptly executed.

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Machinery.

Varney's Patent Amalgamator.

These Machines Stand Unrivaled.

For rapidity pulverizing and amalgamating ores, they have no equal. No effort has been, or will be spared, to have them constructed in the most perfect manner and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the apperture and between the grinding surfaces.—Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Setlers made on the same principle excel all others They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill-men are invited to examine these pans and setlers for themselves, at the office, 229 Fremont Street, San Francisco.

FOR SALE.

A 10-STAMP QUARTZ MILL,

Known as the Montezuma Mill, in Montezuma District, Nye County, Nevada.

All in running order, with Pans, Belting, Furnaces, etc. In a good locality for custom work. The mill can remain or be removed.

THIS PROPERTY CAN BE BOUGHT AT

A LOW FIGURE.

Inquire of R. T. VAN NORDEN,

607 Montgomery street, San Francisco.

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A Blake's Crusher

FOR SALE CHEAP.

One of Blake's Patent Ore Crushers, size 8x10, second-hand and in perfect order, is offered for sale cheap. Also,

A STEAM ENGINE,

8x16, and another 6x12, second-hand and in good order. Also,

A New Mining Pump,

6-inch bore and 5-feet stroke, double acting.

All of the above will be sold at good bargains by

J. HENDY,

21v24tf No. 32 Fremont street, San Francisco.

P. J. POTTER. J. W. HOFFMAN.

POTTER & HOFFMAN,

Railway, Engineer and Machinists' Supplies,

19 and 21 South Fourth Street,

PHILADELPHIA.

Have a large stock of all leading articles constantly on hand at lowest market rates.

☞ Send for Price List. 24v24-eow12t

The Hesse Grinder and Amalgamator.

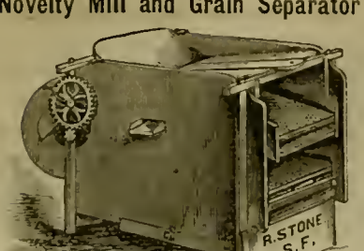
BEST IN USE!

Especially well adapted for the Reduction of Sulphuret Ores.

LORD & PETERS, Agents,
304 Battery street, San Francisco, Cal.

☞ Send for Circular. 13v24-3m

THE PATENT
Novelty Mill and Grain Separator



one of the greatest improvements of the age for cleaning and separating Grain, while it combines all the essential qualities of a first-class Fanning Mill. It also far excels anything that has been invented for the separation of Grain. It has been thoroughly tested on all the different kinds of mixed Grain. It takes out Mustard, Grass Seeds, Barley and Oats, and makes two distinct qualities of wheat if desired.

For further information apply to

R. STONE,
26v3 422 Battery street, San Francisco.

POWER, TAINTER & CO.,

MANUFACTURERS OF

WOOD-WORKING MACHINERY.

3003 Chestnut street, (West end Chestnut street Bridge) PHILADELPHIA.

☞ Woodworth Planers a Specialty. 4v25-3m

IMPORTANT TO MINERS AND MILL MEN.

Silver-Plated Copper Amalgamating Plates, for Saving Gold.

Of all sizes and in any quantity, furnished to order. Full instructions sent for operating.

Particular attention given to plating goods for Builders, Plumbers, etc. Hotel and Restaurant work re-plated.

SAN FRANCISCO GOLD AND SILVER PLATING WORKS,
655 Mission street, San Francisco.

2v25-3m E. G. DENNISTON, Proprietor.

Notice is hereby given, that the copartnership heretofore existing between A. J. Severance, Charles W. Randall and J. Gus. Burt, under the firm name of "Severance, Hoit & Co.," is this day dissolved by mutual consent. A. J. Severance, having purchased all the interest of his late partners, will continue the business of manufacturing and selling Diamond Drills, as before, under the style of A. J. Severance & Co.

Dated San Francisco, Nov. 24, 1871.

Office, 315 California street. A. J. SEVERANCE,
CHAS. H. RANDALL.
22-v23-tf J. GUS. BURT.

J. M. STOCKMAN,

Manufacturer of

PATTERNS AND MODELS,

(Over W. T. Garratt's Brass Foundry).

N. W. corner Natoma and Fremont streets, S. F. Entrance on Natoma street. 6v23-3m

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Sporting, Hunting, and Target Rifles.

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The "Sportsman's" Delight, the "Hunter's" Favorite, the "Target-Shooter's" Pride. Also

REVOLVERS FOR HOUSE USE.

In these days of thieves and Burglaries, every householder should have a revolver for home protection.

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Every gentleman should have one for protection against dogs and rowdies, and for field use.

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THE

Risdon Iron and Locomotive Works

Corner Howard and Beale Streets,

Are prepared to make SHEET IRON AND ASPHALTUM PIPE, of any size and for any pressure, and contract to lay the same where wanted, guaranteeing a perfect working pipe with the least amount of material.

Standard sizes of railroad Car Wheels, with special patterns for Mining Cars. These small wheels are made of the best Car Wheel Iron, properly chilled, and can be fitted up with the improved axle and box—introduced by this company, and guaranteed to outlast any other wheels made in this State.

☞ All kinds of Machinery made and repaired.

24v22-3m JOSEPH MOORE, Superintendent.

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Potrero, Solano street, bet. Tennessee and Minnesota streets, SAN FRANCISCO.

Manufacturers of New Files.

Old Files re-cut and warranted equal to new.

REAPER AND MOWER SECTIONS, BARS AND KNIVES COMPLETE,

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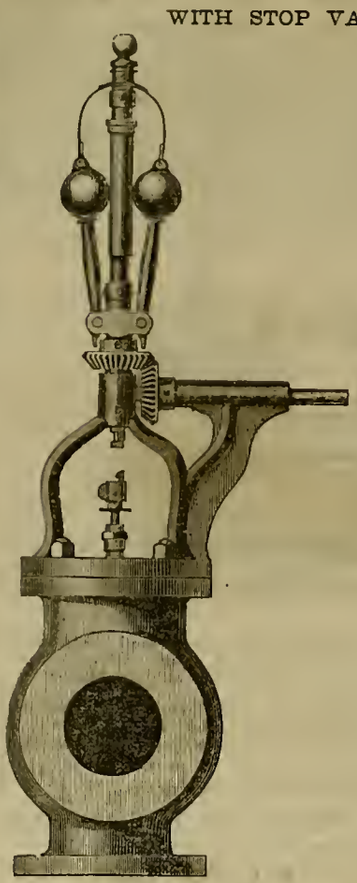
HENDY'S
Improved Lamont Steam Engine Regulator,

WITH STOP VALVE ATTACHED.



PERFECTLY RELIABLE.

Rapidly Superceding all other

GOVERNORS

Wherever Introduced.

We Invite the Attention of those

INTERESTED IN OR USING

STEAM ENGINES,

TO OUR

IMPROVED REGULATOR AND CUT-OFF,

FOR EITHER

Stationary or Portable

ENGINES.

An Examination Will

BE SUFFICIENT TO SATISFY THE

MOST SKEPTICAL

OF ITS UTILITY AND

SIMPLICITY,

And the many References in Our Possession

FROM ENGINEERS WHO ARE

Using them, attest their

PRACTICAL SUPERIORITY

Over all others.

We refer to Union Iron Works; Pacific Iron Works; Fulton Iron Works; M. Taylor, Grass Valley; Phœnix Quicksilver Mining Co., Napa Co.; Samuel McCurdy, Nevada Co., and others.

JOSHUA HENDY,

Office and Works, 32 Fremont Street, San Francisco.

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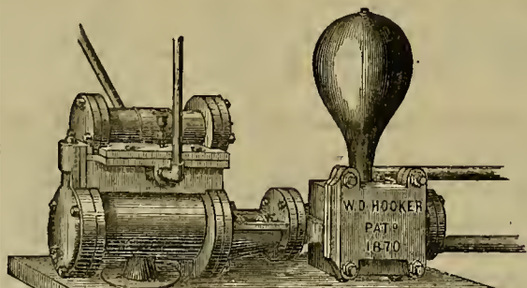
Hooker's Patent Direct Acting Steam Pump.



SIMPLE, CHEAP AND DURABLE.

Adapted for all purposes for which Steam Pumps are used. Manufactured by the inventor and patentee, at *Hooker's Machine Works, No. 112 Spear street, San Francisco.*

☞ SEND FOR CIRCULAR.

N. B.—Also manufacturer of Hooker's Deep Well and Double-Acting Force Pump. Received the Silver Medal awarded at the last Mechanics' Fair in San Francisco. 23v24-1am6m-bp

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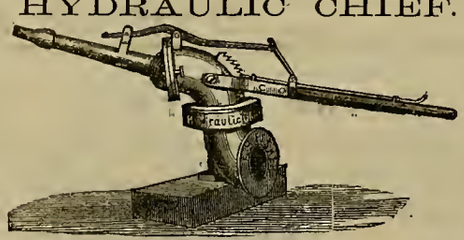
HYDRAULIC CHIEF.

FISHER'S KNUCKLE JOINT AND NOZZLE

IS THE

Cheapest and Best Hydraulic Machine in use.



MACHINES Manufactured TO ORDER, to throw from One to an eight-inch STREAM.

The only reliable party in the Hydraulic business who protects his patrons.

9v23-tf Address F. H. FISHER, Nevada, Cal.

HYDRAULIC MINERS, TAKE NOTICE—I hereby caution Miners and Manufacturers against making, buying, selling or using a Hydraulic Machine or Joint known as the Little Giant, manufactured and sold by R. R. & J. Craig and Richard Hoskin, as the same is an infringement upon the invention of the machine known as FISHER'S HYDRAULIC CHIEF, secured by Letters Patent, No. 110,222, dated Dec. 20, 1870. All parties participating in such infringements will be rigorously prosecuted. Nevada, Jan. 13th. F. H. FISHER.

The Pacific Glue Manufacturing Co.

MANUFACTURERS, IMPORTERS AND DEALERS IN

GLUE, CURLED HAIR,

— AND —

NEATS-FOOT OIL.

Store.....408 Market Street,

Between Battery and Sansome, San Francisco.

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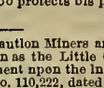
I. S. VAN WINKLE. C. W. DAVENPORT.

VAN WINKLE & DAVENPORT,

IMPORTERS AND DEALERS IN



Iron, Steel and Heavy Hardware,

CUMBERLAND COAL,

Axles, Springs, Blacksmith's Tools, Etc.,

Removed from Sacramento to

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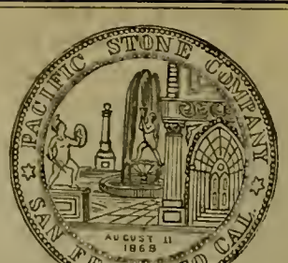
21v24-1y



PACIFIC STONE COMPANY.

Ransome's Patents,

For which Commissioners for the International Exhibition of 1862 awarded the Prize Medal, and Gold Medal at the Mechanics' Institute Fair, 1871, of San Francisco.

The Pacific Stone Company call the especial attention of Architects, Engineers and the public in general, to the SUPERIOR QUALITY of the Stone now being manufactured by them in this city under the Ransome Patents. They make to order and keep in stock:

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Filters, etc., etc.,

Together with Ransome's Celebrated Free-Grit Grindstones, all of which we guarantee superior, and at a price far below that of hand-cut work.

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Full stock constantly on hand of all the different parts of the Winchester Arms.

Cartridges in cases (Brand H), manufactured by the W. R. A. Co. expressly for their arms.

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Of SUPERIOR QUALITY, FRESH FROM THE MILLS. It being constantly received and transported into the interior, is delivered to the consumer within a few days of the time of its manufacture, and is in every way superior to any other Powder in Market.

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For the half year ending with 30th June, 1872, a dividend has been declared at the rate of nine and six-tenths (9 6-10) per cent. per anoum on Term Deposits, and eight (8) per cent. per anuum on Ordinary Deposits, free of Federal Tax on deposits, payable on and after 10th July, 1872. By order.

jy13-1m LOVELL WHITE, Cashier,

Rubber and Oak-Tanned Leather **Belting**

New Stock, just in; Pawtucket manufacture; standard quality—warranted *the best*. Come and see and get prices, or give it a trial. Sold low by

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5½x12 | 6x12 | 7x12 | 8x12 | COOK, RYMES & CO.'S, WITH VERTICAL Boilers and heavy Iron Beds, with or without Trucks. For sale at Eastern prices, by TREADWELL & CO., Sole Agents, San Francisco. 4v25 tf

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TURNBULL & SMITH,

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WALTER TURNBULL, Member S. F. Stock & Ex. Board.

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Howard st., between Fremont and Beale, San Francisco.

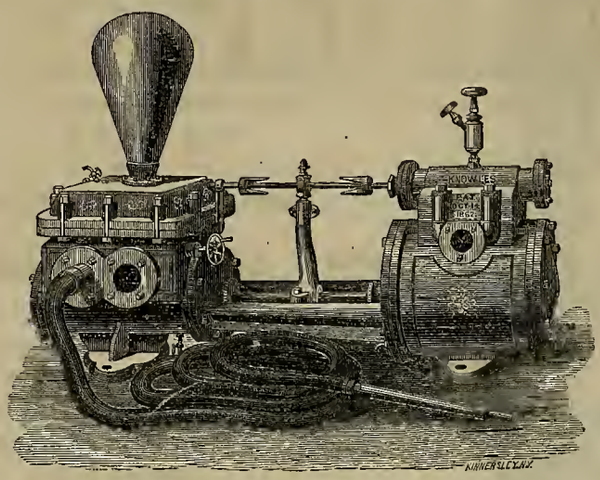
KNOWLES' PATENT STEAM PUMP.

Extract from Official Report of Mechanics' Institute Fair of San Francisco, 1871.

"In the foregoing trials it appears that the most efficient Pump on exhibition is the KNOWLES. The workmanship on this Pump is also very good. We would therefore recommend that this Pump receive a Silver Medal. (Diploma awarded). Signed by the Committee:

G. W. DICKIE, H. B. ANGELL,
CHAS. R. STEIGER, W. EPPELSHEIMER, MELVILLE ATWOOD."

v13-awbp



It has no Cranks or Fly-Wheel, and has no dead points where it will stop, consequsntly it is always ready to start without using a starting-bar, and does not require hand-work to get it past the centsr. Will always start when ths steam cylinder is filled with cold water of condensation.

The trial of Steam Pumps at the Eighth Industrial Fair in San Francisco, by a Committee of Five of the most thoroughly practical mechanics on this coast, showed the Knowles Pump to lose but 11⅛ psr cent., while others lost as high as 40 per cent., showing great differeuce in economy.

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BLAKE'S PATENT STEAM PUMP.

From the Report of the Committee on Steam Pumps, at the Seventh Industrial Exhibition of the Mechanics' Institute, San Francisco

BLAKE'S STEAM PUMP.—This Pump yielded the best results as to the quantity of water discharged as compared with its measured capacity. The valves are of brass, and well arranged. The steam valves are well arranged for operating the pumps, either fast or slow.

We recommend that a Medal be awarded to it, as THE BEST STEAM PUMP. [Awarded a SILVER MEDAL, the first premium.] (Signed) JAS. SPIERS, WM. H. BIRCH.

From the Report of the Committee on Steam Pumps, at the Eighth (or *last*) Industrial Exhibition of the Mechanics' Institute, San Francisco:

BLAKE'S MINING PUMP.—This is an excellent Pump, well made, and gives a high per cent. of duty. We recommend a Diploma for this Pump. (Signed by the Committee.)

G. W. DICKIE, H. B. ANGEL, CHAS. R. STEIGER,
W. EPPELSHEIMER, MELVILLE ATWOOD.

[No other Steam Pump received other than a Diploma or honorable mention at the LAST Mechanics' Exhibition, *all other assertions to the contrary notwithstanding*. Hooker's Hand Pump was the *only* Pump of any kind whatsoever, that received a MEDAL and FIRST PREMIUM (highest award to pumps) at the *last* Exhibition, for which we are also selling agents.—*See official Report of the above Committee.*]

The trial of Steam Pumps at the Eighth Industrial Fair in San Francisco, by a committee of five of the most thoroughly practical mechanics on this coast (as above named), showed that the Blake Pump gave 86 per cent. of utilized power, while others gave but 60 per cent., showing great difference in economy.

The Blake Pump is the ONLY Steam Pump that EVER RECEIVED A SILVER MEDAL at any Exhibition of the Mechanics' Institute ever held in San Francisco or California.

☞ A complete stock of all sizes constantly on hand at the Machinery Warehouse of the Agents,

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Are now manufacturing besides the famous regular

GIANT POWDER, A NO. 2 GIANT POWDER,

Somewhat slower in its Explosion, which we recommend for

BANK BLASTING, COAL MINES,

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Steam, Liquor, Soda, Oil, Water and Flange Cocks, and Valves of all descriptions, made and repaired. Hose and all other Joints, Spelter, Solder and Copper Rivets, etc. Gauge Cocks, Cylinder Cocks, Oil Globes, Steam Whistles. HYDRAULIC PIPES AND NOZZLES for mining purposes. Iron Steam Pipe furnished with Fittings, etc. Coupling Joints of all sizes. Particular attention paid to Distillery Work. Manufacturer of "Garratt's Patent Improved Journal Metal."

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Particular attention paid to construction of

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At the lowest Market Prices.

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Worcestershire Sauce.

Declared by Connoisseurs to be the only good SAUCE.

Caution Against Fraud.

The success of this most delicious and unrivalled Condiment having caused certain dealers to apply the name of "Worcestershire Sauce" to their own inferior compounds, the public is hereby informed that the only way to secure the genuine is to ASK FOR LEA & PERRINS' SAUCE, and see that their names are upon the wrapper, labels, stopper and bottle.

Some of the foreign markets having been supplied with a spurious Worcestershire sauce, upon the wrapper and labels of which the names of Lea and Perrins have been forged, L. and P. give notice that they have furnished their correspondents with power of attorney to take instant proceedings against manufacturers and vendors of such, or any other imitations by which their right may be infringed.

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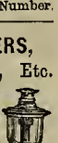
For Shafting, Engines, Machines, Etc.



Save from 75 to 95 per cent. of oil used on shafting or machinery bearings. No better investment for the amount can be made by any persou having machinery or running shafting. They are widely known for their reliability and economy. All the trouble of "oiling up" is avoided. There is no wsste of oil, and no cans are needed A single trial will prove their value. We will put them into any mill, and if not perfectly satisfactory, they may be returned at our expense, and the price will be refunded. We have a large stock on hand, of all sizes, adapted to all description of boxes. Send for Price List and Circular.

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MINING AND SCIENTIFIC PRESS.

An Illustrated Journal of Mining, Popular Science and Progressive Industry.

BY DEWEY & CO., Patent Solicitors.

SAN FRANCISCO, SATURDAY, AUGUST 10, 1872.

VOLUME XXV. Number 6.

Academy of Sciences.

The regular meeting of the Academy of Sciences was held at their rooms on Clay street, on Monday evening last, Gen. Hewston in the chair.

Contributions.

Mr. C. B. Turrill contributed an interesting collection of human remains, fossils and minerals. Among the former were a number of Indian skulls, found near Salt Lake city, each of which gave indications that their former owners came to their death in some desperate conflict.

Gov. Sam. Purdy, thought C. D. Gibbs presented an interesting collection of minerals from Utah, embracing, principally, specimens of silver ore in the various forms in which it abounds in that Territory, representing the finest "shows" of eight different mines in the Little Cottonwood locality and elsewhere. The samples exhibited a variety of combinations and different appearances.

C. D. Gibbs presented specimens of a fresh water algae, from the tule regions. Whether for the manufacture of paper, or any other purposes the substance might be adapted, the gentleman was unable to proclaim at the immediate time. The substance had the appearance of cotton batting that had been wet and allowed to adhere closely in drying.

Mr. Stearns presented a specimen of the truncatella stimsonii with a description. This is a newly discovered shell which abounds on the shores of False Bay, near San Diego; numerous specimens having been there detected by Henry Hemphill, our worthy California naturalist. The truncatella stimsonii has an average length of 22-100 of an inch, and differs from the truncatella Californica, heretofore familliarly known by the absence of surrounding bands and various peculiarities of form.

The same gentleman also regretted to announce to the Academy the death of Major Sidney S. Lyon, the distinguished geologist, at his home in Jeffersonville, Indiana. His death resulted from paralysis, produced by a wound received in the gallant defense of his country in the late war for the Union. Major Lyon was associated with Professor Owen and other eminent scientists of the East. He has visited this coast and become personally acquainted with different members of the Academy. One of his works evincing distinguished ability was the Geological Survey of the State of Kentucky.

Something to be Looked to.

Dr. Blake called the attention of the Academy to a new blight that had recently made its appearance in the Sacramento Valley, attacking the peaches and nectarines. A full-grown peach was exhibited by the gentleman, about two-thirds coated with a green mould, underneath which the substance was rotted and unpalatable. The Doctor had not observed it on the grape as yet; but expected to hear of its attacking that fruit. Never saw it on any fruit west of Sacramento. This blight was liable to become a serious detriment to our fruit-growers, particularly if extended to the vineyards.

Dr. Gibbons inquired of Dr. Blake if he was aware of any evidence of the introduction of foreign pests or blights into the United States during the last half century, and whether the fruit blight in question was of foreign origin. He had supposed that every blight that could be introduced had already appeared in the Atlantic States.

Dr. Blake could only reply that some species of thistle and blight had been introduced within that period, as he believed.

A Rare Mineral.

Dr. Blake presented a specimen of a rare mineral that existed in some part of the State of Nevada. He had received it from a person who conceived that it was a material of great value, and who declined to designate the precise locality of its existence. He had found the mineral to be a pure form of titanic acid. It was a little remarkable as a singular formation, but he, Dr. Blake, believed that it had no commercial value or utility.

Coming.

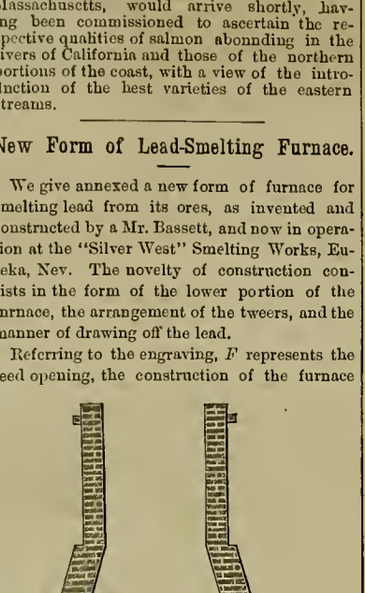
Dr. Gibbons was pleased to announce to the Academy that Professor Torry, the distinguished botanist of New York State, was on his way hither, accompanied by a portion of his family.

It was also announced by a member that Professor Livingston Stone, of the State of Massachusetts, would arrive shortly, having been commissioned to ascertain the respective qualities of salmon abounding in the rivers of California and those of the northern portions of the coast, with a view of the introduction of the best varieties of the eastern streams.

New Form of Lead-Smelting Furnace.

We give annexed a new form of furnace for smelting lead from its ores, as invented and constructed by a Mr. Bassett, and now in operation at the "Silver West" Smelting Works, Eureka, Nev. The novelty of construction consists in the form of the lower portion of the furnace, the arrangement of the tweers, and the manner of drawing off the lead.

Referring to the engraving, *F* represents the feed opening, the construction of the furnace



BASSETT'S NEW LEAD SMELTING FURNACE.

above said opening being such that an eddy must be formed just above it, so that the heavy dust from the ore must fall back on the charge, and not pass out from the top of the chimney and go to waste, as is the case in many furnaces.

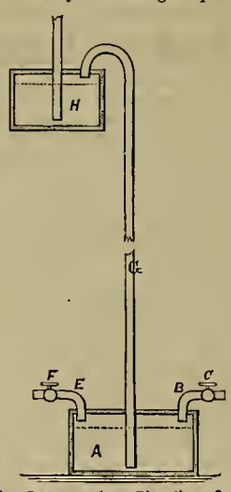
From near the bottom of the hearth of the furnace, at *H*, an opening, *A*, inclines upwards, allowing the lead, as fast as it makes, to find its way to the outside, into the pot, *C*, from which it is conveniently removed. Just above the tweers, *D D*, is an offset, *B B*, at right angles with the walls of the furnace, the object of which is to give greater working capacity to each tweer, and also to make the ore and coal form a lining for the lower portion of the furnace walls. It is claimed that when the blast leaves the nozzles of the tweers it breaks against the charge of ore and coal, and rushes back to the wall above the offset with nearly as much force as that with which it goes to the centre of the furnace; by which means it gives fifteen inches more working space over each tweer than by any other mode of furnace construction.

This furnace has 14 tweers, and each one is expected to reduce six tons of ore every twenty-four hours. A strata of half smelted ore will always lay next to the walls of the furnace, out of the reach of the smelting heat, by which the walls will be protected from the force of the blast and heat, and whereby a furnace, built of ordinary bricks, may be made to last one year under continuous blast.

This is the first furnace that has been built after the above described plan, as regards proportions. The syphon top is claimed and used by other parties, but the deep offset in the walls of the furnace is supposed to be original with Mr. Bassett.

Improved Process for Elevating Quicksilver in Quartz Mills.

One of the laborious and inconvenient tasks in carrying on the process of amalgamating the precious metals in mining operations is the frequent necessity of handling the quicksilver in



Hofmann's Process for Elevating Quicksilver.

bulk, especially in transferring it from the settlers to the amalgamation pans. To obviate this difficulty, Mr. Ottakar Hofmann of Ellsworth, Nye county, Nevada, has devised the following described invention, by which this labor is simply and readily performed by the pressure of steam, or by means of a vacuum. The process by which this is done will be readily understood by referring to the accompanying illustration.

A, represents a closed iron tank or vessel into which the quicksilver is admitted through a pipe, *B*, until the tank is almost filled, when the cock, *C*, is closed so as to cut off communication through the pipe, *B*.

E is a steam pipe which communicates with the tank which is also provided with a cock, *F*. *G* is a vertical pipe which passes down through the top of the tank, *A*, and terminates near the bottom. This pipe extends upward and communicates with another tank, *H*, or with a pan, as the case may be.

After the quicksilver has been admitted into the tank, *A*, and the cock, *C*, has been closed, the cock, *F*, is opened and steam forced into the tank until a sufficient pressure is obtained to drive the quicksilver up into the upper tank, *H*. If necessary, the tank, *H*, can also be made air-tight, and another pipe similar to *G*, led from it up into another tank above, as shown.

Instead of a pressure in the vessel, *A*, a vacuum could be produced in the upper tank, *H*, and the quicksilver drawn up in the same manner. By this means we avoid the necessity of lifting the quicksilver physically and carrying it from the settlers to the pans.

A patent for the above invention has been secured through the Scientific Press Patent Agency.

New Quicksilver Assay.

The *Berg. u. Huett. Zeitung* describes a new method of assaying quicksilver ores, which has been discovered by A. Eschka, Assayer at the General Assay Office in Vienna.

For assay sample different amounts are taken according to the richness of the ore. Up to 1 per cent. quicksilver, 10 grammes are taken; with 1 to 10 per cent., 5 grammes; 10 to 30 per cent., 2 grammes; over 30 per cent., 1 gramme.

The sample is mixed with about one-half its weight of pure iron filings, put into a porcelain crucible with a thin covering (¼ to 1 cm.) of filings, and covered over with a concave cover of fine gold, 5 cm. in diameter, 12 to 15 grammes, and having a border which fits closely to the crucible. The cavity in the cover is filled with distilled water, and the crucible is heated for 10 minutes over a gas flame or a strong spirit flame.

The quicksilver is volatilized and fastens on the gold coin. This is removed, the water poured off, the quicksilver on the convex side washed off with alcohol (from a wash bottle), dried in a water bath and, after getting fully cold, weighed. The gold cover is laid on a porcelain crucible and weighed also, after the cover has been heated (to drive off the quicksilver) it and the empty crucible are again weighed for security.

The following conditions are necessary for the success of the assay:—A well fitting cover, in order to avoid loss of mercury, and sufficient depth to hold a proper amount of water to keep it cool; filings free from fatty substances, which interfere with the quicksilver coating; washing with alcohol in order to get rid of bituminous matter and to hasten the drying; drying in 2 or 3 minutes; cooling and weighing only when quite cold; collecting the wash alcohol and, if it contains any quicksilver, obtaining this by pouring it upon the cover. The most exact results are obtained with poorer ores holding up to 10 per cent. mercury.

Railway Speed.—Fifty and sixty miles an hour for railway travel is oftener talked about than realized. A speed of sixty miles an hour for a regular passenger train has never been attempted, except in one instance, and that on a wide 7-foot gauge in England. This rapid speed pleased travellers very much, and many willingly paid the large extra charge for being shot along over the ground at a rate so great as to render the way stations of the accommodation trains almost invisible. But the railway company soon found they had passed the practicable limit of the endurance of wood and iron. They found that the "wear and tear" induced upon both road and rolling stock by such excessive speed, was also beyond the endurance of *finance*, and that high rate of speed was consequently abandoned.

There are but few trains now running on the best wide-gauge, straight roads in England, which average a speed of fifty miles an hour. The express passenger traffic is usually done at the rate of 35 to 40 miles, while the ordinary travel is about 22.

Railroad travel in this country is much slower, and necessarily so in consequence of the lack of solidity in our roads and rolling stock. Our "lightning trains" scarcely reach, and very seldom exceed, 35 miles an hour—in fact our fast trains do not average over 30 miles, while our general passenger traffic does not exceed an average of 20. Freight trains usually run about 16 to 18 miles an hour.

CORRESPONDENCE.

Notes of Travel in White Pine County, Nevada—Continued.

[By our Traveling Correspondent.]

Treasure City.

In my last I mentioned the elevatiou of this place, hut neglected to state that it was situated at a higher elevation than any city or town in the United States, and second highest in the world. It contains ahout 800 inhahitants, and lies 2 miles south of Hamilton. The "Miners' Union" have their headqnarters at this place, for "White Pine District," and numher over 400 memhers; the follcwing are the present officers of the same: President, John White; Vice-President, Henry Kames; Recording Secretary, John Lovelle; Financial Secretary, Chas. Davy; Corresponding Secretary, G. H. Baldy; Treasurer, H. L. Becker; Conductor, Wm. Ormond; Warden, John Dougherty; Finance Committee, Martin Igo, Stephen Whitford, J. C. Edwards. The principle mines in this section as far as developed, are as follows, first in order being the oldest location. The

Original Hidden Trsasurs

Was located in November, 1867. It is an incorporation, owning 800 feet of the heart of "Treasure Hill," divided into 21,333 shares, Wm. B. Bourne President; D. A. Jennings, Secretary; Capt. Wm. Boyle, Superintendent; the Trustees are Roht. Sherwood, A. Hayward, Jos. De la Montanya, John Crocker, S. Pinkham and Walter Laidlow. This company's mines are located on the northern hrow of Treasure Hill. The original owners made a fortune out of the Original Hidden Treasure hefore selling to the present incorporation, hy crushing its rich ores found on the surfacs. The Rathhurn mine was purchased by this company and consolidated with the same. This mine has had an eventful history, heing "Bulled and Beared," paid dividends, and levied assessments hy turns. It is certainly the richest mine on this hill, and nnder its present management, if not interfered with for the next 60 days, will prove so.

The Wheeler Tunnel,

Belonging to this company, is now in ahout 315 feet, and from the present indications will strike the main ore hody inside of 30 feet. Should they find the ore of paying quality, and quantity in this tunnel, a perfect furore in this stock is imminent, for it will not only prove that they have 600 feet of ore ahove them (the distance to the top) hnt will settle the question with all the other mines on this hill, that the main hodies of ore are deep down. This company are at present working 65 men. They also own what is kuown as the

Big Smoky Mill,

Which is kept constantly running on the ores taken from their mines. It is located in the suhurhs of Hamilton, has 20 stamps with a reducing capacity of 20 to 22 tons of ore per day (24 hours), run hy steam. Springs belonging to the company furnish them with free water, a big item here. Next in order is the

Pennsylvania Mine,

Located in June, 1868 and emhraces 400 feet on the great ore belt of Treasure Hill; it joins the Hidden Treasure on the south. Incorporated capital stock $2,000,000, in 20,000 shares. Office 415 Montgomery street, San Francisco. Rohert Sherwood is President, and the Trustees are A. Haywood, Andrew Jackson, G. W. Cope. D. L. McDonald, J. G. Messic and Jasper O'Farrel; the Secretary is Frank Swift; and Wm. Boyle is Superintendent.

The present working consists of two shafts, one down 40 feet, rigorously worked day and night. At ahout 20 feet more depth, ore will certainly he found, from indications. Working regularly 6 men. The next below is the

East Sheboygan Mining Co.—(Limited),

Head quarters, London, England; 47,500 shares; £2 par value; commenced work one year ago. Tunnels and shafts explore the ground 300 feet in length, and 141 feet in depth. Ore found the whole length of present works. The vein varies from 4 to 15 feet in thickness, and the ore runs from $25 to $45 per ton. The mine is situated ½ mile north of the O. H. Treasure.

The Silver Glance, belonging to the same company, is situated 1,500 feet southeast of the Eherhardt mines. It has heen worked since the commencement of the present year. The present works are carried on for the purpose of fully developiug the property. The ore hody so far as discovered, is 200 feet in length, and 15 feet thick; average grade, $35 per ton. The superintendent of the Company's property, is William Rogers, of London; A. J. Brown, resident superintendent. Next ahove the O. H. Treasure, is the

Noonday,

Located on "Bromide Flat," ahout 1,000 feet west of the North Aurora. Has its main shaft down about 120 feet; at this depth a large body of low grade ore was found. A drift in the easterly direction from the ore chamber at the hotton of this shaft, has heen run 200 feet; low grade ore appears throughout its entire length. This mine is situated on one of the "transverse hreaks" of the hill. The drift above mentioned, is run on the south line of the hreak. Two shifts of men are now engaged in driving a cross-cut through the ledge to the north. Several men are also engaged in the surface works of the mine from which good ore is heing extracted. The mine promises well for ths future; 7 men regularly employed. This is an incorporation with a capital of $2,000,000, in 20,000 shares, O. H. Bogart, President, Chas. H. Fish, Secretary, and H. A. Woodman, Superintendent.

Ward Beecher Cona. M. & M. Co.

This Company is an incorporation with a capital stock of $2,400,000, in 24,000 shares; W. B. Bonrne, Pres.; D. A. Jennings, Sec'y; B. T. Snell, Sup't; Board of Trustees: Rob't Sherwood, C. B. Land, Alvinza Hayward, W. B. Bourne, J. W. Gashwiler, Jos. De la Montanya and H. G. Blasdel. Office, 401 California street, S. F. This Company's claims are located on Treasure Hill, adjoining the Eherhardt & Aurora S. M. Co.'s property on the north, and south of the Anderson claim. Their improvements and developments consist of a verticle shaft 116 feet dsep, (known as the north shaft); one drift west 90 feet to the ledge; and a drift north along the wall 90 feet in ore; hoisting hy whim; a tunnel 300 feet long extends to this shaft. Their south shaft is down 50 feet vertically to the foot wall, which dips to the east at an angle of about $38°$, hreasting out from that point east; now in from foot of incline 80 feet in ore. Two other shafts are sunk upon this mine hetween the north and south shafts, to a depth of 112 and 65 feet. Ore is struck in both and improving; working 65 men night and day. The mill known as the Manhattan, located 1¼ miles north of Hamilton, is the property of this Company, and is kept constantly at work on the ores of the Ward Beecher Cons. M. & M. Co.'s mines. The mill has 24 stamps, with 8 large settlers, 16 pans and all the improvements necessary to rnn a mill of such capacity; run hy a steam engine of 65 horse power; it has four boilers, and has a capacity of reducing 30 tons every 24 honrs; not fairly under way at this writing; working 16 men; Dr. E. S. Gabh is Snperintendent of the mill. Every convenience, including a pay office, hoarding house, etc., with out-hnildings is attached. Average assay of this company's rock for the last 20 days was about $45 per tou.

The Mukwanago Mining Co

Situated on Treasnre Hill, White Pine, have secured United States Patents to the "Golden" and "Monnt Vernon" fissure veins. Their patents extend from the North Aurora east line across the Hill. These surveys are together 600 feet north and sonth, hy 800 feet east and west, and cross two important chamhers of ore, crossing the Hill at right angles. The Mount Vernon vein fissure can be easily traced from the Aurora ore chamher, to the summit of the Hill, and at all points where it had hsen explored good ore is found. The Golden fissnre line, is in every respect similar in character to the Mount Vernon.

All the ore chambers on Treasure Hill have an nnderlie to the east, and the North Aurora must in time he worked through the patent survey of the Mukwauago Co's. mines.

The ahove company is incorporated in Chicago, with a Capital Stock of $500,000, divided in shares of $100 each—D. T. Elmore is agent.

South Aurora Mine.

The South Aurora mine is located at the south end of the crest of Treasure Hill, hetween the North Aurora and Eberhardt mines, and is incorporated in England and owned hy the South Aurora Silver Mining Company (Limited); 60,000 shares of $5 each. The claim, or mine, is secured by a United States patent which covers 800 feet in length, measured in a north and sonth direction along the course of the ore deposits by 300 feet in width. This Co. also own 400 feet of the South Icebsrg, the North Snow-Drop and Genesee, adjoining the South Aurora on the west.

Products of mine to date, July 17th, 1872.—Ore extracted and milled, 23,000 tons. Bullion produced, $820,000.

DEAD WORK.—Over 4,000 feet of shafts, tunnels, winzes, etc., and costing from $65,000 to $75,000.

Most of the ore was taken from surface openings extending down to ahout 100 feet, below which there has been hut little ore found.

The lowest level in this mine called the Satterthwaite tunnel, the excavation including the tunnel, side or cross drifts and shafts sunk helow this level, aggregate 1,120 feet, all in limestone.

From this level the company are now commencing to prospect with the diamond drill. And there are now sunk three holes respectively 100, 105 and 106 feet deep. Expect to reach a depth of 600 to 700 feet from this point or near 1,000 feet from the surface. Much delay and disappointment has heen occasionsd by a failure on the part of the agents of the diamond drill Company to furnish drill rods.

The Stanford Mill

Is owned hy this company, and is one of the best in that part of the State. It contains a rock hreaker, thirty stamps weighing 750 pounds each, sixteen amalgamating pans, eight separators and four agitators, four retorts and two furnaces for melting hullion.

The driving power is a steam engine twenty inches diameter of cylinder hy thirty-six inches thick, to which steam is supplied by three boilers, each sixteen feet long, fifty-two inches in diameter, with fifty-one three-inch tubes, consuming six cords of wood per day. The capacity of the mill is from fifty to sixty tons daily. Located at Ebsrhardt about two and one-quarter miles from mine. In the workiug of the South Aurora mine no unnecessary lahor has been performed either in the mine, or on the surface. Officers of this company are, President, E. Satterthwaite; Secretary, Chas. Cadogan. Office, 54 Old Broad street, London., Eng.

Bullion produced hy South Aurora mine since heing purchased hy the South Aurora S. Mining Co. of London, England, up to July 1st, 1872, $371,514.20; expenditnre including all deadwork, $307,109.30; halance $64,404.60.

Ths San Juan Del Rio Mining Company.

This company own three ledges, the San Juan Del Rio, the Rio Jansiro and the Castro; they own 1,000 feet on each ledge; the mines are located on the south spur of Treasure Hill, or Mahogany Cañon; a high grade of ore is found in the San Juan Del Rio, which gives indications of heing a fissure vein. The incline sunk on the ledge is 55 feet deep and the ore hody increasing. The company propose sinking 100 feet hefore stoping; there is 70 tons of ore out, working 6 men; sinking by contract. Incorporated with capital stock of $4,800,000 in 48,000 shares; Jno. H. Dwinelle, President; Trustees:-John E. Mager; Jasper O'Farrsl, C. W. Cook, J. M. Johnson; Treasurer, C. W. Cook; Theodore Cook, Secretary. Office 331 Montgomery street. Wm. Boyle, Snperintendent.

Hamilton Mill & Mining Co.

Mines situated on Treasure Hill, mill and property situated in Hamilton, White Pine county. Capital stock 500,000; Col. Jeremiah Miller, agent.

The Pogonip Mins

Was located January 4th, 1868. It is situated ou Pleasant Valley helt, now known as Pogonip Flat, on Treasnre Hill, about 1,000 yards southwest from the South Aurora mine. It runs 800 feet north and 800 fest south, with three shafts varying from 40 to 60 feet in depth, and tunnel running northeast 80 feet, with open cuts and inclines; $40 to $60 ore in sight, in hoth shaft and tunnel.

The Othello Mine,

Adjoining the Pogonip, on the southwest, located, Decemher 14th, 1868, running 400 feet each way from point of location with shafts and open work done. Ore dipping northeast, and good ore in sight.

Charter Oak Mine,

Situated ahout 300 hundred yards northeast from the O. H. Treasure mines, east side Treasure Hill. Located July 13th, 1868; running 600 feet northerly, and 600 feet southerly, with shaft 47 feet in depth, and tunnel 900 feet running southwest; $35 and $50 rock in sight. Working from 8 to 12 men.

The Milt and Office

Are on Mill street, Hamilton. The mill, which crushes dry, has 10 stamps, new and complete, with all the late improvements of pulp conveyors, elevators, etc. There are six pans, three settlers, one agitator and retort. The engine is 75-horse power. The mill is centrally located. The spring from which the supply of water is had, is 500 yards northeast of the mill.

Lumber Interests.

Lumher commands, common, $70@$80 per M.; Clear, Truckee, $160 per M. Hendric & Co., one of the principle firms here, manage to dispose of 1,000,000 feet, annually; the principal portion of which is manufactured hy themselves. They own two sawmills about seventy miles east of Hamilton on the east side of Steptoe Valley, in the Schell Creek Range; this valley of Duck Creek is settled up already with 11 farms, and over 100 families now occupy it. This district is well watered and heavily timhered, only one of the mills (the Steptos) is now running; run by steam, working 11 men; average 5,000 feet daily.

Russel & Comins are also dealers in lumher and huilding material in Hamilton. Among the three dealerf ahout 1,200.000 feet are disposed of annually. L. P. MC.

Artesian Wells in Idaho.

We see by the Idaho Press, that artesian wells are to be resorted to in that Territory, for irrigation purposes, and supply of water for the towns. The valleys and plains of that Territory are well suited to agricultural purposes in every respect except a supply of water—the spring rains and melting of the snows are all they have to depend upon for the season. With water, the plains would "blossom like the rose," and the soil produce an abnndance of grain, grass and vegetables. The soil of the large valleys that are so destitute during the hot summer months is really better than that of Utah—which is so well adapted to agricnlture when properly irrigated. The Idaho basins with plenty of water wonld yield fine fruits, and produce the best varieties, and in great abnndance. Some experiments have been made hy enterprising parties who have located small farms where they could supply themselves with water from a river or large springs—and the resnlt has been satisfactory.

The citizens of Boise City have been devoting their attention within a few weeks to this artesian well system—they have experienced some tronhle and drawhacks from employing incompetent men, and pnt to considerable nnnecessary expense. The *Standard* gives the citizens a piece of advice to this effect: "Try it again and snceeed, and thus get back the money now apparently thrown away. It is your only chance to get even."

The Qneen river valley and all the valleys north of Snake river, are rich in soil and climate, and with plenty of water wonld make fine farming lands, and afford pleasant homes to tho agricultural citizens of Idaho. Several wells have heen dug in all these valleys aud water is nsually obtained at 20 or 30 feet helow the snrface.

The Artesian Well company now operating at Boise do not seem to nnderstand the process of drilling, whereat the press of that city advise them "not to get the cart before the horse so often." No doubt the successful sinking of the wells and a bountiful supply of water will yet reward the labors that are now being made nnder difficnlties.

SMELTING WORKS WANTED.—The Inyo *Independent* wants capitalists to put np extensive smelting works at Cottonwood, on the west beach of Owens Lake. Works at that point would be accessible to the Cerro Gordo mines as well as others in the county, and near it, from Coso on the south to Wancoba, and other places east of the Inyo range, and west, along the foot of the Sierras; north, perhaps to Benton. Such an establishment, the *Independent* thinks, wonld pay handsomely and get all the ore it wanted to work and all the bullion it conld refine. A sawmill, and flume eight miles long would have to he constructed, down which to run wood and lumher to the lake.

CHEAP RAILROAD FARES FOR WORKINGMEN.—An improvement is on foot in Boston, headed hy the Hon. Josiah Quincy, requiring the railroads centering in that city to attach daily second-class cars, at one-third of the usual rates, to at least two trains entering the city in the morning and two leaving at night. In London the railways are reqnired to run trains morning and evening ten miles for a fare not exceeding two cents a trip. The question of cheap fares and depot transit is one which demands the consideration of all great centres of population, trade, and manufactures.

SCIENTIFIC PROGRESS.

The Theory of Fermentation.

Is fermentation a process of Life or of Death? Liebig holds that it is a phenomenon connected with death, and that all substances, and especially those which are albuminoid, as albumen, fibrin, casein; or, liquids, as blood and milk, have the property in the presence of air of initiating such movements in the molecules of organic bodies as to cause them to take on new forms. According to Pasteur all fermentations are processes connected with life, and fermentable matter never undergoes fermentation without an incessant interchange of molecules between it and living cells, which grow or multiply in assimilating a portion of the fermentable matter itself.

In the souring of wine, M. Pasteur holds that a growth which he calls *Mycoderma Aceti*, forms on the surface of the liquid. This little microscopic vegetable, he says, has the power of condensing the oxygen of the air after the fashion of platinum black, or of blood globules, and conveying it to the liquid on which it rests. Liebig denies this, saying that alcohol diluted with water does not contain the elements for the formation of the *Mycoderma Aceti*, and yet it is convertible into vinegar. Pasteur replies that the water used to dilute the alcohol contains everything necessary for the development of the vegetable, and reasserts the truth of his theory, adding that if the vessels in which acetification of alcoholic solutions occurs (as in wine and beer making) are steamed or filled with boiling water for a sufficient time, vinegar will not again form; at least not until a new crop of *Mycoderma Aceti* has been produced.

Comets and Their Tails.

In discussing these erratic bodies Professor Zöllner starts with the fact that fluids as water, mercury, and solids of nearly all kinds, give off vapor of low tension, though in too small a quantity to be recognized by any tests with which we are at present acquainted. It therefore follows that the masses of matter scattered throughout space are ultimately surrounded with an atmosphere of their own vapor. If the volume of such masses is too small to exert sufficient attractive force to retain this vapor, the whole mass ultimately assumes the vaporous state. Professor Zöllner thinks the many of the small comets are such masses of vapor, while others are fluid, consisting of water or perhaps of liquid hydrocarbons, an idea which is fortified by the character of the spectra of certain nebulæ as well as of some of the smaller comets.

Regarding the self-luminosity of comets and the formation of their trains, Professor Zöllner says, there are but two causes which can produce the first of these results, viz., elevation of temperature and electric action. Setting the first aside as being utterly inadequate under the circumstances, the author thinks that the electricity developed by the solar rays, either in the process of evaporation or by the mechanical and molecular disturbances they produce, is simply sufficient to cause the luminosity and also to form the train. The explanation here given of the formation of the tails or trains of comets is exceedingly ingenious, for it not only applies to those instances in which the train is directed from the sun, acting under these circumstances by repulsion, but it also accounts for the fact that in some instances the tail is directed toward the sun, there being under these circumstances electrical attraction instead of repulsion.—*Scribner.*

SEELEY'S "EXTRACT OF HOPS."—"Within a recent period Prof. Charles A. Seely, a well-known chemist of New York, has patented a method of manufacturing the extract of hops, by the use of which the hop is greatly economized. Several experimental brewings have been made in this city, which have demonstrated that the use of the extract gives a gain of from ten to fifteen per cent. over that obtained by the use of the crude hop. Here is an improvement that promises to open a new and extensive business."

This item refers to an invention involving the very remarkable and unexpected observation, first made by Prof. Seely, that "gasoline," or rather the petroleum hydrocarbons that distil below 120 deg. F., dissolve out the whole medicinal virtue of the hop, with none of the useless matter. This extract is far superior to the hop itself. We are told that thousands of barrels of beer, instead of mere experimental brewings, have now been made with it, and highly approved of by skilled experts.—*Gaslight Journal.*

THE SIGNAL SERVICE weather reports, which were only intended originally for the benefit of commerce, have proved so useful to the agricultural interest of the country also, that Congress has authorized the War Department to extend the working of the system so as to provide specially for these interests by the collection of reports from various points in the interior.

Astronomical Researches.

One of the most interesting results of the recent investigations of astronomers, is that which tends to show that the sun is really about four millions of miles nearer the earth than is stated in the text books, the latter statement being based on the observations of the transits of the planet Venus. These transits generally happen in pairs, and with an interval of eight years between each pair—a period of 105 or 122 years intervening between the last of one pair and the first of the next. The last pair of transits occurred in 1761 and 1769. The next transit, and the one towards which much attention is now being turned, will occur in 1874, and its co-transit in 1882. The distances of the earth and planets from the sun are determined by their transits.

Within the last few years, there has been a most rigorous application of the theory of attraction of the motion of the earth, Venus and Mars, as defined by the latest and most reliable observations. The theory of the earth, following this, contains a result which shows a diminution of the assumed distance of the earth from the sun very nearly to the same amount assigned by similar researches connected with the moon. The earth's mass, as referred to the sun's, would, from the same cause, require increasing to the extent of nearly a tenth part of the whole.

From the character of these statements, it is scarcely to be doubted that every possible use will be made of that rare and remarkable event—the approaching transit of Venus—to improve the present state of knowledge in regard to the sun's distance. To this end, all the resources of modern science, and all the facilities of modern enterprise, will unquestionably be combined.

Hydro-Electric Cables.

The journal *Les Mondes* which often holds forth upon marvels, has noticed a new one in a recent number. This is a proposed system for submarine telegraphic communication by means of a tube filled with water. The invention is due to M. Ferdinand Tommasi, and models are exhibited at 49 Avenue de l'Alma. The tube is of copper 1-16 of an inch in diameter. The experiment is made with a length of 3,280 feet, and the inventor hopes to obtain, first, a speed of transmission of at least 600 signals a minute, even through a length of 1,000 miles; second, a simultaneous exchange of correspondence—that is to say, the facility of being able, by the same tube, to signal both ways at once; third, the facility for printing dispatches; and fourth, a very small cost of construction.

The thread of water is in communication at each end with two pistons of the same diameter. One of these pistons is lightly pressed, and the motion is immediately transferred to the other piston. The tube and its pistons are in connection with an electro-magnetic apparatus to facilitate the transmisson and the reception of messages.

BURNING THE DIAMOND.—It is well known to many that Newton made a most wonderful prediction respecting the diamond; his powerful mind, antedating the discoveries of modern chemistry, pronounced it to be an unctuous or combustible substance. We now know that the diamond, beautifully transparent, highly refractive as it is, is identical in its composition with charcoal, graphite, or plumbago. Yet it will not burn in ordinary air, the oxygen is too much diluted by the nitrogen; its atoms are too few in number to carry on an effective attack, but when the atmospheric air is concentrated into an atmosphere of approximately pure oxygen, each of the atomic projectiles is assisted by its neighbor, and as it strikes the surface of the diamond its motion of translation is arrested, and converted into the motion which we term heat; and the heat thus produced is so intense that the crystalline carbon is kept at nearly a white heat, so that the atoms of carbon and those of oxygen unite, and carbonic acid gas is produced. To burn a diamond the operator holds the gem in a loop of platinum wire, and first heats it to redness in a hydrogen flame, and then plunging it into a jar containing oxygen, when the pale glow at once assumes a greatly increased brightness, which is kept up until the diamond is either removed or entirely consumed.

Faraday describes the combustion of the diamond in oxygen, the necessary initial temperature having been derived from the rays of the sun. The experiment is described in the admirable life and letters of Faraday by Dr. Benco Jones.

SCIENTIFIC PHENOMENA.—A very remarkable discovery made by Professor Huggins, the celebrated astronomer and spectroscopist of England, reveals the fact that the atmosphere of the distant planet, Herschell, is composed entirely of hydrogen (gas). This wonderful announcement, will overturn many of the notions which have heretofore obtained with regard to the condition of the non distant orbs connected with our solar system. From the nature of the case, the inhabitants of that far-off world, if there are any, must live without fire, as any one spark of combustion would burn everything and explode the whole concern. Truly, science is bringing matters to light, which throw all ancient wonders in the shade, and we are fortunate in living in such a progressive age.

MECHANICAL PROGRESS.

Iron vs. Steel.

Some interesting practical experiments have recently been made at the works of Macpherson, Willard & Co., at Bordentown, N. J., which are referred to at considerable length by the *Register* published at that place. It appears that the firm above mentioned have some heavy iron contracts for the bridge across the Mississippi at St. Louis. So much depended upon the strength of the materials called for that it was determined to thoroughly test the tensity strength of all the important portions of the work furnished. To do this an enormous hydraulic pulling machine, capable of exerting a power of from three to four hundred tons was constructed. Thirty-two iron shafts, about forty feet long and weighing two tons each, were first tested with a strain of 300 tons, without stretching a hair's breadth—showing the theoretic strength throughout their entire length of perfectly sound iron.

Several steel shafts, from which much more was expected, were next submitted to the test, but with a very unexpected result. Many of the steel shafts snapped under strains, in some cases even less than those which the iron ones stood perfectly, and so great became the distrust of them that the forge was ordered to proceed with more iron ones to take the place of steel, and have now furnished nearly a hundred without a single failure.

These results also emphasize if they do not inaugurate a tendency in the engineering world to return from steel to iron when employed in large masses. We have long known all about steel in small sections, but till recently no large masses of steel could be produced, and this series of tests is the first instance on record of attempts to ascertain whether the known laws of strength of small sections hold good in large masses of either wrought iron or steel.

A practical comparison of the two metals was made two years ago on the Camden and Amboy Railroad boat, "Red Jacket," with its two screws—the shafts being of equal size, one steel, one iron. The steel one twisted off in a week, while the two iron ones (one now replacing steel), both made here, have been running ever since.

What the difficulty is with steel in the large mass is not clear, but the long list of failures of steel guns confirms the facts. Krupp, the great Prussian steel maker, has already abandoned the solid forged steel gun. The matter is exciting considerable interest in the engineering fraternity and journals, and in practice, for large masses, there is a probable return for the present to the old-fashioned wrought-iron in vogue ever since the days of Tubal Cain.

Silvered Steel Cutlery.

According to the London *Mechanics' Magazine*, Mr. Neil, of London, has devised a process for so thoroughly uniting silver with cutlery as to produce an article of great practical value. It has long been the custom to electroplate silver on steel; but whenever the external coating is ground off the steel is exposed, and thereby rendered liable to rust. In the present instance the knives are finished in the finest style, and chemically cleaned by a special process. They are then treated with perfectly pure silver, and the two are pressed together by processes which are not made known by the inventor. It asserted that the silver is driven into the pores of the steel, and that heat and moisture have no perceptible effect on the metals. The result is a knife that will not rust, is not stained by acids, and only requires washing after use. It may be sharpened any number of times, with the result of always showing a silver surface.

PLASTER AS A PROTECTION FROM FIRE.—After the conflagration in Paris, it was generally found, that with good plaster work over them, beams and columns of wood were entirely protected from the fire. In cases where limestone walls had been utterly ruined on the outside by the flames passing through the window openings, the same walls, internally escaped almost unscathed, owing to their being coated with plaster.

On many such plastered walls the distemper decorations were still to be made out. The iron roofs rendered good service, and the party walls of each house were carried up right through the roof—a most important precaution, for otherwise nothing could have prevented the disastrous conflagration from being more extensive than it was. It was also found that good woodwork in beams and posts, good wood floors, well 'pugged, and good wooden staircases, were safer and more to be depended upon than cast iron columns and stone staircases, landings and floors. Stone staircases well protected by plaster were fireproof, although not so safe as wood in case of heavy *debris* falling upon them.

EFFECT OF THE HOT BLAST ON THE QUALITY OF IRON.—It has become the opinion of many that the use of the hot blast has deteriorated the quality of pig iron. But some of the foremost iron-masters, both in this country and Europe believe that the hot blast has actually improved our iron. Fairbairne and Hodkinson's experiments show a very decided improvement both in the tensile and crushing strength of hot blast over cold blast iron.

Architecture—Ancient and Modern.

Mr. Ferguson, in his History of Architecture, remarks that while in every nation the art was successful, wherever practiced up to the sixteenth century, since then "not one building has been produced that is admitted to be entirely satisfactory or which permanently retains a hold on general admiration."

The reason of this, says Mr. Day, in the preface to his recently published work on The Science of Æsthetics, is "That ancient architecture built suitably to the purposes of the building;—or as we may express it, grasping first the idea of the building, it then with the best material at hand proceeded intelligently to embody the idea in it; modern architecture, knowing vastly more of materials and of architectural details and having more constructive skill, has overlooked the vital element of old art—the actual incorporation of the idea into the material at its control. It has leaped blindly in hope to realize a perfect form, forgetting that no perfect form can be reached but in the rational way of expressing some idea in its appropriate matter, and that this expressing, this embodying, is the governing element in all art procedure and can never be realized but intelligently and aimingly, that is rationally, and in accordance with the laws of the rational nature."

DRILLING GLASS WITH EMERY.—An experiment similar to the sand blast action was recently made in Pittsburg as follows: A ¼ inch tin tube, six feet long, was mounted at an angle of 45 deg. This tube was supplied, on its lowest end, with a nozzle of 1-12 inch diameter. The tube was filled with emery powder. A sheet of double thick window glass was placed with its plane at a right angle with the tube and within two inches of the nozzle. A plug was withdrawn from the nozzle and the emery discharged from the tube. The operation was repeated three times in eighteen minutes. The result was the drilling of a hole through the glass and the wearing away of quite a portion of it, in fish-tail shape, below the hole, where the emery passed down the incline of the glass into a receptacle. The position of the glass was then changed, and a piece of thin sheet lead, having a hole of star shape cut through it was pasted on the glass with the hole opposite the nozzle of the tube. The result was a clear cut star-shaped hole through the glass, without marring the lead pattern in the least.

This is far more valuable than may at first glance appear, and will probably be applied at some of our glass houses for drilling or ornamenting glass. The editor of the *Manufacturer* in noticing this experiment says that he once spent the best part of two days carrying two small glass retorts around Pittsburg, trying to find an artist who could make holes in the bottoms of them, and failing gave it up and substituted others made to order.

CUTTING MARBLE, ETC.—A recently devised foreign apparatus for stone cutting uses comprises a head that can be rapidly rotated and provided with diamond cutters, so arranged that while each cutter removes material and traces a path over the molded surface to be produced, all the cutters produce surfaces free from distinct scratches. For cutting mostly on a horizontal face the head is solid in which the diamonds are mounted. For molding on an edge, the cutter head holds bits of steel studded with black diamonds. A rotary tool is shaped to finish the groove, and preferably formed of brass. For cutting as with a saw into marble, a small round vertical spindle is used, the surface of which is studded with black diamonds or carbon points, so arranged in rows that the cutting points of the different rows merge their paths of action, so as to cut the whole length of the cutting plane of the shaft.

THE DANK'S FURNACE.—Mr. Danks, inventor of the revolving puddling furnace, has taken out patents for his machines in Russia, Austria, Belgium, Germany, France, and Spain. The Belgian iron-masters are sending over to England a commission to report upon the working of the furnace. In Italy one is about to be introduced, and several engineers deputed by individual continental firms are now in this country for the purpose of examining the machine in practical operation. In Scotland the invention is looked upon with much favor, and arrangements are in progress for the erection of many. Opinion is strengthening as to the validity of Mr. Danks's right, especially as he has covered the weak points by a new patent. Some of the Welsh iron-masters dispute his claims, but it is understood that Mr. T. Hughes and Mr. Webster, Queen's Counsellors, have both, after careful examination, pronounced in his favor.

DIAGONAL-JOINTED BOILERS.—According to W. R. Browne, experiments made by Mr. Kirkaldy upon the relative strength of diagonal-jointed and of longitudinal-jointed boilers, show the strength of the diagonal joint to be one-third greater than that of the longitudinal joint, the former therefore increasing the strength of the boiler in the proportion of three to four.

ANOTHER IMMENSE BRIDGE.—It is proposed to throw a great bridge over the Hudson river at Poughkepsie. The bridge will be composed of five spans of five hundred feet each, and it will be one hundred and twenty feet in hight. It will connect New England with the coal-fields of Pennsylvania.

MINING SHAREHOLDERS' DIRECTORY—Meetings, Assessments and Dividends.

[Compiled Weekly from Advertisements in Mining and Scientific Press and other S. F. Journals.]

ASSESSMENTS.

Name of Co.	Location.	Secretary.	Office in S. F.	Assm't.	Levied.	Delinq't.	Sale Day.
Alps M Co.	Ely Dist.	Chas. S. Neal.	419 Cal. St.	50.	June 18,	July 26.	Aug. 19.
Arkansas M. Co.	Ely Dist. Nev.	Geo. Davidson.	734 Mont'gry St.	25.	July 22.	Aug. 30.	Sept. 23.
Baltimore American.	Gold Hill, Nev.	J. L. King.	411 Cal. St.	$1 00.	July 13.	Sept. 2.	Sept. 20.
Beach & Paxton.				50.			Sept. 10.
Bellevue M. Co.	Placer Co.	T. F. Cronise.	409 Cal. St.	50.	June 20.	July 29.	Aug. 19.
Bowery Cons.	Ely Dist., Nev.	Chas. E. Elliot.	419 Cal. St.	75.	July 9.	Aug. 15.	Sept. 9.
Corona Cons. M. Co.	Eureka Dist.	T. F. Cronise.	409 Cal. St.	10.	June 25.	July 31.	Aug. 22.*
Denny M. Co.	Lyon Co., Nev.	Geo. R. Spinney.	320 Cal. St.	75.	July 3.	Aug. 6.	Aug. 26.
Diamond S. M. Co.	White Pine.	W. H. Codington.	402 Montgomery.	15.	June 29.	Aug. 1.	Aug. 20.
El Dorado M. Co.	Amador Co. Cal.	E. McFadden.	Cal. & Mont'gry St.	25.	Aug. 5.	Sept. 10.	Sept. 30.
Empire M. Co.	Grass Valley.	S. Pinkham.	401 Cal. St.	$10.	July 22.	Aug. 24.	Sept. 17
Empire M. Co.	1. T.	C. F. Balcom.	426 Mont'gry St.	50.	Aug. 5.	Sept 6.	Sept. 30.
Empire M. Co.	Gold Hill, Nev.	W. E. Dean.	419 Cal. St.	50.	July 10.	Aug. 13.	Sept 2.
Excelsior M. Co.	Cope Dist., Nev.	Frank Swift.	415 Mont'gry.	$2 00.	June 20.	July 27.	Aug. 19.*
Exchequer M. Co.	Gold Hill, Nev.	D. T. Bagley	401 Cal. St.	$3 00.	June 26.	July 31.	Aug. 22.
Gillis G. M. Co.	Tuolumne Co.,	Daniel Buck.	331 Mont'gry St.	10.	July 20.	Aug. 19.	Sept. 20.
Golden Chariot M. Co.	Idaho.	Louis Kaplan.	Merchants' Ex.	$2 20.	June 22.	July 28.	Aug. 17.
Hermes M. oC.	Ely Dist.	B. B. Minor.	411½ Cal. St	$1.	July 13.	Aug. 19.	Sep . 14.
Hudson G. M. Co.	Plumas Co., Cal.	J. L. King.	411 Cal. St.	10.	June 13.	July 27.	Aug. 24.*
Kincaid Flat M. Co.	Tuolumne Co.	R. H. Cornell.	220 Clay st.	$3 00.	July 17.	Aug. 23.	Sept. 14.*
Kentucky M. Co.	Ely Dist., Nev.	J. P. Cavallier.	509 Cal. St.	50.	July 2.	Aug. 10.	Aug. 31.
Lane & Kurtz M. Co.	Brit. Columbia.	B. B. Minor.	411½ Cal. St.	$5 00.	July 23.	Aug. 26.	Sept. 14.
Lemon M. & M. Co.	Eureka Dist.	I. T. Millikin.	608 Merchant.	$1 00.	May 29.	July 6.	Aug. 10.
Louise S. M. Co.	Ely Dist., Nev.	Wm. H. Watson.	302 Montgomery.	10.	July 3.	Aug. 10.	Sept. 7.
Mammoth S. M. Co.	White Pine.	L. L. King.	411 Cal. st.	10.	June 27.	July 31.	Aug. 22.
Marcelina S. M. Co.	Eureka Dist.	Chas. E. Elliot.		30.	July 24.	Sept. 9.	Sept. 30. *
Morning Star M. Co.	Alpine Co., Cal.	O. H. Bogart.	Merchants' Ex.	$1 00.	July 12.	Aug. 20.	Sept. 14.*
Mina Rica M. Co.	Placer Co.	Geo. R. Spinney.	320 Cal. St.	20.	Aug. 6.	Sept. 10.	Sept. 30.*
Mt. Jefferson M. M. Co.	Tuolumne Co.	J. W. Clark.		10.	July 25.	Aug. 26.	Sept. 16.*
National M. Co.	Nye Co., Nev.			50.	July 4.	Aug. 19.	Sept. 14.
Nevada L. and M. Co.	Elko Co., Nev.	Wm. H. Watson.	302 Montgomery.	8.	July 18.	Aug. 31.	Sept. 19.*
Newark M. Co.	Ely Dist., Nev.	D. T. Bagley.	401 Cal. St.	50.	June 12.	July 22.	Aug. 17.
Noonday S. M. Co.	White Pine.	Chas. H. Fish.	419 Cal. St.	25.	July 2.	Aug. 5.	Aug. 26.
Norman G. M. Co.	Amador Co. Cal.	Wm. H. Watson.	302 Montgomery.	5.	June 27.	Aug. 5.	Aug. 26.*
Ophir S. M. Co.	Virginia, Nev.	Jos. Marks.	Merchants' Ex.	$5 00.	July 17.	Aug. 21.	Sept. 11.
Overman S. M. Co.	Gold Hill, Nev.	T. J. Owens.	Cor. Cal. & M'y.	$4 00.	Jnne 5.	July 18.	Aug. 17.
Pacific Borax Co.	Nevada.	R. B. Noyes.	Merchants' Ex.	15.	July 5.	Aug. 6.	Aug. 30.
Pennsylvan a.	White Pine.		331 Montgomery.	40.	June 14.	July 24.	Aug. 13.
Phœnix S. M. Co.	Eureka Dist.	Chas. H. Fish.	419 Cal. St.	$1 00.	July 6.	Aug. 12.	Sept. 2.
Piermont M. & M. Co.	White Pine.	J. W. Clark.	418 Cal. St.	60.	July 10.	Aug. 12.	Sept. 10.*
Pioche W. Ex. Co.	Ely District.	T. W. Colburn.	419 Cal. St.	30.	July 12.	Aug. 22.	Sept. 16.
Potomac S. M. Co.	Nye Co., Nev.	M. Lynch.	316 Cal. St.	50.	June 6.	July 15.	Aug. 19.
Sapphire S. M. Co.	Gold Hill, Nev.	J. F. Lightner.	438 Cal. St.	30.	July 16.	Aug. 17.	Sept. 14.
Senator S. M. Co.	Nevada.	T. B. Wingard.	3 8 Cal. St.	25.	July 6.	Aug. 10.	Aug. 30.
Southern Gold Hill.	Gold Hill, Nev.	David Wilder.	Merchants' Ex.	25.	June 28.	Aug. 3.	Aug. 26.
Spring Mt. Tunnel.	Ely Dist., Nev.		419 Cal. St.	30.	July 9.	Aug. 16.	Sept. 7.*
Star Cons. M. Co.	Eureka Dist.	G. R. Spinney.	320 Cal. St.	25.	June 20.	July 29.	Aug. 20.
Sterling M. Co.	Ely Dist., Nev.	H. C. Kibbe.	419 Cal. St.	50.	July 15.	Aug. 21.	Sept. 12.
St. Louis M. Co.	Placer Co., Cal.	T. F. Cronise.	409 Cal. St.	$1 00.	July 1.	Aug. 6.	Aug. 27.
St. Patrick M. Co.	Placer Co., Cal.	D. A. Jennings.	401 Cal. St.	$3 00.	June 19.	July 27.	Aug. 19.
Tellurium G. & S. M.	Amador Co. Cal.	Wm. H Soery.	K'ny & Clay.	$1 00.	July 22.	Aug. 23.	Sept. 16.
Tehama Cons.	Schell Creek.	W. W. Stetson.	414 Cal. St.	$2.00.	Aug. 2.	Sept. 14.	Oct. 5.
Union G. M. Co.	Sierra Co., Cal.	A. K. Durhrow.	Merchants' Ex.	$1 00.	June 25.	July 31.	Aug. 19.*
Wm. Penn Cons.	Nevada.	J. F. Pope.	6 Mont'gry St.	10.	July 3.	Aug. 5.	Sept. 2.*
Winnemucca Chief.	Nevada.	T. F. Cronise.	409 Cal. St.	15.	June 19.	July 30.	Aug. 20.*
Yule Gravel M. Co.	Placer Co. Cal.	W. H. Watson.	302 Mont'gry St.	25.	Aug. 3.	Sept. 5.	Sept. 25.

MEETINGS TO BE HELD.

Name of Co.	Location.	Secretary.	Office in S. F.	An'l or Sp'l.	Date.
Alabama & Humb'dt M. Co.		W. H. Watson.	302 Montgomery St.	Annual.	Aug. 17.
Alhambra Hill M. Co.	White Pine, Nev.	H. G. Langley.	612 Clay St.	Special.	Aug. 19.*
Alta Silver Mining Co.	Nevada.	Wm. H. Watson.	302 Montgomery St.	Annual.	Aug. 15.
Caledonia S. M. Co.	Nevada.	R. Wegener.	414 Cal. St.	Annual.	Aug. 21.
Cerbat Cons. G. & S. M Co.	Arizona.	T. E. Jewell.	320 Sansome St.	Annual.	Aug. 12.
Columbia S. & M. Co.	San Diego Co.	J. W. Tripp,	408 Cal. St.	Annual.	Aug. 10.
Colnmbus M. Co.		A. Novel.	419 Cal. St.	Annual.	Aug. 19.
Dauphin M. Co.		C. F. Balcom.	426 Montgomery St.	Annual.	Aug 24.
Great Blue Gravel Range M. Co.		E. F. Hunt.	320 Montgomery St.	Annual.	Aug. 13.
Hartford M. Co.		C. H. Fish.	419 Cal. St.	Annual.	Aug. 12
Home Ticket S. M. Co.		O. F. Balcom.	426 Montgomery St.	Annual.	Aug. 19.
Impertrice Eugenia		G. Berson	712 Market St.	Special.	Aug. 26
Louisville Con. G. S. M.		Jos. S. King.	411 Cal. St.	Annual.	Aug. 19.
Occidental M. Co.	Washoe	C. E. Elliot.	419 California St.	Annual.	Aug. 17.
Pride of the Mountain.	Winnemucca Dist., Nev.	T. W. Colburn.	419 Cal. St.	Annual.	Aug. 12.
Pennsylvania S. M. A.		Frank Swift.	415 Montgomery St.	Annual.	Aug. 21.
Pennsylvania M. & M. Co.	White Pine, Nev.		331 Montgomery St.	Special.	Aug. 14.
Providence M. Co.		W. H. Knight.	331 Montgomery St.	Annual.	Aug. 24.
Revenue Cons. S. M. Co.	Arizona.	L. B. Edwards.	535 Cal. St.	Annual.	Aug. 10.
Setting Sun M. Co.	Nevada.	Henry Boyle.	Stevenson's B'lding.	Annual.	Aug. 16.
Victor S. M. Co.	Ely District.	Henry Boyle.	Stevenson's B'lding.	Annual.	Aug. 16.
Ward Beecher Cons. M. Co.	White Pine.	D. A. Jennings.	401 Cal. St.	Annual.	Aug. 20.

LATEST DIVIDENDS—Within Three Months.

Name of Co.	Location.	Secretary.	Office in S. F.	Amount.	Payable.
Belcher M. Co.	Washoe.	R. C. Kibbe.	419 California St.	$3.00	Aug. 10.
Black Diamond Coal Co.	California.			½ per cent,	June 28.
Crown Point G. & S. M. Co.	Washoe.	C. E. Elliot.	419 California St.	$3 00.	July 5.
Eastport Coos Bay Coal.	Oregon.	L. Pool.	Merchants' Ex.	$5 00.	July 12.
Keystone Quartz M. Co.	California.	L. Vesaria.		50.	July 10.
Mahogany G. & S. M. Co.	Idaho.	T. J. Owens.	402 Mont'gry, St.	$1 50.	Aug. 7.
Meadow Valley M. Co.	Ely Dist., Nev.	T. W. Colburn.	419 California St.	$1 00.	June 20.
Raymond & Ely M. Co.	Ely Dist., Nev.	A. J. Moulder.	419 California St.	$7 00.	Aug. 10.
Pioche S. M. Co.	Ely Dist., Nev.	C. E. Elliot.	419 California St.	$1 00.	Aug. 10.

—* Advertised in this journal.

STOCK SALES FOR WEEK ENDING AUG. 8—S. F. Stock and Exchange Board.

NAMES OF COMPANIES.	Feet in Mine.	Shs. in ft.	Total Shs.	FRIDAY. Shs|	Prices.	SATURDAY. Shs|	Prices.	MONDAY. Shs|	Prices.	TUESDAY. Shs|	Prices.	WEDNESD'Y Shs|	Prices.	THURSDAY. Shs|	Prices.
Alpha.....*	300	20	6000	1355	56 @59¼	40	62 @63	90	61½@63	125	62½@63½	130	65 @67	30	66 @67
Alps.....§	800	37½	30000	100	31½	160	31½@ 33½	300	31½@ 33½	.....	.....	130	41½@ 43½	70	43½@ 43½
American Flag..§	2,600	11½	30000	230	20½@21	180	20 @20½	210	20½@20¾	875	21	3120	19½@19¾	310	19½@20½
Arizona & Utah.*	1,500	19½	1800	100	2⅝@ 2¾	50	2¾	200	2⅝	40	2	.....	.....	.....	.....
Belcher.....	1,010	10	10400	640	112 @115	405	114 @116	310	117 @120	608	118 @122	475	120 @126	405	119 @122
Baltimore.....	1,200	20	24000	250	3¾	150	3¾	100	3¾	258	3¾@ 3⅞	3.5	3⅝@ 3½	350	3⅝@ 3¾
Bowery.....§	1,000	30	30000	.....	.....	.....	.....	.....	.....	50	2½	70	2 @2½	210	2⅜@ 2½
Bacon.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	50	75	55	80 @81	10	80
Buckeye.....	.....	.....	16000	.....	.....	25	3¾	.....	.....	.....	.....	.....	.....	50	3¾
Chollar.....	2,800	10	28000	630	97 @101	205	100 @102	185	100 @102	30	99 @100	210	103 @105	105	97 @99
Caledonia.....	5,000	5	25000	1250	62 @63½	180	64 @66	375	62½@65	420	62½@ 66¾	815	68 @72	455	65½@ 69
Cons. Virginia.§	1,160	20⅜	23600	150	35 @37	160	36 @37	170	36 @36½	200	37 @38½	195	36 @37	260	34 @36
Confidence.....	130	192	24960	230	11¾@12	130	12	255	12 @12¼	745	13 @13¼	1130	14 @14¼	555	13¾@16
Crown Point.....*	600	166½	100000	205	143 @144	155	145 @147	46	147 @148	75	146 @149	1110	130 @145	783	130 @133
Central.....	70	357	25000	.....	.....	.....	.....	.....	.....	.....	.....	30	10	.....	.....
Calaveras.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Condor.....	.....	.....	.....	2555	2 @ 3¼	1725	2¼@ 3	2070	3 @ 3¼	490	3½@ 3¾	680	2½@ 3¼	2045	3 @ 3⅜
Daney.....	2,000	12	24000	365	2 @ 2¼	310	2¼@ 3	100	2½	980	2¼@ 2½	20	2½	190	2¾
Eureka Cons.....*	.....	.....	5000	625	22¾@23¾	845	23 @24	325	23 @23¼	670	23¾@24	790	23 @23½	575	23 @23⅞
Eureka.....	1,680	512	2000	50	16	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Exchequer.....	900	50	50000	1419	@20	.....	.....	15	23	30	23	105	23 @24	115	22½@ 23
Eclipse.....	70	357	25000	1200	14 @15	155	15½	735	16 @17	300	17¼@17½	1005	18 @20	890	19 @19½
Empire Mill.....	75	16	1200	1675	13¾@15	500	15¼@15½	825	16¾@17½	450	16¾@17	420	16⅞@17	.....	.....
Excelsior.....	.....	.....	12500	.....	.....	775	12 @13	.....	.....	.....	.....	.....	.....	.....	.....
Gould & Curry..	1,200	.....	28000	30	191 @195	70	190 @192	50	180 @185	14	180 @182	.....	.....	70	177 @180
Golden Chariot..	750	1a⅜	10000	20	9	70	9½	170	10 @10½	200	10½@12	185	12 @12¾	40	11 @12½
Globe.....	.....	.....	20000	.....	.....	25	2½	.....	.....	25	2½	.....	.....	.....	.....
Hale & Norcross'	400	40	16000	100	84 @86¾	8	86 @87	200	91 @94½	185	89 @92	140	88 @90	95	87 @89
Hubn & Hunt...§	3,600	8½	30000	.....	.....	20	3¼	.....	.....	100	4	40	3⅞	1045	3⅜@3¾
Ida Elmore.....	1,200	17½	30000	.....	.....	160	18 @19	.....	.....	8	8	.....	.....	.....	.....
Imperial.....	184	543½	100000	785	122½@131½	1420	123½@14¼	1365	14 @14½	1450	14¾@14¾	1840	14½@15	1470	14¾@15
Ingomar.....	1,000	40	40000	.....	.....	.....	.....	250	1⅞@ 1¾	.....	.....	300	1⅝@ 1¾	50	1½
Julia.....	2,000	15	30000	.....	.....	40	6¾	105	6½	190	6¼@ 6½	200	6⅝@ 6¾	50	6
Justice.....	3,000	7	21000	20	13¾	180	14½@15	1022	4 @15¼	380	14½@15½	295	15 @15¾	200	15¾@16
Kentuck.....	95	21	2000	.....	.....	.....	.....	.....	.....	11	290	25	275	6	285 @300
Knickerbocker..	1,200	20	24000	345	8¾@ 8¾	520	8¾@ 9	.....	.....	140	8¾@ 9	790	8½@ 9	475	8⅞@9
Mammoth.....	1,800	20	36000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Meadow Valley.§	24,023	42⅜	60000	345	16¾@17	30	16¾@16¾	1195	16 @16¾	2525	15½@16¾	1075	16 @16¾	1725	15¾@16½
Mahogany.....	72	1375	10000	1018	12 @20	895	18 @19	225	19 @20	60	16½@18	60	18	50	15
Ophir.....	1,400	12	16800	320	43 @45½	170	47 @50	405	48 @52	365	46 @48	195	45½@47	90	44 @45
O. H. Treasure..	800	26⅜	21333	150	7¼	110	7½	.....	.....	100	71	.....	.....	30	6½
Overman.....	1,2 0	10⅜	12500	90	86 @87	60	89 @91	35	89 @91	65	87 @90	.....	.....	60	84 @87
Occidental.....	800	12½	10000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Pioche.....	1,000	20	20000	365	30½@32	675	31½@31¾	280	30½@31½	355	30 @31½	445	28 @30¾	1155	28½@30
Page & Panaca..§	2,4 0	16⅜	40000	50	2⅜	.....	.....	780	2⅝@ 2¾	440	2½	200	2⅝	650	2¾
Phœnix.....	.....	.....	50000	1900	4¾	200	4¼	1540	3⅞@ 4¾	750	4⅛@ 5¼	470	5¼@ 5¼	760	4⅜@ 4¾
Raymond & Ely.§	4,000	7¼	30000	110	150 @152	185	149 @150	250	156 @160	244	151 @162	200	158 @161	275	157 @158
Savage.....	800	20	160 0	110	172 @182	235	172 @175	230	177 @190	315	180 @189	105	192 @195	475	180 @170
Seg. Belcher.....	160	40	6400	170	107 @114	275	117 @125	40	122 @123	75	123	55	122 @126	10	121 @124
Sierra Nevada..*	3,000	7¼	20000	260	15⅝@16	80	16⅜@16¼	10	16½	40	16 @16¼	140	15½@16	140	15½@15¾
Succor.....	7,600	3	22800	.....	.....	10	4¾	.....	.....	.....	.....	100	5	75	5
St. Patrick.....	1,800	2⅜	5000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Chariot.§	660	30½	20000	50	3½	100	3	150	3	300	2½@ 2¾	280	2½	565	1¼@ 2½
Trench	20	250	50000	205	15½@16	55	16¼	250	16¼@17	400	18 @20	210	20 @20½	195	1 @22
Wash. & Creole.§	260	1½0	30000	250	4¾	100	4⅞	.....	.....	840	5¼@ 5¾	950	5 @ 5¼	80	24⅝@ 5
Yellow Jacket..	1,200	20	24000	500	130 @138	140	136 @137	102	136 @142	15	138 @139	.....	.....	295	140 @147
Yule Gravel.....†	400	25	10000	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....

Notes.—†—California. *—Washoe. ‡—White Pine. §—Ely District. ¶—Eureka District. ‖—Idaho. |—Nearly. ¿—Over.

S. F. Stock and Exchange Board.

Thursday, August 8, 1872.

Last week 386 tons of ore was taken from the Sierra Nevada mine and 1,722 tons from the Chollar-Potosi mine, latter assaying $3,247 per ton.

Ou August account, $72,000 has been received from the Raymond & Ely mine.

The Kentuck mine sent 1,200 tons of ore to the mills in July.

The following is from a dispatch to the Crown Point—ore extracted week ending August 2d, 2,452 tons; sixty-five per cent. of assay of same, $82,549.12.

Hale & Norcross—Ore extracted wcek cnding August 3, 639 tons.

The dispatch to the Pioche, August 2 states: "North winze down 23 ft.; ore 2 ft.; aesay, $230. South winze down 38 ft., ore one and one-half foot; assay, $144."

Meadow Valley—Bullion shipped from July 8 to Aug. 1, $72,300.

On the 29th, from the Chollar Potosi, 128 tons ore wers shipped to mill, and on the 30th 136 tous, valued at $40.41 per ton.

A letter of July 27th says: "We made connection with the Burke tunnel from ths Chief of the Hill this afternoon. We have a fine ledge all the way from our original shaft to ths tunnel, 230 ft. Assays dnring the past week in drift where we made ths connection have run from $140 to $170 per ton."

The Superintsndent of the Woodville writing on July 30th, reportsd: "The drifts are looking well; the south drift of the lower level from iucline is uot as wids as it bas been, but the ore is of a higher grade, assaying $156 psr ton. In the north drift from the first level of ths incline the ore is improving; ae the drift advances north it is 6 ft. wide and still widening. Mills are running. I shall make a shipment of bullion next week.

The annual report of the Savage mine to July 1 shows a bullion production for this year of $905,295; expenses, $1,053,137; average of ths ore, $18 per ton. Milling at Savage mill, $9.94; at custom mills, $11.85. The Superintsndent states: "The mine shaft and the shaft incline are in excellent condition—never better. The work of sinking is continued with all possible energy. The entire machinery at both shafts, the hoisting gear and the pumping gear, are in good ordsr aud work emoothly. Two nsw steel wire ropes, two thousand feet in length each, are on the ground. Thess, with ths present powsr of the machinery, will enable us to sink to a great depth."

Ths dispatch to the Pioche on Auguet 3d, states: "North winze down twenty-four feet: ors two fest; aseay, $144. South winze down thirty-nine feet; ore 2 feet; assay, $225." The dispatch to the Belcher reports: "No change in mine. Connection of incline with ths drift will be made in a week."

The stock market opened weak on Friday morning, and all stocks excspt Savage were weak during the day.

From Thursday morning's sales, Belcher declined $10.50, Chollar-Potosi and Yellow Jackst each $8, Hale & Norcross $6.50, Segregated Bslcher $5, Overman $4.50, Ophir $3, Crown Point $2, Consolidated Virginia $1.50, Alpha, Excheqner, Imperial and Justice each $1. Savage advanced $6, Empire Mill, Gould & Curry and Trench each $1.

On Saturday the stock market wae quits strong with an evident disposition to buy. At the close Jackst was $1 lower than yesterday afternoon; Raymond & Ely, $1. Pioche advanced $1. Ophir rose $5; Belcher, $3; Crown Point, $3; Imperial, $2; Hals & Norcross, $1; Chollar, $2; Alpha, $4; Empire, $1; Con. Virginia, $2; Gould & Curry, $2.

There was a light business at the Stock Board on Monday morning, when only Washoe stocks were called. Prices were generally a shade better, the most notable advance being in Savage. From the highest ratee on Saturday, Savage advanced $10, Hale & Norcrose, $4.50, Belcher, $3, Empire Mill and Ophir each $2, Crown Point, $1.50, Alpha, Chollar-Potosi and Yellow Jacket, each $1. Gould & Curry declined $7, while Daney Consolidated, Virginia, Justice and other mining stocks were in moderatc demand on Tuesday morning, and prices without much change, though irregular and weak. From the highest rates yesterday morning, Belcher, Caledonia, Con. Virginia and Trench each advanced $2. Confidence, Crown Point, Seg. Belcher and Yellow Jacket each $1. Ophir declined $4. Gould & Curry, 2.50; Chollar Potosi, $2; Hale & Norcross, Overman and Savage each $1. Kentuck sold at $200, a decline of $10 from the previons sale July 26th.

Mining Stocks were in fair demand on Wednesday, but prices were weak and irregular. Crown Point was especially soft, receding to $130, the lowest in some time, under diminished receipts last month. From the highest rates yesterday, Chollar-Potosi advanced $5, Caledonia $3, Trench $2, Alpha and Belcher each $1.50, Confidence, Imperial and Yellow Jacket each $1, Crown Poiut declined $15 50, Kentuck $15, Savage $2, Consolidated Virginia $1.50, Mahogany, Ophir, Pioche and Raymond & Ely each $1.

Mining stocks were decidedly weak this morning for most kinds. Crown Point fell to $130. There was a break in the Savage, which dropped to $160. Kentuck was more active than it has been for a fortnight, closing at $300. From the highest rates yesterday, Kentuck shows an advance of $25, Yellow Jacket $8, Segregated Belcher $1 50, Alpha, Justice and Treuch each $1. Crown Point declined $7, Chollar-Potosi $6, Savage $12, Gonld & Curry $2.50, Belcher, Hale & Norcross and Ophir each, $2, Overman $3, Bacon, Caledonia and Consolidated Virginia each $1.

Mining Summary.

The following is mostly condensed from journals puhlished in the interior,in proximity to the mines mentioned.

California.

BUTTE COUNTY.

Specimen Ores.—Oroville *Record*, Aug. 3: Mr. Elton has shown ns some very rich specimens from his gold and silver ledges, Gravel Range Dist.

CALAVERAS COUNTY.

Upper County.—Calaveras *Chronicle*, Aug. 3: W. C. Boyls bought one-fifth of the Horsethief above Jesus Maria. A winze being sunk from ths lower level of ths Prussian Hill, has developed an extensive body of ore 8 ft. thick, 2½ ft. being first class. Fine looking quartz made its appearance in the main shaft of the Petticoat. The recent strike in the Wolverins appears to be extensive. A steam engine of 45-horse power is on its way to the mine. A lot of Blazing Star quartz and vein matter, from above watsr level, paid $30 per tou. The north level of ths Bartola showe free gold. The Heckendorn, Blue Mt., has been reopened. The capacity of the old mill will be increased to 8 stamps.

Blazing Star.—Harrie 5-stamp mill bas just concluded a 10 day's run, and the yield is $2,600. The rock was taken out of the main shaft from a depth of 70 to 124 ft.

Removal.—The Water Co's. mill, Chilli Gulch has been torn down, removed to Blue Mt. and is being put up on the Eckendorn miue.

Goon Pay.—Moser, Harrington & Co., ars making fair pay out of the tailings that have accumulated in Spring Gulch.

Horse-thief.—Rapid progrese is being mads in srecting machinery; there is plenty of rock on the dumps.

Starten.—The mill on ths State of Maine, near Big Bar on the Mokelumne rivsr, commenced crnshing Monday last. An excellsnt quality of rock is being taksn from the mine.

Struck It.—Good rock has been struck again in the Whisky Slide.

EL DORADO COUNTY.

Items.—Auburn *Stars and Stripes*, Aug, 1: The Cederburg maintains its splendid appearance. Ths St. Lawrencs is turning out large quantities of high average ore. The Columbia is dsveloping a 4-ft. ledge. The Ella is showiug richly in snlphurets and fres gold.

INYO COUNTY.

Shipment.—Inyo *Independent*, July 27: The Eclipee Co. shipped, per last stage, 2 bars of bullion, valued at $4,000.

MARIPOSA COUNTY.

Washington.—Mariposa *Gazette*, Aug. 2: The new shaft is about 220 ft. in deptb. Ths vein is nearly 15 ft. in thickness and the ore rich.

The Greenhorn is looking well. The shaft is down 285 ft. The ledge is abont 18 iuches in thickness.

S. D. Valentine is making arrangements to pnt up a 10-stamp quartz mill immediately.

The Coe mine ie engaged in pumping. The ledgs in the tunnel, which is in 760 ft. averages 1½ ft. thick.

The Knight of Malta ledge between wall and wall is from 8 to 10 ft. wide, and shows an abundance of sulphurets.

Gravel Mines.—The Hope is taking out gold, and runniug drifts. The Town Talk is taking ont in the neighborhood of $2,000, a profit of something like $1,200–from an 8 stamp mill.

Toward Rough and Ready Roberts & Co. are washing with success.

Rich Strike.—Cor. Nevada *Transcript*, Aug. 3: Large and rich quartz ledges have been discovered at Gaston Ridge within the past 3 weeks. They all excel in richness anything heretofore struck in Nevada county.

Baln Hill.—The Bald Hill claims, Gaston Ridge, during the past winter, have and are now paying nearly $20 per day to the hand.

PLACER COUNTY.

Excitement.—Auburn *Stars and Stripes*, Aug. 1: All around the circle from Ophir by way of Rock creek and clear over to Georgetown we hear of very numerons and rick strikes. At the Bellevue they are taking out rock filled with free gold and rich sulphurets. At St. Patricks the developments are richer and apparently more extensive than any heretofore made in that claim. At the Green, great slabs and masses of rich ore are being taken out. At the Auburn on Rock creek, the ledge is nearly 4 ft. wide.

PLUMAS COUNTY.

Jamison.— Quincy *National*, July 27: The Plumas Eureka have let a contract for the enlargement of their drain tunnel, and the contractors are at work.

SAN DIEGO COUNTY.

The Mines.—San Diego *Union*, July 25: The Owens is still better. The boys have lately struck ore "richer and more of it." The Bush boys are doing finely in their lead. In the canon the Golden Chariot Co. have been taking out rock full of gold.

Julian and Banner.—San Diego *World*, July 27: Next week, DeFrees, Pierce & Evans and DeLongs mills will be running. The Madden and Kentnck mines will soon have out considerable quantities of rock to be crushed.

The Antelope will yield from $150 $200 per ton.

The Golden Chariot will pay nearly $200 per ton. The mill commenced last Wednesday to crush a 100 tons of thie rock.

The Owens main shaft is down 260 ft. Stoping commenced yesterday.

The Good Hope shows as rich rock as any found. New discoveries in this ledge are causing some excitement.

The San Diego mine will soon run again.

SIERRA COUNTY.

ITEMS. — Downieville *Messenger*, July 27: The Caledonia Co., Cedar Grove, are doing well, and the Star Co., Greenwood, are similarly situated. Col. Baker, of Gardner's Point, has just realized a handsome clean up. The Monte Cristo and Union claims, Port Wine, are doing well. Williams & Cox, Scales Diggings have been doing exceedingly well at Scales and Council Hill. Barnard's diggings are now fully opened out. George Moyle prospected well. The Monumental Co. are doing as usual, paying large dividends. The Empire is driving ahead for the same lead. Cox & Co., Chandlerville, are cleaning up a very successful season's work. North America, Hepsidam, is taking out good pay. All the claims at Gibsonville and thereabouts are doing well. Tom Wheeler, at Morristown, has washed off an immense body of rich ground this season.

TUOLUMNE COUNTY.

MOUNT JEFFERSON. — Sonora *Independent* Aug., 3: The shaft is down over 200 ft., with a lode 10 ft. in width.

LARGE QUARTZ LODE.—The Spring Gulch Co., 18 miles east of Sonora, have come upon a vein 15 ft. in width, which prospects from $15 to $25 per ton, they are running 10-stamp mill.

ORCUTT.—Sonora *Democrat*, Aug., 2: The proprietors have commenced taking out very fine ore and the prospect is very flattering.

Nevada.

EUREKA DISTRICT.

ORE.—Eureka *Sentinel*, July 28: Adams Hill will make another shipment of 100 tons of $300 ore to S. F. soon.

ELY DIST.

LOCAL REVIEW.—Ely *Record*, July, 28: BULLION.—During the past week W. F. & Co. have shipped bullion valued at $139,935.67.

AMERICAN FLAG.—The stopes on the 180-ft. level continue to yield well, and the ore shows in good quantity throughout.

PIOCHE.—The ore in face of drift on upper level is constantly improving, and shows fully 5 ft. in width. In the north and south winzes on this level a constant improvement is noticeable and a large quantity of ore is being taken out and shipped to mill. Between the fourth and fifth levels a great improvement is also noticeable, and assays from all parts show increased value of the ore.

PACIFIC TUNNEL.—Driving steadily ahead, with main tunnel in 853 ft.; 3 ledges have been passed through. Small strata of fine ore are coming in on the face, and indications are favorable for soon tapping a good ledge.

CONNOR.—Drift from bottom of shaft in 16 ft., with ore in the face of the drift improving daily. Ore of a high grade is being taken out.

LOUISE.—The strike in Anna Dickinson shaft continues to improve, and ledge shows 4 ft. in width, carrying ore throughout.

SUNBEAM.—Drifting each way, to make connection to Bartou shaft, ore showing throughout the entire drift next to the foot wall. Sinking a winze on the lower level on ore.

CHIEF OF THE HILL.—Tracing drift in 55 ft. In the face of the drift ledge shows 3 ft. of solid high grade ore.

HARPER.—Sinking of shaft continues, and is down 10 ft. below first level, with the indications very favorable.

PHŒNIX.—We learn of a strike having been made during the past week. Ore of a character similar to that being taken from the Raymond & Ely having been cut into in the ledge.

PAGE & PANACA.—Shaft down 330 ft., and sinking progresses.

MOCKING BIRD.—Ledge in the bottom shows 3½ ft. in width, with ore about 22 inches wide.

HUHN & HUNT.—Drifting into the hill, and making about 10 feet per week.

EXCELSION.—Constantly improving in the lower workings, from which large quantities of fine ore are being taken out.

AZTEC.—On Monday last, in sinking the shaft, a body of ore was struck at a depth of 137 ft., which had widened out to 2¼ ft. on Tuesday evening last.

IVANHOE.—A very important strike was made Saturday last. Samples of the ore were a very rich chloride, coated with horn silver.

HUMBOLDT.

ARIZONA.—Unionville *Silver State*, Aug. 3: Another rich strike is reported. The new tunnel being run west of the old works is expected to cut the ledge inside of 30 ft.

INDIAN DIST.—Jurien Lott and Peto Spray have discovered an exceedingly large, rich, and well defined ledge.

CENTRAL PACIFIC.—The mine turns out richer ore than ever before. The Batavia Co's. mill is running steadily, and the camp is unusually lively.

REESE RIVER.

Reese River *Reveille*,, July 27: LONE STAR. Large quantities of fine ore have been coming out for a number of months.

S. C. BAKER.—The incline is down 150 ft., and will be put down 50 ft. further. A splendid body of ore in sight, but will not be raised till the old incline is repaired.

ISABELLA.—Ore at all points of mine, and very rich.

SEMANTHE.—The ledge looks well at the bottom of the incline.

OREGON SHAFT.—Rich ore in abundance is steadily coming out.

GROVE TUNNEL.—High grade ore is being raised from both east and west 200-ft. levels.

MORGAN & MUNCEY.—The lessees at the 200-ft. level are running through the break; raising no ore at present.

SARATOGA.—This mine is turning out ore in unlimited quantities and of unsurpassed richness,

LANE & FULLEN (Pacific Co.).—The recent crushing shows that the rock is of high grade, as the first-class went nearly $900 per ton.

YANKEE BLADE.—CHASE TUNNEL.—A body of very good ore was struck in this tunnel recently.

ENSIGN & SOUTHAL.—Good ore coming from the incline.

COLUMBUS DIST.—The mines are reported as looking exceedingly well. A 5-stamp mill is running and doing a good business.

At Hot Springs, 40 miles from Columbus, a 10-stamp mill is being erected.

BELMONT.—THE EL DORADO CON. Co Are taking out ore that assays up into the thousands.

BELMONT Co—Is working some 30 men in the Canfield, and a small force on the Highbride.

MONITOR Co.—Working 40 men and taking out very fine ore.

COMBINATION Co—Still working a full force.

WASHOE.

LOCAL SUMMARY—SAVAGE.—Gold Hill *News*, August 3: Daily yield 178 tons, worth $28. Incline down 110 ft., and making slow progress. Prospecting the body of ore found in the south cross-cut of the 1,500-ft level, goes slowly on; the quality of the ore is steadily increasing.

YELLOW JACKET.—Daily yield 25 tons, from the old workings at and above the 1,000-ft. level. The 1,500-ft. level from the incline is being opened.

CROWN POINT.—Daily yield 330 tons. The cave has been sufficiently secured to allow of a full force being employed at the 1,200-ft. level.

OPHIR.—The west drift of the 700-ft. level is in 50 ft. in ledge matter. The north drift on the 1,100-ft level is driven ahead. Face in hard porphyry.

BELCHER.—Daily yield 250 tons from the 1,000 and 1,100-ft. levels. The drift west from the 1,100 has reached the point of intersection with the main incline from above, and a raise is being made to meet it. The main drift east from the incline, at the 1,000-ft. level, is in promising ledge matter.

KENTUCK.—Daily yield 65 tons, from old workings about the 5th and 6th levels.

CHOLLAR-POTOSI.—Daily yield 180 tons worth $37. There has been a decided improvement in the quality of ore in the various breasts during the week.

SIERRA NEVADA.—Daily yield 55 tons that pays a good profit. All the ore breasts are looking and yielding well. The winze from the west drift of the upper level is down 30 ft. in good ore. The west drift from the 100-ft. raise in the lower tunnel will soon tap the ore body found in the winze from the upper level.

IMPERIAL EMPIRE.—The southeast drift at 1,550-ft. level is started ahead again, and the ore body shows 17 ft. in width. The station of the 1,650-ft. level is being opened from the incline, and a drift to intersect the new ore body in the level above is to be started forthwith.

BUCKEYE. The ore stopes south of the incline are turning out better and showing heavier and richer deposits as further developed.

BALTIMORE.—New shaft down 186 ft.

KNICKERBOCKER.—New shaft down 38 ft. below the 400-ft. station, and water decreasing.

RED JACKET.—The ore from the lower level is being taken out for milling. There are about 200 tons on the dump.

DANEY.—No further sinking will be done in the shaft until the pump-bob and other arrangements for raising the water are completed. Prospecting goes on at the 500-ft. level.

CON. VIRGINIA.—Crosscutting at the 500-ft. level, and drifting at the 1,166-ft. level continues. The prospects are excellent.

UTAH.—The new shaft is being sunk rapidly, and the new hoisting works operate admirably.

WOODVILLE.—Only ore enough has been taken out to keep the mill running. It is yielding finely in bullion.

CALEDONIA.—The drift west at the 700-ft. level is in 42 ft. The rock is hard but blasts well. At the 400-ft. level the drift is 333 ft., and a crosscut is being run but no good pay ore is found. Considerable prospecting is being done in the old mine.

GOULD & CURRY.—The main level is down 107 ft. below the 1,500-ft. level. The east drift of the 1,500-ft. level is in 210 ft., the north drift 135 ft., the south drift 130 ft., all in hard porphyry.

JUSTICE.—The drift at the 400-ft. level is in 63 ft. from the shaft and is about cutting the ledge. The old Waller Defeat shaft is being sunk deeper and the vein has been cut by the bottom of it, showing some very good ore.

HALE & NORCROSS.—Daily yield 100 tons from the old upper workings except some 20 or 30 tons from the 1,400-ft. level. The incline is down 97 ft. below the 1,500-ft. level.

OVERMAN.—The drift west at the 100-ft. level is in 510 feet, and the face is in favorable looking matter. The shaft is down 20 ft. below the 1,100-ft. station.

SILVER HILL,—Drifting for a new level is commenced from the bottom of the shaft.

ARIZONA & UTAH.—The west wall of the ledge has been reached. A raise is being made to connect with the upper levels for air.

JACON LITTLE.—The ore vein in the tunnel shows considerable improvement.

SUTRO TUNNEL.—Total length, 2,986 ft. Work both in the tunnel and air shafts along its line, progresses energetically.

WHITE PINE.

TREASURE HILL MINES.—BULLION.—White Pine *News*, July 27: Amount forwarded the past week amounts to $25,776.63.

EBERHARDT & AURORA Co.'s MINES.—In the Eberhardt a whim is being erected to prospect the mine at a greater depth. The shaft is down 148 ft., and it is the intention to go down and prospect the mine thoroughly. The ore in the Ridsdale and De Pass chambers, in the North Aurora, has, for the past two weeks, greatly improved in quality. The rock is of a higher grade, more uniform, and requires less assorting. In the north end of the North Aurora, in the chamber south from the Lady's chamber, the rock has improved in quantity and quality, with every indication of a large body of high grade ore. It is 40 ft. high, no end or side to it, and the bottom has not been reached.

BEECHER CON. M. & M. Co.—The south end is looking well. The Ward Beecher proper is taking out good ore, and shipping to mill. The Edgar shaft has been enlarged and timbered to the bottom, and will commence hoisting ore the coming week.

SILVER WAVE.—Continues working in the ledge of ore lately struck, and preparing to start the mill to-day.

O. H. TREASURE.—The body of ore in the lower tunnel is looking much better. The country rock has changed somewhat from limestone, and are running in shale quartz and spar. The assays made average from $3 to $10 per ton, and it is expected to strike the vein in the next 20 ft. The Co.'s mill is running steadily on the Co.'s ore.

PENNSYLVANIA S. M. Co.—The usual force of men is employed. The Jackson shaft is down 50 ft.

EAST SHENOYGAN.—A part of the force is employed in the Exchange drift and Regent drift, from which places ore of a good grade is being extracted. A force has been put on to prospect into the hill from the southwest drift, where the indications are very favorable.

COPPER GLANCE.—A force has been put on the croppings and surface workings, and ore of good grade is being obtained.

SAN JUAN DEL RIO.—The Co. is vigorously sinking in the Dwinelle shaft.

SUNBEAM.—The Moscow shaft has been cut across, and taking out good ore. Are in about 9 ft. in the East drift, in a fine body of ore, about 100 ft. from the Moscow shaft.

NOONDAY.—Taking out good ore from the surface works.

HAMILTON M. & M. Co.—A large body of good ore has been struck in the tunnel of the Pogonip, running East. The Charter Oak is looking well.

MAMMOTH.—Working a small force taking out rock for shipment to mill. Mine looking well.

Colorado.

E. W. Rogers is working the Junction lode, Democrat mountain. He has commenced a new tunnel on the vein. The ore vein in the lode is about 2 ft. in width, consisting of sulphurets intermixed with quartz.

The Pelican never looked better. During June the mine furnished 3 car loads, over 30 tons, of shipping, besides the usual quantity and quality of amalgamating ore.

A short distance east of the Coldstream lode, in Sherman Mountain, is the Capt. Wells. In all the openings a good ore vein was to be seen. The present work is being done in a shaft east of any previous working, and a depth of about 20 ft. has been obtained. The bottom of this shaft shows a good ore vein, consisting mainly of red decomposed ore. The decomposed mineral assays about 170 oz., the hard mineral found, often liberally intermixed with ruby silver and gray copper, assays as high as 300 oz. in silver to the ton.

Watson & Grissinger are opening the Seven-Thirty lode, Sherman mountain. The ore obtained is of great richness, running well up in the hundreds of ounces per ton.

The Chicago S. S. & R. Works are running 12 furnaces and are preparing to double this number.

A body of red argentiferous galena ore has been struck in the Coldstream lode, in the lower end, 50 ft. from the surface discovery, 100 ft. below the highest point where red pay was taken out.

The mill at the Boston S. M. As., at St. John's, Summit county, will soon be in readiness to commence operations.

CARDINAL.—Caribou *Post*, July 13: Work has been resumed on the Sovereign People lode; Cardinal, Gunu & Co. having taken contracts to sink the discovery shaft 60 ft., and the East shaft 40 ft.

Richard Pierce has fired up his furnaces preparatory to charging them with ore next Monday.

ITEMS.—Colorado *Miner*, July 25: The Bobtail Tunnel Co., Gregory Point, have driven their tunnel 600 ft. within the past year. The Fisk lode has been tapped and completely drained.

Two young men have just discovered and opened a vein on the top of Leavenworth Mt. that has gone far ahead of anything yet discovered in our region.

A LOT of ore, weighing about 2,300 lbs., from one of the mines in the vicinity of Georgetown, sold last week for over $2,000.

GLASGOW.—Colorado *Miner*, July 18: The Glasgow lode is being worked by a drift from the Brown tunnel. The ore vein is of good size and the mineral is of good quality.

The Steward S. R. Co., started their machinery yesterday, and will be in full blast and ready to treat ore by Monday.

ANTELOPE.—On the surface the vein shows a crevice between walls of about 14 ft. A cross-cut tunnel, 30 ft. in length, reaches the vein, along which a drift, 60 ft. long has been driven. About 40 ft. from the end of the cross-cut a shaft has been sunk 50 ft. disclosing an almost continuous ore vein the entire depth. From the bottom of this shaft a drift is being run east, now about 30 ft. long, and also a drift west, now in about 12 ft.

COLORADO GULCH.—Central *Register*, July 17: Stillings & Emery have found excellent ground at the head of Frying Pan Gulch.

The 5-20's stamp mill is pounding away night and day.

Montana.

ITEMS.—Helena *Herald*, July 18: The Helena R. Works shipped yesterday 26 tons of bullion.

Two silver bars are on exhibition at the First National Bank, the result of the last run of the Jefferson Smelting Works. Their value is $2,600.

Eight hundred pounds of bullion arrived last night from Philipsburg, the product of the Speckled Trout.

QUARTZ CREEK.—Deer Lodge *New North West*, July 20: A joint stock Co. have opened ground on Fifty, and struck a prospect that will pay good wages for drifting. Other Cos. are opening above and below them, with strong hopes of success; most of the old ground has been paying reasonably fair wages so far. On Little Bear and Sunrise the miners are doing very well.

FLINT CREEK.—Cor. same: The Imperial S. M. Co. is repairing their little 5 stamp mill, with wooden stamps, for work. The St. Louis mill is running like clockwork. There are fair prospects of the Trout Mine alone, furnishing quartz enough for 40 stamps for dry crushing. Two enterprising men are bringing a ditch from Flint Creek into Phillipsburg, for milling and mining purposes.

AROUND THE CAMPS.—Helena *Gazette*, July 22: Hobbins & Co. own 500 ft. of ground, which pays one ounce to the hand. Brennan & Co.'s ground pays from $10 to $12. Pierce & Landan expect to reap a good crop of dust this fall. Snyder & Co. have brought in a $5,000 ditch on a bar below town. Kennedy & Co. are putting in a bedrock flume 3 miles below town—working 20 hands. Chas Herrick discovered a quartz lead six miles above Bear Town—on the main divide between Bear and Elk, a few days ago, and obtained 25 cents to the pan in the decomposed quartz—a vein 6 ft. wide.

Idaho.

LOCAL RECORD.— Owyhee *Avalanche*, July 27: The Elmore 8th level drift is connected between the winze and shaft, and as soon as the track can be laid down, stoping will be commenced at the winze which was sunk through good ore for 100 ft., from the 7th to the 8th level.

The Mahogany is yielding rich ore in abundance, especially from the 5th level.

The Minnesota ore is milling much better of late.

The Empire is running 2 drifts from the bottom of the shaft, one north and the other south.

The Red Jacket is being quite extensively worked. Two working shafts are being rapidly put down. The north shaft is down 50 ft. and is yielding fine ore. The shaft is 22 ft. deep. Last Saturday the vein was cut, showing it to be 2½ ft. wide of high grade ore.

Sands & Co. had 50 tons of Illinois Central ore crushed at the Cosmos mill this week, which went a few cents over $80 per ton, and yeilded them over $4,000.

The War Eagle shaft has been thoroughly retimbered and repaired, and the hoisting works will soon be ready for operation.

Utah.

BULLION. — Salt Lake *Tribune*, July 22: Walker Bros. received from their Pioneer mill on Saturday 6 bars of silver valued at $6,758.09 in gold. They have shipped since the starting of the East Cañon mill 51,000 ozs. of silver.

NORTH STAR.—The Hickory vein, which is large and well defined, has been sunk on a little over 60 ft., prospected for a short distance by 2 drifts, and stripped for a considerable distance on the surface. The ore in sight is estimated to be about 3,000 tons, which from careful assays will mill $100 to the ton.

MINING ACCIDENTS.—William Williams, underground foreman in the Crown Point, was considerably burned about the back and shoulders last week by the explosion of a blast.

On the 3d instant, James Cook, a miner employed in the Crown Point mine, in attempting to jump upon a train of cars loaded with ore, and passing through Gold Hill, lost his balance and fell so that the wheels of two cars passed over him, cutting off both legs above the knees, and killing him instantly.

A. B. Parson, a miner working in the Bullion Mine, Washoe, was quite severly but not dangerously hurt by a cave, on the 2d inst.

The Virginia *Enterprise* of the 3d says that the day before, the cage at the Imperial Empire shaft had been lowered with a man on it to the 1,300-ft. platform level, and he had just got off when the wire cable parted, about 130 feet below the surface, and the whole came thundering down upon the cage. No material damage was done, but it is difficult to understand why made the cable break just then and there.

California Tulip.

We herewith present the readers of the RURAL with an engraving from Nature of one of the most beautiful wild flowers of San Joaquin Valley and other parts of California. It belongs to the tulip family, and is properly called the California tulip, as its species are natives of our State.

The species engraved here is of a light yellow, or straw color. Though reminding one at first glance of the California poppy, it can be readily distinguished from the latter by the fact that it has but three flower leaves or petals, while poppy has four. Another means by which those at all acquainted with botanical terms can distinguish them is, the tulip has only six stamens and one pistil, the latter three-cleft, but the poppy has more than twenty stamens. Again, the tulip is bulbous, the poppy not. The yellow tulip grows on the hard, knolly land of the valley, and also in the foothills of the Sierras.

Two species besides the yellow are fonnd in the same localities, differing chiefly in color. In one, the flower leaves are of a greenish white, most of the inner surface sprinkled as if with a purple powder. It also has a large purple spot uear the base of each petal, on the inside, resembling in shape and appearance the eye of a peacock's feather. A third kind, which is found only in the mountain districts, is of a light purple or lilac color, having a darker spot or eye, on the inner surface of each flower-leaf, like the species just described. These tulips when open measure from one to two inches across the month of the flower. Each plant sends up from a hulb a single stem one or two feet high, producing from one to four flowers. The leaves are few and short, forming sheaths around the base of the flower-stems, as represented in the engraving.

The Latin, or systematic names of the three species mentioned above, are *Cyclobothra puchella*, the yellow kind—*puchella* meaning beautiful; *C. alba*, the white; and *C. purpurea*, the purple tulip. A fourth kind belonging to California, but which the writer has not ye found in San Joaquin Valley, is *C. monphylla*, or one-leaved tulip, which is described by botauists as having bright yellow flowers, three in uumber, a single leaf, aud a stem less than a foot high.

The name Cylibothra means *circular pit*, from the Greek *kuklos*, a circle, and *bothros*, a pit, and was given to this flower by Robert Sweet, an English Botanist, in allusion to the round hollow formed by the lower portion of the flower. By an examination of this pit in any perfect flower of the kind, one will see that it is almost an exact hemisphere.

The upper edge of this pit in each species is heavily bearded. A common name among children in the mountains for these flowers is *cat's ears*, alluding to the shape of each flower-eaf.

Beautiful as the California tulip is in its wild state, it could no doubt be mnch improved hy culture, and is well worthy of a place in our ornamental flower gardens.

And what would you think, children, were any one to tell yon, that if yon had heen living a good many years ago, and could have introduced our California tulip into Europe, you might have made thousands of dollars by it. Strange as it may seem, it is even so. For a long time ago in Holland, there was such a rage to have beautiful tulips, that rich men gave thousands and thonsands of dollare jnst to get some new kind, such as nobody elee had. This rage went so far and lasted so long, that people were thought to be crazy about it, and it was called the tulip mania. Now when the tulip mania was at ite hight, you would have had a chauce to make a handsome fortune just by carrying to Holland the four kinds of tulip that are natives of California, for they would have boen entirely new in Enrope. Some old nabohs might have given you five thousand dollars or more for one kind. Some neighhor of his, just from a spirit of rivalry, might have out-bid him a few thousand more for the next, and so on, until you might have made $40,000 or $50,000 by the investment. Don't you wish you could have tried it? Do some of you eay you would like to try it now? It is too late. The tulip mania is over. Though people valne beautiful flowers now, they will pay only what is reasonable for them. They prefer to speud their money in more useful ways. And then, you know, if you made money as easily as we were talking of, you would not valne it. You would be apt to spend it quite as fast ae you made it. After all, far the best way to make money and do well in life, is by studying hard and forming good habits while young, that you may be industrious, and prudent, and saving as you grow older. And while we strive to attend properly to all the duties of life, let us always admire and love flowers, as among the most beautiful gifts that God has hestowed upon man.

RALPH RAMBLER.

United States Mining Laws and Regulations Thereunder.

[Continued.]

28. The claimant is required in the first place to have a correct survey of his claim made under authority of the Snrveyor General of the State or Territory in which the claim lies; such survey to show with accuracy the exterior surface boundaries of the claim, which boundaries are required to be distinctly marked by mouuments on the ground.

29. The claimant is then required to post a copy of the plat of such survey in a conspicuous place upon the claim, together with notice of his intention to apply for a patent therefor, which notice will give the date of posting, the name of the claimant, the name of the claim, mine or lode; the mining district and county, whether the location is of record, and if so, where the record may be found; the number of feet claimed along the vein and the presnmed direction thereof; the nnmher of feet claimed along the lode in each direction from the point of discovery, or other well-defined place on the claim; the name or names of adjoining claimants on the same or other lodes; or if none adjoin, the name of the nearest claims, etc.

A CALIFORNIA TULIP—CYCLOBOTHRA PUCHELLA.

30. After poeting the said plat and notice upon the premises, the claimant will file with the proper register and receiver a copy of such plat, and the field-notes of survey of the claim, accompanied by the affidavit of at least two credible witnesses that euch plat and notice are posted conspicnously upon the claim, giving the date and place of such posting; a copy of the *notice* so posted to be attached to, and form a part of, said affidavit.

31. Attached to the field-note so filed must he the sworn statemeut of the claimant that he has the possessory right to the premises therein described, in virtue of a compliance by himself (and by his grautors, if he claims by purchase,) with the mining rules, regulations, and customs of the mining district, State, or Territory in which the claim lies, and with the mining laws of Congress, such sworn statement to narrate briefly, but as clearly as possible, the facts constituting such compliance, the origin of his possession, and the basis of his claim to a patent.

32. This affidavit should he supported by appropriate evidence from the mining recorder's office as to his possessory right, as follows, viz: Where he claims to be a locator, a full, true and correct copy of such location should be furnished, as the same appears upon the mining records; such copy to be attested by the seal of the recorder, or if he has no seal, then he should make oath to the same being correct, as shown hy his records; where the applicant claims as a locator in company with others, who have since conveyed their interests in the lode to him, a copy of the original record of location should he filed, together with an abstract of title from the proper recorder, under seal or oath as aforesaid, tracing the colocator's possessory rights in the claim to such applicant for patent; where the applicant claims only as a purchaser for valuable consideration, a copy of the location record must be filed, under seal or upon oath as aforesaid, with an abstract of title certified as above by the proper recorder, tracing the right of possession by a continuous chain of conveyances from the original locators to the applicant.

33. In the event of the mining records in any case having been destroyed hy fire or otherwise lost, affidavit of the fact should be made, and secondary evidence of possessory title will be received, which may consist of the affidavit of the claimaut, supported hy those of any other parties cognizant of the facts relative to his location, occupancy, possession, improvements, &c.; and in such case of lost records, any deeds, certificates of location or purchase, or other evidence which may he in the claimant's possession, and tend to establish his claim, should be filed.

34. Upon the receipt of these papers the register will, at the expense of the claimant, publish a notice of such application for the period of sixty days, in a newspaper published nearest to the claim, and will post a copy of such notice in his office for the same period.

35. The notices so published and posted must be as full aud complete as possible, aud embrace all the *data* given in the notice posted upon the claim.

36. Too much care cannot be exercised in the preparatiou of these uotices, inasmuch as upon their accuracy aud completeness will depend, in a great measure, the regularity and validity of the whole proceeding.

37. The claimant, either at the time of filing these papers with the register, or at any time during the sixty days' publication, is required to file a certificate of the surveyor general that not less than five hnndred dollars' worth of labor has been expended or improvements made upon the claim by the applicant or his grantors; that the plat filed by the claimant is correct; that the field notes of the survey, as filed, furnish such an accurate description of the claim as will, if incorporated into a patent, serve to fully identify the premises, and that such reference is made there to natural objects or permanent monuments as will perpetuate and fix the *locus* thereof.

38. It will be the more convenient way to have this certificate endorsed hy the surveyor general, both upon the plat and field notes of survey filed by the claimant as aforesaid.

39. After the sixty days' period of newspaper publication has expired the claimant will file his affidavit, showing that the plat and notice aforesaid remained conspicuously posted upon the claim sought to he patented during said sixty days' publication.

40. Upon the filing of this affidavit the register will, if no adverse claim was filed in his office during the period of publication, permit the claimant to pay fer the land, according to the area given in the plat and field notes of survey aforesaid, at the rate of five dollars for each acre and five dollars for each fractional part of an acre, the receiver issuing the usual duplicate receipt therefor; after which the whole matter will be forwarded to the Commissioner of the General Land Office, and a patent issued thereon if found regular.

41. In sending up the papers in the case the register must not omit certifying to the fact that the notice was posted in his office for the full period of sixty days, such certificate to state distinctly when such posting was done and how long continued.

42. The consecutive series of numbers of mineral entries must be continued, whether the same are of lodo or placer claims.

43. The surveyor goneral must continue to designate all surveyed mineral claims as heretofore hy a progressive series of numbers, heginning with lot No. 37 in each township; the claim to boso designated at date of filing the plat, field-notes, &c., in addition to the local designation of the claim; it being reqnired in all cases that the plat and field-notes of the survey of a claim must, in addition to the reference to permanent objects in the neighhorhood, describe the *locus* of the claim with reference to the lines of public snrveys by a line connecting a corner of the claim with the nearest public corner of the United States surveys, nnless such claim be on unsurveyed lands at a remote distance from such public corner; in which latter case the reference by course and distance to permanent objects in the neighborhood will be a sufficient designation by which to fix the *locus* until the public surveys shall have been closed upon its boundaries.

ADVERSE CLAIMS.

44. The seventh sectiou of the act provides for the adverse claims; fixes the time within which they shall be filed to have legal effect, and prescribes the manner of their adjustment.

45. Said section requires that the adverse claim shall be filed during the period of publication of notice; that it must be on the oath of the adverse claimant; and that it must show the "*nature*," the "*boundaries*," and the "*extent*" of the adverse claim.

46. In order that this section of law may be properly carried into effect, the following is communicated for the information of all concerned:

47. An adverse mining claim must be filed with the register of the same land office with whom the application for patent was filed, or in his absence with the receiver, and within the sixty days' period of newspaper publication of notice.

48. The adverse notice must be duly sworn to before an officer anthorized to administer oaths within the land-district, or hefore the register or receiver; it will fully set forth the nature and extent of the interference or conflict; whether the adverse party claims as a purchaser for valuable consideration or as a locator; if the former, the original conveyance, or a duly certified copy thereof, should be furnished, or if the transaction was a mere verhal one he will narrate the circumstances attending the purchase, the date thereof, and the amount paid, which facts should be supported hy the affidavit of one or more witnesses, if any were present at the time, and if he claims as a locator he must file a duly certified copy of the location from the office of the proper recorder.

49. In order that the "*boundaries*" and "*extent*" of the claim may be shown, it will be incumbent upon the adverse claimant to file a plat showing hie claim and its relative situation or position with the one against which he claims, so that the extent of the conflict may be the better understood. This plat must be made from an actual survey by a United States deputy surveyor, who will officially certify thereon to its correctness; and in addition there must be attached to such plat of survey a certificate or sworn statement by the surveyor as to the approximate value of the labor performed or improvements made upon the claim of the adverse party, aud the plat must indicate the position of any shafts, tunnels, or other improvements, if any such exist upon the claim of the party opposing the application.

[To be Continued.]

AN English company will erect smelting works in Denver. Citizens of Deuver have subscribed money enough to pay for all the ground needed hy the company.

Useful Information.

How to Destroy Musquitoes.

A correspondent of the *Scientific American* recommends the following plan for destroying these nocturnal pests:—The strongest crystallized carbolic acid should be placed in a bottle, and covered with the same quantity of strong red codliver oil; shake the bottle thoroughly until a whitish colored foam appears; if such foam does not arise, however, a small quantity of powdered lime should be added, with a little water. Pour the mixture into a dish or other convenient article, and place directly under the open window, as it is from this quarter the musquito enters.

In my humble opinion, the effect should be explained in this manner: The moment the musquito enters, it loses the scent of blood; for, as the combined odor of the oil and acid is much more powerful than that of blood, it follows, as a consequence, that the musqnito becomes suddenly perplexed. The consequence is, that after scrambling and skirmishing around in the dark, the musquito is led, as it were, instinctively into the mixture, where it is either drowned in the oil or burned to death by the acid.

Formerly I was accustomed to smear my face, arms and breast with the strong oil alone, but I frequently arose in the morning smelling so terribly that, though it protected me from musquito bites, I was happy to lay it aside. I have slaughtered more musquitoes with the article explained above than ever I could have done with my fists or any other dangerous weapons.

American Soda-water.—Soda-water was first made about seventy years ago. The credit of the invention is said to be due to Austin Thwaites, of Dublin.

The manufacture of soda-water, and the methods of drawing it, have been vastly improved during the past ten or fifteen years. In few other departments of inventive taste and skill have greater strides been made toward perfection during the period named. American ingenuity seems to deserve the credit of leading the van in this march of improvements, for even the French, with all their skill in matters bibulous and gastronomic, learned something new about drinkables when some enterprising Yankees set up an "American soda fountain" at the Exposition of 1867. The "*soude Americaine a la creme glacee*" was a novelty to the Parisians and their guests, and met with a hearty welcome from all.

A Paris paper in noticing it said: It is really one of the curiosities of the Exposition to watch the representative of every nation on the face of the globe as they make a first trial of the new beverage. The crowd is so great that they are formed in a line by the police, and, first securing chocks, take a drink in turn. As many as 4,000 glasses have been sold in one day, much to the satisfaction of the parties in charge. The contrast between the soda as served in the American style and the *eau gazens* of the French café is so decided as to make the permanent introduction of the former a certainty.

The American soda apparatus is now in use not only in Europe, but has found its way to far-off Australia, and even to China.

Teeth in Young Sturgeons.—The discovery announced some months ago of the existence of teeth in the young sturgeons has been verified by another observer, who states that in the young of the sterlet there are ten teeth in the upper jaw and eight in the lower. This illustrates a very striking difference in habit between the young and the old. The latter, as is well known, have no teeth, and are believed to be somewhat herbivorous in character, or, at least, to feed only on sluggish invertebrates, while the former are quite voracious in their attack upon free-swimming animal prey. The precise period at which these teeth disappear has not been ascertained.

Origin of Pearls in Oysters.—According to Mr. Garner, in a paper read before the Linnæan Society, the production of pearls in oysters and other mollusks is caused by the irritation produced by the attacks of the minute entozoon known as *Distoma;* and he thinks that by artificial means the abundance of this parasite may be greatly increased. British pearls are obtained mostly from species of *Unio*, *Anodon* and *Mytilus*, but it is probable that all mollusks, whether bivalve or univalve with a nacreous lining to the shell, might be made to produce pearls.

Metallic Soap for Canvas.—The following is highly recommended as a cheap and simple process for coating canvas for wagon tops, tents, awnings, etc. It renders it impermeable to moisture, without making it stiff and liable to break. Soft soap is to be dissolved in hot water, and a solution of sulphate of iron added. The sulphuric acid combines with the potash of the soap, and the oxide of iron is precipitated with the fatty acid as insoluble iron-soap. This is washed and dried, and mixed with linseed oil. The addition of dissolved India-rubber to the oil greatly improves the paint.

Science Perfecting Swimming.—Frederick Barnett, of Paris, has patented a novel yet simple apparatus for swimmers. The invention consists in supplying to man by art the apparatus which has been given to the frog by nature. For the hand, he has a large membranous fin which is held to its place by loops passing over the fingers and a strap around the wrist. The surface presented to the water by these fins is so large as to add greatly to the effectiveness of the strokes of the arm, but not so large as to exhaust the muscular power. Their effect is to very much reduce the effort usually required in swimming. But the greatest ingenuity is displayed in the form and fitness of the fins for the legs, which are attached to the ankles, and are so formed that they act upon the water, in the movement of bringing forward the legs as well as in throwing them back. They act so finely in treading water, as swimmers call it, that one can really walk, if not on the water, at least in it.

The difference between swimming with this apparatus and without it, is very much like the difference between rowing a boat with a handle and the blade of an oar. The old swimmer has no trouble in using the fins at first trial, and is surprised to find with what strength he can swim without exhaustion. He easily swims twice as fast with the apparatus as without, it and with it he can sustain himself for hours upon the water, or swim many miles.—*Scientific American.*

Will not this invention tend to save human life? We regard the art of swimming something more than a luxury. Every child—boy and girl—at ten years of age should be taught to swim. It is a duty which parents owe to children. We teach them various arts by which to earn a living, why not the art of swimming, by which to *save* life? In France, every soldier is taught to swim as a part of his military education.

To Remove Tar, Turpentine, etc., from Objects.—By accident, I recently discovered a simple combination that will speedily and effectually remove from glass, porcelain, hands, or any part of the body, Venice turpentine, tar, pitch, or any sticky substance of a like nature that will resist warm water and soap. It is entirely harmless to the skin, and yet will remove these substances as promptly and as thoroughly as soap and water will remove common dirt.

All are aware how difficult a task it is to cleanse a graduate after measuring any given quantity of Venice turpentine, or to remove the traces of a rather soft, sticking or other plaster, from the human body. Now to let the "cat out of the wallet," here is the secret in a nut-shell.

For Cleansing Glass.—An amalgam of the pulverized extract of licorice and oil of aniseed. This seems to combine with the turpentine, and it may then be rubbed dry and clean with a pledget of cotton.

For cleansing tar or pitch from the skin, make a mixture about the consistency of thick cream, and rub on thoroughly with the hand; then follow with a piece of good soap, a sponge, and warm, soft water.

We give you this gratuitously on the condition that you inform me if it does not do what we claim for it.—*Cor. Med. and Surg. Rep.*

Coal Transportation.—It would require ten thousand locomotives and two hundred thousand cars to carry the annual product of Pittsburg coal to market, and yet Congress grumbles about making appropriations to keep the Ohio in a navigable state. Do railroad companies grumble at the expenses necessary to keep in proper repair their roads? Estimating the value of the Ohio river according to the transportation it affords, it is the cheapest line that can be sustained, and pays better dividends to consumers in the way of cheaper products than the best railroad stock in the country.

Improved Dining Table.—The dining tables of the Oneida community, Oneida county, N. Y., are made double, and the central part revolves. All articles of regular use, such as bread, butter, salt, water pitcher, goblets, spoons, milk, sugar, etc., are placed on this central portion, and persons seated at the table wait on themselves, by turning the center until the thing they want swings around in front of them.

One of the most marked organic differences between the sexes is that of muscular action. No one who carefully watches the muscular acts of woman will fail to perceive a tendency to do them with a sort of rush, with a superabundance and sudden exertion of force rather than by the gradual application of the precise amount by which the end in view can be secured.

Detersive Paste for Removing Grease from Silk.—Rub together fine French chalk and lavender to the consistency of a thin paste, and apply thoroughly to the spots with the fingers; place a sheet of brown or blotting paper above and below the silk, and smooth it with a moderately heated iron. The French chalk may then be removed by brushing.

Red Ants, if made angry, discharge a very pungent acid substance, called formic acid, "formica," being the word for ant. If these ants are distilled, a substance is produced so burning that if it is dropped on the skin, it eats into it like fire. It is also derived from the stinging nettle.

Good Health.

Aphasia.

This disease of the memory or impairment of the idea or power of expressing language may be illustrated by the following instances: A gentleman of seventy years, when wishing for anything, constantly employed some inappropriate word. If he desired bread, he asked for his boots, yet would be furious when these were brought. If he wished a tumbler to drink from, he would call for an utterly unsuitable vessel, and *vice versa*. Yet he was conscious that he used the wrong word, for if another person suggested the proper word he at once adopted it. Sometimes the substitution is applied to a single letter. An instance of this occurred in a learned patient of Dr. Crichton's who substituted the letter *z* for *f*, and, if he desired *(Kaffee)* or coffee, he asked for *(Katze)* a cat. A singular case was that of Madame Heunert, who asked for a table when she wanted a chair, and for a book when she desired a glass, and even when the proper word was suggested she could not pronounce it, yet she conducted her household affairs with accuracy and regularity.

Not only does the defect in question affect the power of speech, but it also extends to the act of writing. The person may articulate fluently and rapidly, using strange words that he has coined, or substituting unsuitable words. He may even know that he is talking nonsense, yet when he attempts to express his ideas by writing he will either write his words in conformation to his use of them or he will write an unintelligible scrawl.

Among other odd examples of this defect is one related by Professor Hammond, in which the person always made the answer *tois* to any question implying the use of figures, though he would correct himself by holding up the right number of fingers. For example, if he meant two, he would say *tois* and hold up two fingers; if he meant seven he would say *tois* and hold up seven fingers; if he meant eighty-four, he would say *tois*, hold up eight fingers and then four. Another gentleman could not recollect the names of his friends, but always designated them by their age.—*Scribner.*

Novel Cures.—The world is full of new cures, and of course they must pay or they would not multiply as they do. We have the water cure, steam cure, botanical cure, lifting cure, grape puncture cure, the spirit cure and infinitesimal pill cure, among others; and although each may have some decided merit in special cases, and the old system of allopathy may be shockingly misapplied frequently, still the main basis of success for most of the new cures must be ignorance and credulity. We often hear statements which we know to be false about the healing of serious diseases, and we are told that abroad remedies are extensively purchased, and that charlatans have large practices. Yet, in spite of all these things, or perhaps with their assistance to some extent, the science of medicine continues to advance.

These ideas suggested themselves to us upon reading that an ozone cure has been started in Germany, and great claims are made for it. Ozone, a peculiar condition of the oxygen of the atmosphere, is said to be a remedy for a multitude of diseases, including cholera, gout, and certain forms of fever and rheumatism, which diseases set in only when ozone is lacking. It is also an antidote for such poisons as prussic acid and strychnine. The method of application has not been made public, so far as we know; and we do not attach much faith to the new cure. But if the opinions and observations published by prominent scientists are correct, ozone deserves very careful study. It is said that the atmosphere at San Francisco has an exceptional large proportion of ozone.—*Alta.*

A Remarkable Cure—Skin Grafting.—One of the most remarkable cures on record has been nearly effected upon the person of Miss Hattie Thomas, of Waterbury, Ct., who was scalped in a button manufactory over a year ago, from the nap of her neck to her eyeballs, so that the skull was laid bare. Death was expected, and almost hoped for, as the only relief which could come to her; but the doctor noticing that she rallied from the first prostrating effects of the accident, determined to experiment with the French process of "skin grafting," and after the head was brought into a healthy state of suppuration he made the first attempt, taking the "seed skin" from the patient's arm. The result was admirable, but exhaustion was induced by the new wounds, and a supply of skin had to be taken from other sources. The nurse of Miss Thomas kindly volunteered. The doctor, delighted with his success, applied the knife to his own arm, and many young lady friends came forward and sacrificed portions of their own bodies for the salvation of their suffering sister. Over 150 separate pieces made up the new scalp, and Miss Thomas has souvenirs of her friends, much better than bedquilt blocks or even locks of hair.

Antidote to Liquor Poisoning.—The physician in charge of the Druukard's Department of Blackwell's Island says that milk or eggs are antidotes for liquor poisons, and those who must drink liquor should mix milk or eggs with their "poison," which will take effect on those articles instead of the toper's stomach.

Action of the Gastric Juice on Calomel.

Professor Tueon has been experimenting upon the effect of the constituents of the gastric juice upon mineral substances, especially those employed as medicines; and for this purpose prepared, first, a mixture of calomel and distilled water containing two per cent. of hydrochloric acid; second a mixture of calomel, pepsin, and distilled water; and third, a mixture of calomel, pepsin, and distilled water containing two per cent. hydrochloric acid. These mixtures were placed in glass vessels, and kept at 100° F. for twenty-four hours, being shaken occasionally. They were then thrown on to filters, of Swedish paper, and the filtrates saturated with hydrosulphuric acid.

The filtrates from experiments numbers one and two remained unaltered, while number three yielded a black precipitate of sulphide of mercury. These experiments, therefore, show that neither dilute hydrochloric acid (two per cent.) nor pepsin, alone, is capable of dissolving calomel, but that when these agents are mixed they do effect its solution, and, consequently, that the digestion of calomel, so far as its solution in artificial gastric juice is concerned, is brought under the same conditions as that of the albuminoids.

These observations are of considerable importance, as illustrating the method by which calomel enters the circulation, so as to exercise the various therapeutical effects which it exhibits.—*Harper.*

Vaccination and Revaccination.—The following statistics are probably the most reliable and instructive of any of the kind ever published, and are well worth heeding. From an official report made on the subject, it appears that in the army of Bavaria revaccination has been compulsory since 1843; and from that date until 1857—a period of 14 years, not a single case of unmodified small-pox occured, nor a single death from the disease. Of the nearly 50,000 revaccinations in the Prussian army, only about one-third were perfectly successful—resembling, that is, the result of a primary vaccination so closely as scarcely to be distinguished from it; and the remaining two-thirds being more or less modified, or failing entirely. In connection with these facts, the statement is also made that the distinguished English vaccinators—Dr. Marson, in 40,000 vaccinations; Dr. Sveese, in as many more; Sir Wm. Jenner, in the cases of 13,000 sick children and adults in London; and Dr. West, of the Children's Hospital, in to 26,000 children—all concur by saying that they have never seen any other disease than that of vaccination communicating with the vaccine.

A Hint to Housekeepers.—The main amount of injury done to the tender stomache of young children, invalids and sedentary persons, by eating bad bread day after day from one year's end to another, must be enormous. A cook who cannot make good bread of every description ought not to be allowed house-room for an hour; and that mother is criminally negligent, whatever may be her position, who does not teach her daughter to know what good bread is and how to make it. Alum is used to give whiteness, softness and capacity for retaining moisture. Lime could be employed with equal effect, having the advantage of correcting any sourness in the bread or stomach; besides affording an important ingredient for making the bone strong. Every housekeeper should know how to make two or three kinds of bread.

Ben of Glauber's-Salt.—A deposit of Glauber's-salt has lately been discovered in the Caucasus, not very far from Tiflis. In sinking a shaft the experiments penetrated a bed of pure Glauber's-salt to a depth of five feet, with a probability that the thickness was much greater. In the same region there are various lakes filled with solutions of Glauber's-salt, which furnish the apothecaries of that neighborhood with what they need of that substance, as it crystallizes in perfect purity along the edge of the water.

To Remove Warts.—Take good indigo, such as is used by the laundress, soak it in water; with a knife pare away the surface of the warts so as to cause the blood to flow. Wipe off the blood and drop the indigo water on them. Very large ones may require a second application. The indigo produces no pain whatever. I have used and recommended this cure to many persons, and have never known it to fail but once.—*Rural New Yorker.*

For Hysterics. — Carraway seeds, finely pounded, with a small proportion of ginger and salt spread upon bread and butter and eaten every day, especially in the morning and before going to bed, are successfully used in Germany as a domestic remedy against hysterics.

Poison from Locusts.—Three children were found dead under a mulberry tree in Lebanon, Ind., a few days ago. They died from the effects of the poisonous matter deposited in the berries by locusts.

A New Cause of Cancer.—The physicians of New York report an alarming increase of cancer on the nose, caused by the practice of wearing eye-glasses that are held to the bridge of the nose by a spring.

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Illustrations and Reports of Mining Enterprises Wanted.—Drawings or photographs of mining works that are of general interest to our readers are solicited for publication in this journal. Official reports of Companies, and description of mines of importance, of special interest, are also desired. Sketches of any new method and discovries will be very acceptable.

San Francisco:

Saturday Morning, Aug. 10, 1872.

Gold and Legal Tender Rates.

San Francisco, Thursday, August 8, 1872.—Legal Tenders buying, 87; selling, 87½. Gold in New York to-day, 115½.

Table of Contents.

ILLUSTRATIONS.—Bassett's New Smelting Furnace; Hofmann's Quicksilver Elevator, Page 81. The Tulip, 88. The Diamond; The Cotton Pest, 89.
EDITORIALS.—Academy of Sciences; New Quicksilver Assay; Railway Speed, 81. The Hard Woods and Fancy Woods of California; The Diamond Excitement, 88. Fruit Food, 89.
CORRESPONDENCE.—Notes of Travel in White Pine County, Nevada—Continued, 82.
SCIENTIFIC PROGRESS.—The Theory of Fermentation; Comets and their Tails; Seeley's "Extract of Hops;" Astronomical Researches; Hydro-Electric Cables; Burning the Diamond, 83.
MECHANICAL PROGRESS.—Iron vs. Steel; Silvered Steel Cutlery; Plaster as a Protection from Fire; Architecture—Ancient and Modern; Drilling Glass with Emery; Cutting Marble; The Bank's Furnace, 83.
MINING SUMMARY from various Counties in California, Nevada, Colorado, Montana, and Utah; Mining Shareholders' Directory; Stock Report, 84-5.
DOMESTIC ECONOMY.—Good Receipts not all that is Needed; Items for House-Keepers; Cooking Spinach; Home-made Candy, 90.
USEFUL INFORMATION.—How to Destroy Mosquitoes; American Soda-water; Teeth in Young Sturgeons; Origin of Pearls in Oysters; Metallic Soap for Canvas; Science Perfecting Swimming; To Remove Tar, Turpentine, etc., from Objects; Coal Transportation, 87.
GOOD HEALTH.—Aphasia; Novel Cures; A Remarkable Cure; Action of the Gastric Juice on Calomel; Vaccination and Revaccination; A Hint to Housekeepers; Bed of Glauber's Salt, 87.
MISCELLANEOUS.—Artesian Wells in Idaho, 82. United States Mining Laws and Regulations Thereunder, 86. New Incorporations; Mining Discoveries; Mining Sales, 89.

Æsthetics.—Received of Payot, Upham & Co. a book, treating of the science of æsthetics, on the nature, kinds, laws and uses of beauty, by Henry N. Day. We know of no science, profession, trade, occupation or pursuit in which man is employed, that would not be rendered more engaging, interesting and attractive by a perusal of this work; so that every man and woman in the land should read it. An extract from the author's preface will be found under head of "Mechanical Progress" in another column.

Shipping Cinnabar to China.—A contract has been entered into with parties representing the Keystone and other quicksilver mines in San Luis Obispo county, for 1,000 tons of cinnabar, to be delivered for shipment at $50 per ton, to parties in this city. The ore is to be sent to China.

The Marysville *Appeal* speaks of a new and promising gold-bearing ledge having been discovered in Jim Crow Cañon. Indications of the same ledge have been found on the point between Downieville and the south fork of the north fork of the Yuba.

The mill of the Eliza Mill & Mining Co., in Siskiyou county, Cal., which was destroyed by fire on the 28th ult., as mentioned in our last issue, is being rebuilt. The loss was entirely covered by insurance.

Quicksilver Discovery.—Another promising vein of cinnabar is reported as having been found in the range between Napa Valley and Santa Rosa.

The Hardwoods and Fancy Woods of California, Mexico, and the Islands,

THEIR GREAT VARIETY, THEIR SPLENDID COLORS, AND THEIR USES.

Lumber is one of the first necessities of manufacturing industry—lumber in abundance cheaply obtained, found at places easily accessible from shipping ports, and of sufficient variety to supply the multifarious needs of the present day. California, and all the Pacific coast, has been particularly favored in this regard, the great Cordillera, the Sierra Nevada, and their multifarious systems of crossings, chains and spurs, may still be regarded as one vast system of forests, of woods, the trees in some of which, date back to a period anterior to the rise of mighty Rome, when the people that raised the grand monuments that cover Egypt were yet in their prime, ere Assyria, Persia or Greece, before the civilization of the Aztecs and the Peruviane, nay, probably prior to the advent of the Red Man to this continent. Abundance of lumber for all ordinary purposes has been since the foundation of the State drawn from these sources, yet we have never been able to obtain hardwood sufficient for our wants, and it has been often rashly conjectured, and still more rashly asserted, that we possessed none in our forests, and would be forever dependent on the East for our supplies. We have, in fact been thus dependent for the last twenty-five years, and being obliged to thus import, has been one of the greatest

Obstacles to Manufacture.

The coachmaker, railroad car, wagon maker has had to wait six months before he could obtain supplies by way of Cape Horn, and then he was obliged to submit his convenience to the caprice or necessities of the exporter at New York. Very often when he wanted a particular kind of lumber, he could not get it, and he never could supply himself with the variety necessary to the successful carrying on of a business, which at first limited in scope, was, as is always the case under similar circumstances, remarkable more for the variety and incongruity of the orders received in it, than for anything else.

The Loss to the State

Amounted to millions of dollars, within the last ten years. Last year there was used in San Francisco, $744,650 worth of Eastern lumber in various manufactures, divided as follows: Fine furniture, $346,260; carriage and car making, $200,000; picture frame making, $50,000; barrel, cask, keg, etc., making, $100,000; billiard and bagatelle making, $28,000; turned and carved work, $10,000; ship block making, $10,000. During the last ten years not less than $5,000,000 has been lost to the coast in this way from the city alone, and if we include the wagon making, etc., of the whole Pacific Coast, it will not be less than $10,000,000. But this is not the only lose.

The Import of Wagons and Fine Furniture

Is fully equal to the amount of the local manufacture, very probably greater, and if we had all the lumber we wanted, ready to hand, all this could be saved to the city and Coast. The manufacture of farm wagons used to be extensively carried on, now it has nearly altogether ceased, and almost every day we receive overland by rail, one, two, sometimes four cars of farm wagons. Between carriages, wagons, and furniture, we import $1,500,000 yearly, this going on for ten years, would aggregate a loss to the Coast of $15,000,000, which added to the loss in imported material would give a total of $25,000,000. The idea of

Experimenting

On the woods indigenous to the Lower Coast, the Islands, and Mexico, so as to obtain substitutes for the hardwoods and fine fancy woods of the East, has long been present to the minds of many of our most enterprising manufacturers, but it is chiefly to the gentlemen who manage the Kimball Car Company, that is due the credit of showing what a wealth and variety of lumber, useful for all purposes of manufacture and highly ornamental, we possess on this Pacific Coast. They first made known the fact to the world, in the splendid assortment of woods that they used in building the justly celebrated Palace Car, destroyed in the great fire of Chicago, and they are now, and have been for a long time past, engaged in making a series of experiments testing the adaptability of the hardwoods of Mexico and the Lower Coast, to purposes of carriage body, carriage wheel, and wagon manufacture.

The Woods

Are of upwards of fifty different varieties, of which we purpose here to mention the principal. We begin with some new to our manufacturers, well known Californian and Oregon woods. The Oregon oak is a splendid hard wood, and can be used for a great variety of purposes, such as making barrel staves, etc. It has not as yet been sufficiently tried for carriage and wagon stock.

Spruce is being sold to car makers and is taking the place of white wood. It sells at $40 per thousand.

The madrona is useful for many purposes especially for mill work.

The California maple can be used for nearly all kinds of manufacturing purposes, especially for those of furniture manufacture. It can also be used for wagon axles.

The California laurel is one of the finest species of lumber in America. It takes a most beautiful transparent polish, exhibiting a series of most graceful wavy lines. It is specially adapted for furniture, manufacture, ship building and for veneering.

The Cocobole which is found in large forests, near the coast, about Acapulco in Mexico, is a beautiful purple wood, and takes a high polish. It is also found in Lower California.

The Spanish cedar is also found in Central Mexico, and is a fine wood for furniture manufacture. It makes beautiful counters. It can be laid down here at from $40 to $75 per thousand feet.

The Prima Vera is, too, found near Acapulco. It is of a light color, much like maple and like it takes a high polish. It can resist the effect of the greatest heats without splitting. It is peculiarly suited to the manufacture of car panels.

Tomano or perfumed wood, so called from its fragrance, grows back on the hills of Central Mexico. It is of a white color outside, and is leather color inside. It is used for the manufacture of glove boxes. An oil is extracted from the tree and from the nut. Only logs have as yet been brought to this city, where they are laid down at ten cents per pound.

The Coha wood, Sandwich Islands, is of a dark brown color. It takes a very pretty polish, and has been used for making counters and for finishing library work. It is well adapted for furniture and ship building. It can be laid here at $80 per thousand feet.

The Coffee wood is found in the peninsula of Lower California and in the State of Sonora. It is very hard and heavy, fine grained, and of a light color. It is finer and tougher than hickory, and is well suited to making carriage spokes, but not to general carriage or wagon work, as it is too heavy. It is sold here at ten cents per pound.

The Ebony is a fine, hard grained Mexican wood, of a whitish or yellowish color. Enough of this has not been brought to this city to test its value for carriage stock, etc., but it has been used in the manufacture of knife handles.

The Mountain Mahogany is found in Lower California and also in the northern portion of this State, back in the mountains. It possesses all the qualities of other mahogany and is suited to the manufacture of furniture. It sells at $80 per thousand.

The Mesquite, growing in this State and in Lower California has been used successfully by the Kimball company in the manufacture of carriage hubs, and is said by them to be the best yet used for that purpose, as it will stand any heat.

The Oquihilado, Mexico, is a dark, solid, heavy wood. It is too heavy and tough for carriage work, but is suited for sieves, journals, mills, etc. It has been used in lieu of grindstones and wears as well as steel.

The Tiger wood of Mexico, is a strong, heavy wood like iron wood or *lignum vitæ*, and is, like the preceding, too hard for general carriage work. It can be used, though, for finishing purposes. It derives its name from its color, which is variegated and striped, making a polished section resembling the coat of the tiger or zebra.

The Tecamato is also found in Mexico. It is a hardwood of a light color, but not much is known about it.

The Chililo, Mexico, is a hard dark wood as yet almost untried the only use to which it has been put, being that of turning knife handles.

The Cabo de Hacha, Mexico, is a very hard wood, and is very high colored, being almost of a royal purple. It has not yet been sufficiently tested, but has been used for gears of wagons.

The Lance wood is found on the Lower Coast and in Central America. It is the best wood for buggy poles that has yet been found, but enough of it cannot be had here. It costs 10 cents per pound.

The Lina Fuerta is very heavy, and is of a yellow color. It has not been yet tested as to its adaptibility for carriage stock, but walking sticks have been made from it.

Rosewood is another of these Indian woods. It is in adaptibility very similar to Mesquite.

An Export to England

Of many of these have been going on for some time past. The Cocobole and Spanish Cedar is sent there in ship loads at a time, as also is the Tomano or Perfumed Wood, which is there very extensively used. It is certainly strange that the English living so many thousand miles away should be the first to pioneer the lumber wealth almost lying at our doors.

It will be seen from the sketch, that we possess

Hardwood Lumber for Manufacture

In almost endless variety, and that we need no longer depend on Eastern importation. We have yet to find out the thousand uses to which they are applicable. Everything necessary for carriage stock has at length been obtained, save only wood for felloes, in which nothing as elastic as hickory has yet been discovered. The only obstacle to the extensive uses of these woods in manufacture proceeds from the indolence and anarchical character of the Mexicans, which renders it difficult to obtain them in sufficient quantity. But California enterprise will not be long without finding a way of overcoming this obstacle.

The Diamond Excitement.

The excitement with regard to the reported discovery of diamonds in the vicinity of northeastern Arizona is still kept up, under the influence of sensational articles which are constantly appearing in the San Francisco dailies. Two additional companies have been formed with millions of capital (on paper), one in this city, and the other in Virginia City, Nevada, each of which proposes to send out prospectors the present season. Conflicting claims are also set up to prior rights of discovery, etc.

With regard to the latter, we very much doubt whether either of the conflicting parties have ever been within hundreds of miles of the location made by Mr. Janin, for Roberts & Co. The evidence, so far as it has any weight at all, goes to show that there is an extensive region of country, dotted over with a deposit containing precious stones, located much like the deep gold-placer diggings of California, only that in this instance the deposits are very shallow.

We are assured on very good authority that the Roberts Company will not send out any new party until next spring. The parties already there will remain, if circumstances will permit, otherwise they will return before winter sets in. We are assured that the diamond fields located by Roberts & Co., are in the midst of a mountainous country and covered with snow during several of the winter months.

Our advice to intending prospectors is to wait until spring. The chances are that any parties who start out now will be compelled to return for a new start in the spring. If any reliance is to be placed on the reports already received, there will be room enough and to spare for all who may wish to go for several years to come, and those who wait for the information that will be brought back by the first returning prospectors, will reap the cream of the thing, if there really is anything valuable to be found there. Of course there will be a few who will brave any danger or hardship, to be the first at the diamond fields; but none except experienced mountaineers should think of being of that number.

Burning of the Erie Railway Shops.—A fire occurred in the Erie Railway shops, in Jersey City, on the night of the 24th ult., which destroyed the entire shops of the company. There were thirty-three engines in the repair shop. An immense quantity of tools, machinery, patterns, etc., were destroyed. The loss is estimated at about $300,000. The building will be immediately rebuilt.

The Millerton *Expositor* gives some particulars of the discovery of a very rich gold-bearing ledge, near Sycamore creek.

A New Cotton Pest.

Editors Press:—I enclose yon specimens of fly which is doing serious damage to the cotton crop of this vicinity, and as they are new to me as well as to others, would like your opinion of them.

Their depredations are not on cotton alone, but on everything that puts forth a tender bud; even the oak, ash, box elder, in fact, everything. They are particularly fond of sour clover and alfalfa. I have 12 acres of alfalfa with scarcely a bloom, and no seed. I first noticed them on the Irish potatoes in May by seeing the buds droop.

They are inclined to be sluggish, and when you approach them will dodge under the leaf. I have been told by a Mexican that he has seen them in Mexico, but they only appear in 8 or 10 years. Yours truly, J. M. Strong.

We herewith give our readers an accurately drawn illustration of this insect pest which threatens serious injury to the cotton crop in California. It is enlarged to three times its natural length and width. For an entomological examination we referred the insect to Mr. C. H. Dwinelle, of Oakland, who reports to us as follows:

I have examined the insect which Mr. Strong sent you, and am sorry to say that I have not been able from the books at my command to determine their species. They belong

to the group of insects known to naturalists as the Hemiptera. The name means half-winged, and is descriptive of the appearance of the upper wings, half of which appear to be solid and the other half transparent. The mouth parts are formed into a sucking tube, which is easily seen in the specimens sent by Mr. Strong, and also in the common squash bug.

From descriptions and cuts given in some of the works on insects, the pest which is troubling our cotton plants must be closely related to the Chinch bug, which is often so destructive in wheat fields. It does its mischief by sucking out the juices which should go to nourish the growing parts.

The insect in question is a true *bug* and not a *fly*.

If Mr. Strong will send me a number of the bugs, enclosed in a small vial of alcohol, I shall be glad to send them to professional naturalists, who may be able to give information that would be interesting and perhaps useful.

Fruit Food.

With all the increase of nurseries and orchards throughout the entire of the Atlantic States, good fruits are worth more now than they were twenty years ago. There is a great deal more fruit eaten, systematically eaten with nearly every meal, summer and winter, either unprepared or canned. As a consequence there is a positive and growing interest in the production of fruits, and as the object possesses pecuniary interests to most growers, they are taking care to cultivate the best varieties.

But as an article of food, fruits are now considered as essential to a really proper diet, taking rank with bread and vegetables; and if less meats were used and their place supplied with fine fruits, it would promote the general health of the people and particularly in all hot countries and climates. We overtax the digestive powers by eating too much solid, concentrated food. For the heavy meats substitute more ripe fruits, or if not ripe, then let them be thoroughly cooked.

Arbitration Courts for Labor.—A Good Idea.—At last there is a probability of a settlement of the trade disputes in Berlin, which have caused so much suffering and so lengthened cessation from labor. Permanent courts of arbitration, to which all matters of disagreement between employers and workmen are to be referred, will, it is hoped, prevent future strikes by removing their cause. The establishment of such courts in all large centers of population might be made productive of a vast amount of good, both to employers and employed, if they could be so organized and conducted as to secure the confidence of the community.

Utah Items.—A dispatch from Salt Lake dated the 3d inst. says that over $300,000 worth of refined silver bullion had been received there from the mines during the week. It is said that a company of Cincinnati capitalists are investing a large amount of money to work mining property in Tintic district.

The Diamond—No. 1.

The recent discovery of diamonds on this coast, and the consequent excitement with reference thereto, renders any information with regard to these gems of particular interest just at this time. With this view we propose to give several articles which will embrace all attainable information with regard to the circumstances under which they are found, the mode of searching for them, the way in which they are placed upon the market, the manner in which they are cut, how they are valued, etc.

How the Diamond is Cut.

Passing over, for the present, the mechanical appliances by which the work is done, we will state that diamonds are cut in four different shapes: the brilliant, the rose, the table and the brilliolette. The two latter have pretty much entirely gone out of fashion, and need not be described here. The rose is flat on the under surface, and cut into innumerable facets on the upper. This form is also rarely seen in this country. The form most commonly employed here is the brilliolette or brilliant. Ninety-nine out of every hundred diamonds sold in the United States have that shape.

The form of these gems may be fully understood by referring to Figs. 1, 2, and 3 which are accurate to size and form of the famous "Koh-i-noor," now belonging to the British Government. Fig. 1 represents the front or top view; Fig. 2 the back or bottom view; and Fig. 3 a side view, showing the thickness or depth of the jewel.

The proper shape of a brilliant should be nearly that of the small figures here shown, illustrating the various sizes of diamonds, from 1 carat to 10 in size; the corners should be a little more rounded than shown, but not so much as the Koh-i-noor. If Figs. 1 and 2 of that gem are carefully examined it will be seen that the outline is not regular; it presents neither a perfect circle or oval, nor are the corners uniformly rounded off as shown in the smaller engravings of the various carats. This irregularity is what is referred to by experts when they speak of that famous gem having been spoiled in the cutting.

Fixed laws govern the proportions of the *brilliant*. Thus a diamond of 1 carat should have its diameter, as shown, of about ¼ of an inch, with a depth of rather over ⅛ inch, shown by the straight line underneath. The facet in the center of the top should also have its due proportion to the full diameter of the gem, as also should the center facet on the bottom, which is reduced, in the single carat to almost a point. These bottom facets are represented by the small dots, found under each of the graded sizes, as shown from 1 to 10.

These relative proportions may be more fully and distinctly studied by referring to Fig. 3 where the top facet, the greatest diameter (or "girdle," as it is technically known) and the bottom facet are distinctly shown.

If the diamond will not admit of bringing out the perfect proportions, any variation therefrom detracts from the value of the gem. Jewelers often try to conceal the thickness of the gem by the setting. Any such attempt is a cheat.

How the Diamond is Valued.

The value of the diamond depends almost entirely on the circumstances connected with its appearance, such as beauty, uniformity, the play, lustre, vivacity of colors, etc.; also on the perfection of the cut, polish, etc. A perfectly limpid diamond is worth about twice as much as one which is even very slightly tinted; while those which approach to opaqueness have no value for brilliants, and are used only in the mechanical arts. Their transparency and clearness are divided into three degrees, as follows: Of the first water—those which are free from the slighest fault; the second water—which though clear and limpid, are marred by dark spots or clouds; of the third water—those which have a slight tint of any color, or which though limpid, have material faults.

FIG. 1.—THE KOH-I-NOOR—FRONT VIEW.

FIG. 2.—THE KOH-I-NOOR—BACK VIEW.

FIG. 3.—THE KOH-I-NOOR—SIDE VIEW.

In order to determine readily the character of a diamond, it is well to breath on it, whereby it loses for a moment its lustre, when the eye can more readily distinguish its faults. The genuine diamond also becomes clear much sooner than the false.

The gems are sold by weight, as carat and grains; 1 carat is equal to 4 grains, and 44 carats are equal to one ounce. The name carat is from *Kuara*, the coral tree (erythrima), the red pods of which, when dry, were formerly used for weighing gold dust. Each of these pods weighs 4 grains, which is therefore equal to one carat, or, as it was formerly spelt, karat, to conform more nearly to the spelling of the plant.

A brilliant, properly cut, of one carat weight, is worth in Paris from $60 to $70. In the United States, it would be worth from $100 to $125. Extraordinarily pure and brilliant ones are sometimes sold for $150.

Diamonds below one carat in weight, are worth at the rate of about $60 in this city; that is, a half carat diamond is worth $30; a quarter carat, $15, etc. When they are so small as to require eight or ten to make a carat, the ratio of price increases by reason of the extra cost of cutting the number of gems required to make the carat.

The price per carat advances in rapid ratio as the diamond increases in size. A brilliant of the first water which weighs one carat is worth, say $125; one weighing two carats is worth $500; one weighing three carats is worth $1,125. The calculation of the value is made by first multiplying the weight into itself, and the sum obtained multiplied again by the price of the carat, as follows: For the two carat gem, 2×2×125=$500; the three carat gem—3×3×125=$1,125, and so on indefinitely.

This calculation, however, does not always hold good after the brilliants exceed ten carats. Fancy, scarcity, demand and other circumstances come in at this point which usually unsettle any fixed rate of calculation.

Rough diamonds, unfit for cutting, and such as are used by glass-cutters, etc., are worth from $10 to 15 per carat; smaller ones, such as are used by lithographers for etching, etc., are worth still less per carat. Black diamonds used for drilling, as in the diamond drill, used for mining and quarrying purposes are worth about $16 per carat. Thus every diamond of whatever character, or however large or small, has its value, and commands a ready sale.

The sizes of the diamonds, from 1 to 10 carats in weight are very accurately given in the accompanying illustration.

The diamond is sometimes of such a form that it can only be cut into what is called spread diamonds or flat stones, so as to display a large surface, which are sold much cheaper, per carat, than those of the regular cut.

New Incorporations.

Big Cottonwood Tunnel and S. M. Co.—Aug. 2. Location: Big Cottonwood District, Salt Lake county, Utah. Capital stock, $500,000, in 50,000 shares. Trustees—Robert Sherwood, Chas. F. McDermott, N. T. Green, Wm. Burling and Smythe Clark.

Weske Gravel M. Co.—Aug. 2. Location: Placer county, California. Capital stock, $500,000, in 5,000 shares. Trustees—Adolph Weske, Frederic Clay and John James Miaburn.

El Dorado Independence Quartz M. Co.—August 5. Location: El Dorado county. Capital stock $4,800,000 in 24,000 shares. Trustees—Jacob Nagler, James S. Houseman, Seixas Solomons, J. A. Pennell, Wm. Holden, Daniel McLeod, R. W. Simpson, E. B. Warsaw, and Samson Rosenblatt.

Original Diamond Discovery and M. Co.—August 5. Object: To mine for diamonds and gold and silver in Arizona. Capital., $10,000,000, in 100,000 shares. Trustees—W. I. Kipp, Jr., Charles Hosmer, M. D. Townsend, Robt. Sherwood, E. J. Elsey, Seth Cook and Jos. Freneh.

Pacific Coast Gas and Water Company.—Aug. 5. Object: To manufacture gas to light streets and buildings, and to supply water in the towns of the Pacific Coast. Capital stock, $2,000,000 in 20,000 shares. Trustees—E. B. Mott, Jr., N. G. Kittle, Robt. Watt, R. A. Swain, J. W. Stow, Maurice Dore, Alex D. Bell, Jos. D. Sedgley, Chas. Lux, W. W. Montague, Albert Miller, O. W. Childs, W. W. Dodge, S. N. Putnam, August Hemme, C. T. H. Palmer, John Jackson, H. B. Clayson, E. C. Boobar, E. B. Rall, Geo. Cadwalladar, Jno. Bidwell, S. Sweet, A. Horton and Chas. Fernald. The company have in contemplation the immediate erection of gas works in Sacramento and Stockton, for which franchises have been already obtained.

Mining Discoveries.—The Reno *Journal* mentions having seen some fine specimens of silver ore from the Poe mine, which was recently located on the Peavine mountain a few miles to the north of Reno. The ore assays from $73.70 to $102.09. Active operations on the ledge will shortly be instituted and if satisfactory a mill will be erected.

The Denver *Tribune* has seen one of the party who went to the new San Juan District, in Colorado, the last of April. The gentleman referred to says the entire distance from Santa Fé, New Mexico, from which place the party started, is 290 miles. Up to the time of his departure a number of arastras were running, and his reports of the richness of the country are very glowing. The *Tribune* says he is a gentleman of intelligence and perfectly reliable, and hazards the conjecture that in all probability, the mines will turn out as wonderful and productive as any the world has ever known. Numbers of prospectors are now thronging to the new district and a quartz mill is now on its way thither. We shall look with interest to further developments in this new gold camp.

New Silver Mines in Nevada.—Maj. Robert M. Goldman reports a new discovery of silver ore of great richness in the Silver Zone Dist., situated about twenty miles due south of Toano, a station on the line of the Central Pacific Railroad, in Elko county, State of Nevada. Quite a number of ledges are said to have been discovered, one of which has been named the Monster Ledge, on account of its large size, being twelve feet wide on the surface, and has been traced already fifteen hundred feet.

Mining Sales.—A half interest in the New York Hydraulic Co's claim, on the La Porte road, about 30 miles from Marysville, has been sold to J. Gibson, for $16,000.

The Salt Lake *Tribune* has been informed that Messrs. Walker Bros. have bought extensively into the Caledonia mine, in Little Cottonwood, Utah.

The White Pine *News* says that Col. Lewis and other Californians have purchased the De Mill mine, a series of seven locations on Schell Creek District, Nevada. The price was $48,000. A water privilege was also bought, and a 20-stamp mill is to be erected.

Improved Treatment of Copper Ores.

Among the patents issued June 25th, we notice an invention by C. M. T. Du Motay, of Paris, for an improved treatment of copper ores, which will be interesting in view of the newly awakened interest in copper mining. The patentee sets forth as followe:

It is well known that sulphuric and chlorohydric acids employed singly or together dissolve but little or not at all the sulphurets, and double oxysulphnrets of copper and iron containing or not containing gold, silver, lead, autimony, and arsenic.

It has been impossible heretofore to euceesfully treat these ores in a crude or roasted state either by sulphuric or chlorohydric acid or by a mixture of these two acids. The solutions or persulphate of iron alone, cold or warm, to dissolve these ores act slowly, and for this reason they cannot be successfully employed to melt the copper contained in the complex pyrites containing this metal alone or mixed with gold, silver, lead, antimony, and arsenic.

We have discovered a new dissolvent—positive and economical—of the ores of copper, carbonates, oxides, and double or multiple sulphurets, and also matte and black coppers containing or not containing gold, silver, lead, antimony, and arsenic.

This dissolvent—which has for its object to rapidly diesolve the sulphurete and oxysulphurets, and all other copper ores, roasted or not—is a mixture of persulphate of iron and chlorohydric acid, or, what amounts to the same, a bath of persulphate of iron, through which passes a continuous current of gaseous chlorohydric acid.

The iron, copper, antimony, and arsenic rapidly and entirely diesolve in this compound. The iron, copper, and antimony, dissolved first to a state of chlorid, finally return, in yielding their chlorohydric acid, to the state of sulphates, while the arsenic remains in solution in a state of chloride. The other metals, such as silver and lead, are attacked first by the chlorohydric acid, and fiually precipitated in an insoluble state in the form of sulphates. The gold, unattacked, follows them into the residuum, insoluble. This residuum, separate from the liquid part, is first roasted and afterward reduced, in the presence of lead, in the cupel. The liquid bath containing the sulphatee of iron, copper, and antimony, and the chloride of arsenic in solution is evaporated to dryness. During the concentration of the bath a part of the chloride of arsenic volatilizes, while the other part remains in the liquor.

The salts, after evaporation, are recovered by the water; the eulphate of antimony is precipitated to the state of subsulphate of antimony, nearly insoluble; and the chloride of arsenic remaining, paeses to the state of arsenious acid, likewise not soluble; while only the copper and iron remain dissolved in the liquor.

When, during the evaporation, all the chlorohydric acid hes not been expelled, and only the antimony and arsenio are left in a chloride state in the liquor, similar reactions to those before described occur—that is to say, the chloridee of arsenic and antimony recovered by the water after evaporation pass away, the first in a state of arsenious acid and the second in a etate of oxychloride, insoluble. The double sulphates of copper and iron remaining in solution are treated by means of metallic iron, which precipitates the copper by the prpcess of cementation. The protosulphuret of iron remaining is treated, in either a moist or hard state, by the oxygen of the air, or by a mingling of air, chlorine, or nitrous vapors, which brings it to a state of persulphate. The peroxide of hydrated iron remaining insoluble from this operation is separated by decantation end set aside. Subsequently treated, and dissolved by sulphurous acid in connection with air, it produces sulphate of peroxide of iron, which eerves to replace the quantity of sulphate lost in the preceding operations. In this manner the chlorohydric acid dieplaced by persulphate of iron, which serves the same pnrpose as the persulphate in the other operation.

It eometimee occurs that in the double liquid of eulphate of copper and iron a small portion of sulphate of silver remains insoluble. To precipitate to a metallic etate the silver contained in this sulphate we cause the reaction of plates of copper or lead, which adhere to the silver, and which we add to the residuum insoluble before being treated in the cupel.

Claim 1. The miugliug of persulphate of iron and chlorohydric acid, which constitute a new and positive dissolvent of the ores of copper, carbonates, oxides, and double or multiple sulphurete, likewise matte and black coppere containing or not containing gold, eilver, lead, antimony, and arsenic.

2. The reactions above described for obtaining in an insoluble state salts and precious metals contained in copper ores treated by our dissolvent.

3. The separation of the copper in a pure state and the removal of the antimony and arsenic.

4. The incessant regeneration of per-sulphate of iron and chlorohydric acid, constituting our dissolving liquor.

5. The employment of persulphate of iron with eulphuric acid in the same manner ae we have used chlorohydric acid.

Cigar Manufacture in San Francisco.

How few people think anything of the price of a cigar, or that the article itself, apart from its daily use, is a matter of importance. It is a fact, however, that in this capital of a land of wine, wheat, and gold, in manufacturing importance, the cigar is king. Lest yeer over 150 factories turned out goods to the value fully of five millions of dollars, and employed for a great part of the year upwards of three thousand persons. Day by day, the manufacturers are helping to swell these figures. In a few years more we ehall supply cigars to the whole of the United States. There are at present in full operation, and making returns to the internal revenue about 100 factories owned by white men and Chinese.

The Clandestine Manufacture of Cigars

In this city is carried on to a great extent, and we are credibly informed that there are hundreds of establishments where such business is carried on. The monthly returns made to the internal revenue, do not account for more than two-thirds of the cigars made in this city. Partnerships of three or four Chinese are formed who make small quantities, and dispose of them as fast as they are made. They buy the most common kinde of tobacco, make it up in any way, and thus undersell the regular manufacturers, and consequeutly can only furnish the most ordinary and common of cigars. It is to be hoped that the authorities will do their utmoet to break up this illicit trade. The clandestine establishments where these are made, swarm in the Chinese quarter; they are found everywhere from garret to cellar, and can of of course be cleared out, if danger looms, at a moments notice. It wae to break them up, that the large manufacturers had passed that provisiou of the revenue law, which destroys the trade in small quantities of leaf tobacco.

The Workmen

Employed iu the San Francisco cigar manufacture may now be said to be exclusively Chineee. Excepting the proprietors there are not more than fifty white men employed in the bueinese iu the city. The Chinese, it is said by manufacturere, seem to he born cigar makers, and they have a elenderness of fingers and a delicacy of touch almost essential to succese in the businees. When they come first San Francisco, they are apprenticed in one of the numerous Chinese factories, where at first they receive board, lodging and clothing, and afterwards in addition to that, about a hundred dollars at the Chinese New Year. After a year or so they are fitted to work in white factories. In theee latter tbey are classed as strippers, rollere and packers. Wrapper stripper, strippers' average, $4 per week; filler strippers, from $5 to $7; rollere, $8; and packers $11 per week. In the factory of Lewis & Co., uuder the new process, rollers average $12 per week, and looking over the pay sheet we saw one who earned $16.35 per week. This would be good wages for white men. The workmen in most of the factoriee are numbered, and are known by these numbers instead of their real namee. In general, they are physically, finely developed, are clean, tidy and industrious; though to this there are exceptions.

The Tobacco

Used is principelly Havana, and Connecticut, though some Pennsylvania is used for wrappers, but it gives the cigar a peculiar and not entirely agreeable flavor. The quantity used by the factories of thie city is not lees than two million and a half pounds a year. It would be a great boou to the State if tobacco culture could be carried on successfully. We could then he able to eupply the great and constantly increasing demand of our factories ourselves. Mr. Culp, of Gilroy, hae been for several years experimenting on the production of Connecticut and Havana leaf tobacco suitable for the manufacture of cigare, and at length claime to have succeeded. He has mede cigars at Gilroy of the tobacco produced off his own farm, and competent judges pronounced them first-class. But the cigar makers of thie city say that he has something to learn in the metter yet.

Synopsis.

The number of factoriee at present in this city is about one hundred and twenty, employing all the way from two to three hundred men each. Of these about 70 are owned by white men and the balence by Chineee. The number of men employed ie about three thousand, who make one hundred million cigars a year, worth about five milliou dollars. The trade with the Pacific Coast territories and with the East takes from one-third to one-half the total production. The business of cigar mannfacturing is the most flouriehing we have, and of its future development there is practically no limit.

Domestic Economy.

Good Receipts not all that is Needed.

Something more than good receipte are necessary, to make a thorough cook. Be patient and perseveriug, remembering that steady practice and an earneet deeire to succeed are indispensible in tbis department es well as in every separate division of household labor; and, united to theee, you will find that the ability to vary eomewhat the primary directions will often be equally necessary, requiring the good sense and judgment which ehould have been partially, at least, developed and greatly strengthened in those houre spent in study during your girlhood, which you are now so ready to feel were misspent and wasted.

It often happens that eome ingredient will he needed, and you did not discover the want of it until the article to be prepared was too far under way to make easy a change in the bill of fare for that day. To be sure you should not have begun until all all the necessary materials were laid out in order; but, having made the mistake, practice, experience, and a eufficient knowledge of the various articlee that can be substituted and properly combined in place of the missing one, will soon show you how to conquer difficultiee, end teach you how to releese yourself successfully from all such dilemmas.

But in all the new cases that will rise constantly, you will find many things to be taken into consideration,—certaiu general rulee will be understood; and, above all, good common sense and sound judgment must be called into active live to assist in the true application; a quick institutiou to show just where, and how much, it will be safe to very and modify the first directione given.

There are very few receipts that will not be the better for changee, which are often made necessary by the quality of the material you may be obliged to work with: If flour is dry, moist, or runny; if the sugar provee the best refined, or a second-clase; if eggs are fresh, or rather old,—all these points require good judgment, as well as autbenticated receipts. To follow the exact letter of a receipt always, may often iusure a failure. Besides, as in the agricultural and horticulturel world, a seedling may prove more desirable than the parent receipt.

To aesist, as fer as possible, in forming a correct idee of euch modifications as from time to time may be advisable, some general directions are very necessary. We occasionally meet one who from childhood has manifested a gift for household management, and more particularly for all that pertains to the mystery of cookiug, and for whom all rules and directions seem superfluous. Instinct ie apparently the guide, and whatever the band touches the result is euccessful. Yet, ask tbese favored onee for directions for any article which you know in their hands will be all right, and not once in a hundred times can they give you details that will prove at all eatisfactory.

We knew a housekeeper "out West," whose cookiug was never trusted to any hand but her own,—we mean her "company cooking;" "every day doings" were of little coneequence. Under her hand, her bread was alwaye the lightest, yet retaining the sweet, natural taete of the pure wheat perfectly,—never sour, never over or under-baked. Her piee, sweetened and flavored

> "So as not to mix
> Taste not well joined, inelegant, but bring
> Taste after taste, upheld with kindliest change."

Yet, judging from her own remarks, she never gave much heed to any receipts, having only a vague idea of the modes cooks employed; nor do we believe she ever weighed or measured anything, or could give another any distinct direction or idea of her manner of procedure in making the many delightful compounds she so skillfully prepared. No direction given by her could be followed, or any approximation to that which sprang from her magical touch reached.

"Do tell me how you made thet delicious cake."

"Oh I hardly know myself. Never made anything twice alike. I just throw certain things together, and somehow—why—they make themselves, I think. When I begin to make anything, I never have any clear idea of what will be the result,—only I am pretty sure it will be good."

"Why, you have just made this cake, and can't have forgotten! Please tell me exactly how you did it."

"Oh, take a little flour, just a mite of salt two or three eggs; beat them well, you know; throw in a lot of sugar, and a 'right smart chance' of butter, and milk enough to make it about right for stiffness. Dash in any kind of spice you like, and bake—well, eome time—you can always tell when a thing is done, you know easy enough."

Was not that brilliant and lucid explenation sufficient to comfort the heart and strengthen the hands of any young wife already at her "wits' ends" because ehe did not know how to do thiuge and make them good? Goiug to Mre.——, who was "euch a eplendid cook," becauee she thought she must be the beet exponent of the art, she listens, and finds it all "Greek" to her. In deep mortification and discouragement she feels that the coveted lesson has made "that darker which wae dark enough before," and returns to her household cares bewildered and disheartened, imagining herself the most stupid of beings. She never thought that directions about cooking could be so hard to underetand.

These eelf-taught, or rather instintive, cooks and housekeepers are the worst teachere for young folke. They never give an intelligible reaeon why they do thus and so. They do not realize that they give much thought to their work; it comee to them, or, ae tbis lady said, tbings do themeelves. They can no more tell how or why than precioue baby-singers; or wonderful boy-musicians can tell why they catch a tune or touch the right keye on the piano.

Take courage. For awhile you may find "perfecting yourself in all housewifely arte, uphill work," but no more than in your schooldays you fonnd in mastering French and Algebra. Now, ae then, patience and perseverance will win the day, guided by the stroug desire and good sense; and knowledge of any kind gained by one'e own courage and labor is far more precioue, and reliable than that which comee to you without exertion.

We do not like to see young housekeepers feel that if a girl marries and attempts to keep house, all tbe yeare spent in school were wasted, and the knowledge gained can in no mauner be used to aid her in her attempte to uuderstand her uey duties. Everything in your youthful studies that tende to etrengthen the mind, cultivate a correct mode of looking into and forming sound judgment about everything that passes nnder your observation, will come into practical use more iu the "tame commonalities" of the kitchen and cooking department, than in faehionable life or refined society. Practice must teach you many things which you cannot learn in the most elaborate cook hook; but a good solid education will do much toward interpreting all directious, and making your cares aud labore a eource of pleasure and solid enjoyment.—*Mrs. H. W. Beecher.*

Items for House-Keepers.—Do everything in its proper time. Keep everything in its place. Always mend clothes before washing them.

Alum or vinegar is good to set colors of red, green or yellow.

A hot shovel held over varnished furniture will take out white spots.

Ribbous of any kind should he washed in cold soap-suds and not rinsed.

If your flat-irone are rough ruh them with fine salt, and it will make them smooth.

If you are buying a carpet for durability, choose small figures.

Scotch snuff put on the holes where crickets come out will destroy them.

A gallon of strong lye put in a barrel of hard water, will make it as soft as rain water.

Cooking Spinach.—This ie far superior to all other greene. It is also very wholesome. Its quality as a dish, however, depende upon tbe cooking, and this is the way to do it: Having peeled and washed the spinach, put iuto a tin-kettle, without water, or only that which may remain after washing; put this kettle *inside* of another containing water. When tbe spinach is well *stewed*, not boiled, take it up and drain it without pressing ae that will make it tough and dry. Then cbop it smell, and add eome hard boiled eggs also chopped; eeason with pepper and good butter, mix it well, return to the kettle, and etew a quarter of an hour. It ie tben delicious. Some people eat it with oil and it is an excelleut addition.—*Germantown Telegraph.*

Home-Made Candy.—Use a new tin basin; put into it four tableepoone of water, one pound of "coffee A" sugar, one teaepoonful of good cream tartar; boil, stirring constantly to avoid burning. After it begins to have a soapy appeerance try it often by dropping a little cold water, and if done it will at once become brittle. Butter an earthen dish and pour the hot candy into it, that it may cool just enough to handle. Flavor to taste with oil of peppermint, winter-green, sassafrae or lemon. Two drope of oil will flavor it strong. For variety, divide into three or four parts and flavor differently by touching one kind of oil to each. Work in the bande at once; the more it is pulled the whiter it will get.

To Wash Silk.—Half a pint of gin, four oze. of soap, and two ouncee of honey, well shaken. Wet a sponge with this mixture and rub the silk, which should be epread upon the teble. Then waeh it tbrough two watere, in which put two or three spoonfuls of ox gall, which will brighten the colore and prevent their running. Do not wring the silk, but hang it up to dry, and while damp iron it. Tbe lady who furnishes this receipt says ehe has waehed a green eilk dreee by it, and it looks as good as new.

Cleansing the Hair.—The best substance with which to cleanse tbe hair is a teaspoonful or two of common spirits of ammonia in a basin of water. The scalp and hair should be thoroughly washed end rineed and wiped dry. A little glycerine dissolved in alcohol may theu be advantageously applied; all other oils will become stale, and are unfit for snch use. Barbere commonly use carbonate of potash in the water they employ for shampooing; but spirits of ammouia is better.

Pie Crust.—One cup sour cream; 1 cup buttermilk; soda sufficient to neutralize the acid; a little ealt aud flour; roll a little thinner than lard pie crust; it will not be "flaky" but light and delicious to one who hae more regard for health than for mere custom and fancy.

Business Cards.

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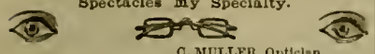
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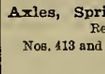
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IMPORTERS OF AND DEALERS IN
ASSAYERS' MATERIALS,
Chemical Apparatus and Chemicals,
Druggists' Glassware and Sundries,
PHOTOGRAPHIC GOODS, ETC.,
512 and 514 Washington street, SAN FRANCISCO.
We would call the special attention of Assayers, Chemists, Mining Companies, Milling Companies, Prospectors, etc., to our large and well adapted stock of
ASSAYERS' MATERIALS
—AND—
Chemical Apparatus,
Having been engaged in furnishing these supplies since the first discovery of mines on the Pacific Coast.
WE ENUMERATE IN PART:
Assay Balances—L. Oertlings, London.
Assay Balances—Becker & Sons, Antwerp.
Chemical Balances—Becker & Sons, Antwerp.
Ore or Pulp Balances—Becker & Sons, Antwerp.
Assay Weights—Grains and Grammes.
Bullion Balances and Weights.
Humid Assay Apparatus.
Iron Furnaces—Improved, Lined with Fire Brick for Cupelling and Melting.
Tongs, Muffles, Cupel Moulds, Assay Moulds, Scorifiers, Roasting Dishes, Annealing Cups, French Clay, Assay Crucibles, Hessian (or Sand) Crucibles.
Dixon's Celebrated Black Lead Crucibles and Covers—all sizes.
Assayers' and Chemical Glassware and Assayers' Hardware—a full assortment.
Steel Stamps for hand cut to order.
ACIDS AND CHEMICALS.
Acid in carboys and bottles, commercially and chemically pure.
Bi Carb. Soda, Borax, Bone Ashes, Litharge.
Assay Lead in bars, rolled and granulated.
Black Oxide Manganese, Sodium and Sodium Amalgam, Sulphate of Copper, Quicksilver, and all Chemicals and Reagents required by Assayers and Milling Co.'s.
☞ Our Gold and Silver Tables, showing the value per ounce Troy at different degrees of fineness, and valuable tables for computation of assays in Grains and Grammes, will be sent upon application.
24v23-tf JOHN TAYLOR & CO.

ALL KINDS OF
Office Desks and Book Cases
On hand and Manufactured to Order, by
JOHNSON & BEST,
No. 311 Pine street, opposite the Pacific Bank,
18v24-6m SAN FRANCISCO.

STATEMENT OF THE MINES IN STOREY COUNTY, AS RETURNED TO THE COUNTY ASSESSOR, FOR THE QUARTER ENDING JUNE 29, 1872, AND VERIFIED UNDER OATH.

MINE.	AMOUNT EXTR'CT'D Tons.	lbs.	Av'r-age per Ton.	Gross Yield or Value.	ACTUAL COST OF Extraction.	Per Ton	Transp'n and Re'n.	Per Ton.	Total Cost.	Net Yield or Profit.	Profit.
Hale & Norcroes	11,014	480	$13.91	$153,218.66	$126,782.75	$11.51	$118,493.39	$10 75	$245,276.14	None.	.....
Kentuck	3,806	....	12.69	49,093.49	30,928.00	8.00	46,392.00	12.00	77,320.00	None.	.....
Savage	13,224	200	17.67	233,690.26	135,110.00	10.21	158,688.60	10.02	293,798.71	None.	.....
Succor	500	....	8.00	4,000.00	.....	8.00	5,000.00	10.00	5,000.00	None.	.....
Yellow Jacket	1,794	....	25.91	46,497.90	82,955.13	46 23	17,940.00	10 00	100 898 13	None.	.....
Belcher	21,932	....	54.85	1203,036.87	276,054.50	12.90	263,184.00	12.00	539,238.50	$664,198.51	$31.07
Woodville	302	....	28.87	8,720.00	1,812.00	6 00	2,424.00	8.95	4,246.00	4,474.00	14 81
Sierra Nevada	4,261	....	6.63	28,257.79	.....	.....	28,253.00	6.16	28,253.00	.....	47
Chollar	11,613	....	18.44	215,289.39	78,484.43	6.71	140,360.00	12 00	218,844.43	None.	.....
Empire (by C. C. Stevenson)	2,580	....	15.80	40,764.00	18,163.70	7.04	26,040.00	10.09	44,203.70	None.	.....
Crowo Point	35,183	....	50.00	1,759,746.51	314,551.82	.....	422,196.00	.....	736,747.82	None.	.....

NOTE.—The gross amount taxed for the quarter, for the Crown Point mine, amounted to $1,882,108.52; total tax derived to county for quarter, $27,321.62. The Caledonia, Silver Hill, Ophir, Bullion, Imperial and Overman have crushed no ore this quarter.

Gold.

The Production of the World.

Mr. Thomson Hanker, writing in the London *Economist*, expresses his opinion that the time has arrived for taking stock of the large increased production of gold in the world. I believed (he says) that during the last ten years the export of gold (exclusive of gold coin) from the Australian colonies has not been less than about 17,000,000 ounces, or equal to £68,000,000, and the gold coin exported from the same colonies would add about £20,000,000, making a total of uot far short of £90,000,000 Nor do I believe it would be disputed that the export from Australian colonies dnring the previous ten years—say from 1853 to 1862--was at least equal to that during the past ten years ending the 31st of December last; if so the total export of gold from the Australian colonies since the first discovery of gold cau not have been much less than £170,000,000 to £180,000,000, and if the export from California during the like period has been only £120,000,000, we have a gross total of not less than £300,000,000 of gold added to the stock of gold in the world siuce 1852–53. I have only reckoned the gold produced in Australia and California; the prodnction of gold iu other parts of the world previous to 1852 was considered, I believe, to be equal to from £3,000,000 to £5,000,000 value anually; if we only reckon it at three millions there will have to be a further addition of £60,000,000, so as to make a grand total of at least £60,000,000, and possibly considerably more to the gold already in the world before the discovery of gold in California and Australia. Now what can have become of all this gold? The use of gold coin in England has considerably increased, but I doubt very much whether the gold coin in circulation elsewhere than in Great Britain or the British colonies and dependencies was materially larger at the beginning of this year than it was in 1853. I have very little doubt but that you have the materials for ascertaining how much gold has been coined at the principal mints of the world during the last twenty years, and if you would give us this information you might be the better able to judge whether it is possible that such a large addition can have been made to the stock of gold in the world during twenty years without having very materially lowered its value, or, in other words, augmentcd the price of all articles which have usually been valued on a gold basis. I believe I am correct in saying that M. de Humboldt considered the quantity of gold which was poured into the European markets in 318 years, from the discovery of Hispaniola to the revolution in Mexico, at somewhat under £300,000,000. Is it possible, remembering the effect produced on prices by this enormous increase in the prodnction of gold during those 300 years, that a great effect must now be experienced by the additional production of an equally large amonnt during so comparatively a short time as tweuty years.

THE principle suggested by Tresca's experiments on the flow of solids has, we are informed, been applied in practice for determining the pressure produced in the bore of large guns. A cylindrical hole, bored into the gun, is filled by a block of lead, supported behind by a steel block, through which is a small cylindrical hole. When pressure acts on the lead, a portion of is is forced into the hole in the steel block. By estimating the volume of the lead found in the cavity after a discharge, a means of measuring the pressure exerted within the gun is given.

GAME PLENTY.—Mr. Isaac Cross, who is an old mountaineer and hunter, has been makiug a cruise out among the Sierra Nevadas. Mr. C. says that the indications of deer are numerous and predicts that that species of game will be nnusually plentiful here this fall and winter.

Leather Market Report.

[Corrected weekly by Dolliver & Bro., No. 109 Post st.]

SAN FRANCISCO, Thursday, August 8, 1872.

SOLE LEATHER.—The Eastern market is higher, and some tanners have advanced their pricee here. We quote as below:

City Tanned Leather, ₱ lb	26@29
Santa Cruz Leather, ₱ lb	26@29
Country Leather, ₱ lb	25@28
Stockton Leather, ₱ lb	26@29

French skins continue firm. All California skins are scarce and bring full prices.

Jodot, 8 Kil., per doz	$80 00@
Jodot, 11 to 19 Kil., per doz	68 00@ 88 00
Jodot, second choice, 11 to 15 Kil. ₱ doz	56 00@ 75 00
Lemoine, 16 to 18 Kil., ₱ doz	75 00@ 77 50
Levin, 12 and 13 Kil., per doz	68 00@ 70 00
Cornellian, 16 to 19 Kil., per doz	63 00@ 65 00
Cornellian, 12 to 14 Kil., per doz	60 00@ 68 00
Ogerau Calf, ₱ doz	54 00@
Simon, 18 Kil., ₱ doz	65 00
Simon, 20 Kil, ₱ doz	68 00
Simon, 24 Kil. ₱ doz	72 00
Robert Calf, 7 and 8 Kil	35 00@ 40 00
French Kips, ₱ lb	1 00@ 1 30
California Kip, ₱ doz	60 00 to 80 00
French Sheep, all colors, ₱ doz	15 00
Eastern Calf for Backs, ₱ lb	1 15@ 1 25
Sheep Roans for Topping, all colors, ₱ doz	9 00@ 13 00
Sheep Roans for Linings, ₱ doz	7 50@ 10 50
California Russett Sheep Linings	1 75@ 5 50
Beet Jodot Calf Boot Legs, ₱ pair	5 25
Good French Calf Boot Legs, ₱ pair	4 50@ 5 00
French Calf Boot Legs, ₱ pair	4 00
Harness Leather, ₱ lb	30@ 37½
Fair Bridle Leather, ₱ doz	48 00@ 72 00
Skirting Leather, ₱ lb	34@ 37½
Welt Leather, ₱ doz	30 00@ 50 00
Buff Leather, ₱ foot	18@ 21
Wax Side Leather, ₱ foot	20@ 22

San Francisco Metal Market.

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, August 8, 1872.

IRON.—			
Scotch Pig Iron, ₱ ton	$65 00	@	— —
White Pig, ₱ ton	50 00	@	55 00
Refined Bar, bad assortment, ₱ lb	— 04½	@	— 5
Refined Bar, good assortment, ₱ lb	— 05	@	— 5½
Boiler, No. 1 to 4	— 05½	@	— —
Plate, No. 5 to 9	— 06½	@	— —
Sheet, No. 10 to 13	— 08½	@	— —
Sheet, No. 14 to 20	— 08½	@	— —
Sheet, No. 24 to 27	— 09½	@	— —
Horse Shoes	8 00	@	
Nail Rod	10		
Norway Iron	8		
Rolled Iron	5		
Other Irone for Blacksmiths, Miners, etc.	5½@		6½
COPPER.—			
Sheathing, ₱ lb	— 40	@	— 45
Sheathing, Yellow	— 28	@	— 30
Sheathing, Old Yellow	— 12	@	— 12½
Composition Nails	— 28		— 30
Composition Bolts	— 28		— 30
TIN PLATES.—			
Platee, Charcoal, IX, ₱ box	18 50	@	— —
Plates, I O Charcoal	16 50		— —
Roofing Plates	15 50		— —
Banca Tin, Slabs, ₱ lb	— 45		— 50
STEEL.—Englieh Cast, ₱ lb	— 15		— 16
Drill	15		16
Flat Bar	17		18
Plough Points	3 75		
Russia (for mould boards)	12½		
QUICKSILVER.—₱ lb	— —		— 85
LEAD.—Pig, ₱ lb	— 05¾		— 06
Sheet	— 10		— —
Pipe	— 9		— 10
Bar	— 06½		— 07
ZINC.—Sheets, ₱ lb	— 11		— 11½
BORAX.—Refined	— 28		— 30
Borax, orude	— 5		— —

A CALL UPON THE PACIFIC RURAL PRESS.—While at San Francisco we availed ourselves of the privilege of dropping in upon our friends of the PACIFIC RURAL PRESS, one of our most welcomed weekly exchanges. The firm of DEWEY & Co. has become a household word throughout the State, from the dignified and valuable character of their publications. These publications aim to meet the varied interests of California, and we are glad to know that they are all helng sustained generously. During our trip through the State we met at nearly every point one or other of their issues.

Besides the RURAL PRESS, they publish the SCIENTIFIC PRESS, which ably serves tho mining and other industrial intereate of the district.

Recently they have added a monthly sixteen-page newspaper of special interest to wholesale and retail tradesmen, called the PACIFIC COAST MERCANTILE DIRECTOR.

In all these enterprises we wish our friends abundant success, and we shall long remember their cordial greeting extended a stray editor sojourning a day or two in their beautiful city.—*Philadelphia Journal of the Farm.*

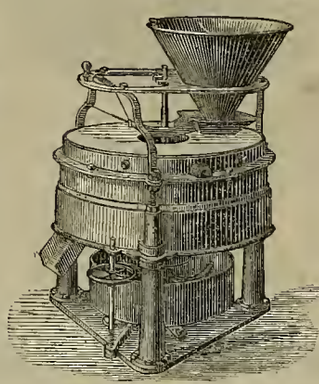
A NEW AMALGAMATOR has been invented by Mr. John Tunbridge of Newark, N. J. The machine consists of a cylindrical receptacle, eight inches in diameter and two feet high, divided within hy several perforated disks of copper. Into this is ponred mercury to the depth of one foot, and into the bottom is introduced 1 ½ inch iron tuhe, which has a vertical height, ontside, of 15 feet. The stream containing the gold, sand and rock debris is let in to the top of this tube, and the pressnre of the column is sufficient to force the water up throngh the mercury, in a fine spray caused by the perforated disks. It is claimed that all the fine gold is amalgamated during the passage From the top of this recepticle the stream passes into and downward through a second chamber, filled with small balls of copper amalgam. It is claimed that the tailings which finally escape contain neither amalgam, floured mercnry, nor free gold.

CALIFORNIA WHEAT FOR COLORADO.—Messrs. Bryant & Cook, of this city, have commission orders to purchase wheat for parties in Denver, Colorado, and will soon send forward a cargo. The superiority of California wheat will increase its market places as fast as its qualities become thoroughly known.

THE city of Cincinnati, Ohio, owns over $15,000,000 worth of real estate, together with the improvements thereon, and has a debt of less $5,000,000. In a financial light this may be said to he a very healthy condition.

OUR LONDON AGENT.—Frederick Brash, 21 South Grove East, Mildmay Park, N. London, England, will act as agent for the PRESS and receive subscriptions and advertisements at our lowest rates.

MILL STONES.



Portable Mills, Eureka Smut Machines

Bran Dustere, Dufour & Co.'a Celebrated Dutch Anchor Bolting Cloths, and General Mill Furnishing.

TRAVIS & WAGNER,

18v24-3m 41 First street, San Francisco.

Blowers, Steam Pumps, Hair Felt. Mining Tools

PORTABLE ENGINES, TURBINE WATER WHEELS, Wood and Iron Labor-Saving Machinery, Hardware, Belting, Lacing, Packing, and a general stock of Engineers', Miners', Farmers' and Mechanics' Tools and Mill Supplies.

TREADWELL & CO.,

At the Old Stand, eow Cor. Market and Fremont Sts., SAN FRANCISCO. 12v24

The Celebrated Physician of St. Louis,

DR. PAYNE,

Is now at hie Private Parlore, 37 and 38 Ruas House, ready to wait on Gentlemen.

LECTURES at Mercantile Library Hall again next week.

THE "LEFFEL"

All sizes, and adapted to from 3 to 500 feet head TURBINE Water Wheels

Parties desiring to economize in water power will find it for their interest to send for a catalogue and price list of the "Leffel." Power pledged equal to any Overshot in the world. Address

TREADWELL & CO., San Francisco.

Who have all sizes on hand. 3v25

C. J. COLLINS,

HATTER,

No. 321 Montgomery street, near California street, under I. O. O. F. Hall.

Masonic, Army and Navy Goods a Specialty

22v24-3m

English and American Hardware!

A Large, Fresh Stock just received. The old friends of the house especially, as well as our later patrons, are invited to send in their orders. We are prepared to fill such satisfactorily and promptly.

TREADWELL & CO.,

3v25-eowhp San Francisco.

Rubber and Oak-Tanned Leather Belting

New Stock, just in; Pawtucket manufacture; standard quality—warranted *the best*. Come and see and get prices, or give it a trial. Sold low by

TREADWELL & CO.,

12v24 Market, cor. Fremont St., San Francisco.

Betts's Capsule Patents.

To prevent infringements, notice is hereby given, that *Betts's name is on every Capsule he makes for the principal merchants in England and France.*

thus enabling vendor, purchaser, and consumer not only to identify the genuineness of the capsule, but likewise the contents of the vessel to which it is applied.

The LORD CHANCELLOR, in his judgment, said that the capsules are not used merely for the purpose of the ornament, but that they are serviceable in protecting the wine from injury, and insuring its genuineness.

MANUFACTORIES:—1, WHARF-ROAD, CITY-ROAD, LONDON, AND BORDEAUX, FRANCE.

Mining and Other Companies.

Owing to the time necessary to mail the present large edition of the M. & S. Press we are obliged to go to press on Thursday evening—which is the very latest hour we can receive advertisements.

Office of Alhambra Hill Mining Company,

San Francisco, July 14th, 1872.

In accordance with a resolntion adopted at a meeting of the Board of Trustees of the Alhambra Hill Mining Company, Pinto Mining District, White Pine County Nevada, hold this day, a special meeting of the stockholders of said Company is hereby called, the same to be held at the office of the Company, 612 Clay street, San Francico, California, on Monday, the 19th day of August, 1872, at four o'clock, P. M., to take into consideration and decide upon the proposition to increase the capital stock of said Company, from five hundred thousand dollars, divided into five thousand shares of the par value of one hundred dollars each, the present capital stock, to five million dollars, divided into fifty thousand shares of one hundred dollars each.

(Signed) ROBT. C. JOHNSON,
E. J. MOORE,
L. JACOBI,
H. G. LANGLEY.

jul20-4t

Corona Consolidated Mining Company—

Location of works, Eureka District, Lander County, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 25th day of June, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Charles Hanson	229	100	$10 00
Charles Hanson	230	100	10 00
Charles Hanson	233	50	5 00
Charles Hanson	234	20	2 00
Charles Haneon	238	50	5 00
Charles Hanson	239	50	5 00
Charles Hanson	240	50	5 00
Charles Hanson	241	50	5 00
Charles Hanson	242	50	5 00
Charles Hanson	272	50	5 00
Charles Hanson	274	50	5 00
Charles Hanson	275	25	2 50
Charles Hanson	276	25	2 50
Charles Hanson	277	25	2 50
J M Foley	151	4000	400 00
D H Hall	324	500	5 00
D H Hall	325	500	50 00
D H Hall	326	500	50 00
D H Hall	327	500	50 00
D H Hall	328	200	20 00
D H Hall	329	200	20 00
D H Hall	330	100	10 00
D H Hall	331	100	10 00
D H Hall	332	100	10 00
D H Hall	333	50	5 00
D H Hall	334	50	5 00
D H Hall	335	50	5 00
D H Hall	336	50	5 00
D H Hall	337	25	2 50
D H Hall	338	25	2 50
D H Hall	339	25	2 50
D H Hall	340	25	2 50
H P Coon, President	150	4000	400 00
H P Coon, Preeident	151	4000	400 00
H P Coon, President	206	3000	300 00
E A Richardson, Trustee	163	200	20 00
E A Richardson, Trustee	154	200	20 00
E A Richardson, Trustee	155	400	40 00
E A Richardson, Trustee	156	500	50 00
E A Richardson, Trustee	157	500	50 00
E A Richardson, Trustee	169	500	50 00
E A Richardson, Trustee	170	500	50 00
E A Richardson, Trustee	171	500	50 00
E A Richardson, Trustee	172	500	50 00
E A Richardson, Trustee	173	200	20 00
E A Richardson, Trustee	175	200	20 00
E A Richardson, Trustee	177	200	20 00
E A Richardson, Trustee	179	100	10 00
E A Richardson, Trustee	180	100	10 00
E A Richardson, Trustee	181	100	10 00
E A Richardson, Trustee	182	100	10 00
E A Richardeon, Trustee	183	50	5 00
E A Richardson, Trustee	184	50	5 00
E A Richardson, Trustee	185	50	5 00
E A Richardson, Trustee	186	50	5 00
E A Richardson, Trustee	187	50	5 00
E A Richardson, Trustee	188	250	25 00
E A Richardson, Trustee	190	50	5 00
E A Richardson, Trustee	191	50	5 00
E A Richardson, Trustee	192	50	5 00
E A Richardson, Trustee	193	50	5 00
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E A Richardson, Trustee	196	50	5 00
E A Richardson, Trustee	197	50	5 00
E A Richardeon, Trustee	198	100	10 00
E A Richardson, Trustee	199	100	10 00
E A Richardson, Trustee	200	100	10 00
E A Richardson, Trustee	201	100	10 00
E A Richardson, Trustee	202	100	10 00
E A Richardson, Trustee	203	20	2 00
E A Richardson, Trustee	204	20	2 00
E A Richardson, Trustee	210	1000	100 00
E A Richardson, Trustee	211	500	50 00
E A Richardson, Trustee	212	500	50 00
E A Richardson, Trustee	213	250	25 00
E A Richardson, Trustee	214	250	25 00
E A Richardson, Trustee	215	100	10 00
E A Richardson, Trustee	216	100	10 00
E A Richardson, Trustee	217	100	10 00
E A Richardson, Trustee	218	100	10 00
E A Richardson, Trustee	219	100	10 00
E A Richardson, Trustee	220	100	10 00
E A Richardson, Trustee	221	50	5 00
E A Richardson, Trustee	222	50	5 00
E A Richardson, Trustee	223	50	5 00
E A Richardson, Trustee	224	50	5 00
E A Richardson, Trustee	225	50	5 00
E A Richardson, Trustee	226	50	5 00
E A Richardson, Trustee	268	25	2 50
E A Richardson, Trustee	269	25	2 50
E A Richardson, Trustee	270	25	2 50
E A Richardson, Trustee	271	25	2 50
W H Adams	205	10	1 00
W H Adams	267	20	2 00
L S Adams	207	200	20 00
H Dutton	208	200	20 00
C J Collins	227	100	10 00
C J Collins	311	1000	100 00
C J Collins	314	250	25 00
C J Collins	315	250	25 00
C J Colline	317	150	15 00
C J Collins	318	100	10 00
C J Collins	319	100	10 00
C J Collins	320	100	10 00
C J Collins	343	25	2 50
C J Collins	344	10	1 00
C J Collins	345	5	50
C J Collins	346	5	50
C J Collins	347	5	50
H A Cheever	244	500	50 00
H A Cheever	245	500	50 00
H A Cheever	246	500	50 00
H A Cheever	247	200	20 00
H A Cheever	248	200	20 00
H A Cheever	250	200	20 00
H A Cheever	251	200	20 00
H A Cheever	252	100	10 00
H A Cheever	253	100	10 00
H A Cheever	254	100	10 00
H A Cheever	255	100	10 00
H A Cheever	256	100	10 00
H A Cheever	257	50	5 00

Names.	No. Certificate.	No. Shares.	Amount.
H A Cheever	258	50	5 00
H A Cheever	259	50	5 00
H A Cheever	260	50	5 00
H A Cheever	261	50	5 00
H A Cheever	262	50	5 00
H A Cheever	263	50	5 00
H A Cheever	264	55	5 00
H A Cheever	265	50	5 00
H A Cheever	266	50	5 00
J Clem Uhler, Trustee	279	500	50 00
J Clem Uhler, Trustee	280	500	50 00
J Clem Uhler, Trustee	281	250	25 00
J Clem Uhler, Trustee	282	250	25 00
J Clem Uhler, Trustee	283	250	25 00
J Clem Uhler, Trustee	284	250	25 00
J Clem Uhler, Trustee	285	100	10 00
J Clem Uhler, Trustee	286	100	10 00
J Clem Uhler, Trustee	287	100	10 00
J Clem Uhler, Trustee	288	100	10 00
J Clem Uhler, Trustee	289	100	10 00
J Clem Uhler, Trustee	290	100	10 00
J Clem Uhler, Trustee	291	100	10 00
J Clem Uhler, Trustee	292	100	10 00
J Clem Uhler, Trustee	293	100	10 00
J Clem Uhler, Trustee	294	100	10 00
J Clem Uhler, Trustee	295	100	10 00
J Clem Uhler, Trustee	296	100	10 00
J Clem Uhler, Trustee	297	100	10 00
J Clem Uhler, Trustee	298	100	10 00
J Clem Uhler, Trustee	299	100	10 00
J Clem Uhler, Trustee	300	100	10 00
J Clem Uhler, Trustee	301	100	10 00
J Clem Uhler, Trustee	302	100	10 00
J Clem Uhler, Trustee	303	200	20 00
J Clem Uhler, Trustee	305	100	10 00
J Clem Uhler, Trustee	306	20	2 00
J Clem Uhler, Trustee	307	20	2 00
J Clem Uhler, Trustee	308	20	2 00
J Clem Uhler, Trustee	309	20	2 00
J Clem Uhler, Trustee	310	20	2 00
P H Sullivan	304	25	2 50
T F Cronise, Trustee	323	1000	100 00
J Cassell, Trustee	341	100	10 00
J Cassell, Trustee	342	100	10 00
W J Ranken	350	100	10 00
W J Ranken	351	100	10 00
W J Ranken	352	100	10 00
W J Ranken	353	100	10 00
Aunsa Clark	349	100	10 00
H P Coon	168	2000	200 00

And in accordance with law, and an order of the Board of Trustees, made on the 25th day of June, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction at the office of the Company, 409 California street, San Francisco, Cal., on the 22d day of August, 1872, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

T. F. CRONISE, Secretary.

Office, 409 California street, San Francisco, California.

Caution.—Eagle Quicksilver Mining Company

—Location of works, Eagle Mining District, Santa Barbara County, California.

Notice is hereby given to the public not to purchase or negotiate for the following named shares, designated by the names of the delinquent owners in the Eagle Quicksilver Mining Company, as, by law, and the articles of agreement made and provided, they were duly advertised and sold in full at public auction, by John Middleton & Son, auctioneers, on Monday, the 22d day of July, 1872, for delinquent assessment thereon, and accruing costs of advertising and expenses of sale, and will not be transferred by said company:

	SHARES SOLD.	AMOUNT.
Bush, A. T.	1	$40 00
Burton, L. T.	1	40 00
Burton, Benj	1	40 00
Brinkerhoff, S. B.	2	80 00
Church, Thos. R.	1	40 00
Crane, A. M.	1	40 00
Fernald, Chas	1	40 00
Kyle, J. J.	2	80 00
Pioche, F. L. A.	2	80 00
Richards, Jarret T.	1	40 00

WM. H. WATSON, Secretary

Of the Eagle Quicksilver Mining Company, Room 5, No. 302 Montgomery street, San Francisco, California.

July 27th, 1872. jly27-3t

Hudson Gold Mining Company—Location

of works, Cherokee Mining District, Plumas county, State of California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment (No. 1) levied on the Eighteenth (18th) day of June, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Fassett, H H	9	100	$10 00
Hansen, Geo	36	100	10 00
Ives, G I	7	100	10 00
Kenney, Chas A, Trustee	27	275	27 50
McClellan, H H	14	500	50 00
McClellan, H H	28	500	50 00
McClellan, H H	30	100	10 00
McClellan, H H	32	100	10 00
Mack, Julius	39	100	10 00
Olmsted, S C	40	375	37 50
Olmsted, S C	42	800	80 00
Rowe, Robert	35	250	25 00
Reckleffsen, J Gregory	38	100	10 00
Uhler, J Clem, Trustee	26	200	20 00
Warner, Chas H	34	250	25 50

And in accordance with law and an order of the Board of Trustees, made on the eighteenth (18th) day of June, A. D., 1872, so many shares of each parcel of said stock as may be necessary will be sold at the office of the Company, No. 411 California street, San Francisco, California, on Saturday, the seventeenth (17th) day of August, A. D. 1872, at the hour of one (1) o'clock P. M., of said day, to pay said delinquent assessments thereon, together with costs of advertising and expenses of sale.

JOS. L. KING, Secretary.

Office, 411 California street, San Francisco, Cal.

NOTICE.—At a meeting of the Board of Trustees, held on the twenty-seventh (27) day of July, A. D., 1872, the above sale was postponed till Saturday, the twenty-fourth (24) day of August, A. D., 1872, at the hour of one o'clock P. M. of said day. JOS. L. KING, Secretary,

San Francisco, July 27th, 1872. su3-3t

Morning Star Gold and Silver Mining

Company—Location of works, Great Mogul District, Alpine County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 12th day of July, 1872, an assessment of One Dollar per share was levied upon the capital stock of said company, payable immediately in United States gold and silver coin, to the Secretary, at the office of the Company, Room No. 43, New Merchants' Exchange, (3rd floor,) California street, in the City and County of San Francisco, State of California. Any stock upon which said assessment shall remain unpaid on the 20th day of August, A. D., 1872, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Saturday, the 14th day of September, A. D., 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. H. BOGART, Secretary.

Office, Room No. 43, Merchants' Exchange, California street, San Francisco. jul20-4t

Kincaid Flat Mining Company—Location

of Works, Tuolumne County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 17th day of July, 1872, an assessment of Three Dollars per share was levied upon the capital stock of said company, payable immediately, in United States gold coin, to the Secretary, at his office, No. 220 Clay street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 23d day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Saturday, the 14th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. B. CORNELL, Secretary.

Office, 220 Clay street, San Francisco. jul20-4t

Louise Silver Mining Company—Location

of works, Pioche, Ely Mining District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 3d day of July, 1872, an assessment of ten cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, room 5, No. 302 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Saturday, the 10th day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 7th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees. WM. H. WATSON, Secretary.

Office, room 5, No. 302 Montgomery street, San Francisco. jul6.

Marcelina Silver Mining Company—Location of works, Eureka Mining District, Lander County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 24th day of July, 1872, an assessment of Thirty (30) Cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, 419 California street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 9th day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 30th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees. CHAS. E. ELLIOT, Secretary.

Office, 419 California street, San Francisco, Cal.

Mina Rica Mining Company—Location of works, Auburn Mining District, Placer county, State of Nevada.

Notice is hereby given that at a meeting of the Trustees of said Company, held on the 6th day of August, 1872, an assessment (No. 7) of Twenty (20) cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, 320 California street, Room 5, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 10th day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on the 30th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees. GEO. R. SPINNEY Secretary.

Office, No. 320 California street, Room No. 5, San Francisco, Cal. Aug10-4t

Mount Jefferson Milling and Mining Company.—Location of works, First Garotte, Tuolumne county, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 25th day of July, A. D., 1872, an assessment of Ten Cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary, at the office of said Company. Any stock upon which said assessment shall remain unpaid on Monday, the 25th day of August, A. D., 1872, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Monday, the 16th day of September, A. D., 1872, at the hour of 2 o'clock, P. M., at the office of the Company, to pay the delinquent assessment together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. W. CLARK, Secretary.

Office, 418 California street, Room No. 2. aug3-4w

Nevada Land and Mining Company—Locations, Spruce Mountain, Clifton, and Antelope Mining Districts, Elko County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 18th day of July, 1872, an assessment of Eight Cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office. Any stock upon which said assessment shall remain unpaid on Saturday, the 31st day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the 19th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees. WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery street, San Francisco, California. jul20-4t

Norman Gold Mining Company---Location of works, Aqueduct Mining District, Amador County, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 27th day of June, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Eldridge, G C	17	100	$5 00
Eldridge, G C	18	100	5 00
Hosmer, D M, Trustee	43	300	15 00
Hosmer, D M, Trustee	44	500	25 00
Hallet, G. H.	19	100	5 00
Humphreys, W. F.	26	100	5 00
Humphreys, W. F.	27	100	5 00
Bynomann, S.	55	100	5 00
Levingston, J.	7	100	5 00
Owens, Thurston C, Trus.	155	500	25 00
Owens, Thurston C, Trus.	156	500	25 00
Plummer, M D, Trustee	2	500	25 00
Plummer, M D, Trustee	34	300	15 00
Plummer, M D, Trustee	33	80	4 00
Plummer, M D, Trustee	153	100	5 00
Sheppard, J.	54	100	5 00
Stewart, G W.	66	200	10 00
Sewall, G, Trustee	131	100	5 00
Sewall, G, Trustee	132	400	20 00
Thompsem, J M, Trustee	14	500	25 00
Thompson, J M, Trustee	49	500	25 00
Thompson, J M, Trustee	50	300	15 00
Thompson, J M, Trustee	107	3000	150 00
Thompson, J M, Trustee	109	200	10 00
Thompson, J M, Trustee	111	75	3 75
Tecwilliger, N B	16	100	5 00
Wayman, W G	21	500	25 00
Wayman, W G	22	300	15 00
Waymsn, W G	47	300	15 00
Wade, Rufus	24	100	5 00
Watson, Wm H, Trustee	63	1167	68 35
Watson, Wm H, Trustee	64	1000	50 00
Watson, Wm H, Trustee	67	100	5 00
Watson, Wm H, Trustee	68	100	5 00
Watson, Wm H, Trustee	69	100	5 00
Watson, Wm H, Trustee	70	100	5 00
Watson, Wm H, Trustee	71	100	5 00
Watson, Wm H, Trustee	72	100	5 00
Watson, Wm H, Trustee	73	100	5 00
Watson, Wm H, Trustee	74	100	5 00
Watson, Wm H, Trustee	75	100	5 00
Watson, Wm H, Trustee	76	100	5 00
Watson, Wm H, Trustee	77	50	2 50
Watson, Wm H, Trustee	78	50	2 50
Watson, Wm H, Trustee	79	50	2 50
Watson, Wm H, Trustee	80	50	2 50
Watson, Wm H, Trustee	81	50	2 50
Watson, Wm H, Trustee	82	50	2 50
Watson, Wm H, Trustee	83	50	2 50
Watson, Wm H, Trustee	84	50	2 50
Watson, Wm H, Trustee	86	50	2 50
Watson, Wm H, Trustee	87	20	1 00
Watson, Wm H, Trustee	88	20	1 00
Watson, Wm H, Trustee	89	20	1 00
Watson, Wm H, Trustee	90	20	1 00
Watson, Wm H, Trustee	91	20	1 00
Watson, Wm H, Trustee	92	20	1 00
Watson, Wm H, Trustee	93	20	1 00
Watson, Wm H, Trustee	96	20	1 00
Watson, Wm H, Trustee	97	30	1 50
Watson, Wm H, Trustee	98	30	1 50
Watson, Wm H, Trustee	99	30	1 50
Watson, Wm H, Trustee	100	30	1 50
Watson, Wm H, Trustee	101	30	1 50
Watson, Wm H, Trustee	102	30	1 50
Watson, Wm H, Trustee	103	30	1 50
Watson, Wm H, Trustee	104	30	1 50
Watson, Wm H, Trustee	105	30	1 50
Watson, Wm H, Trustee	106	30	1 50
Watson, Wm H, Trustee	108	666	33 30
Watson, Wm H, Trustee	130	100	5 00
Wurkheim, M	110	25	1 25

And in accordance with law, and an order of the Board of Trustees, made on the 27th day of June, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, Room 5, No. 302 Montgomery street, San Francisco, Cal., on Thursday, the 22d day of August, 1872, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

WM. H. WATSON, Secretary.

Office—Room 5, No. 302 Montgomery street, San Francisco. nu3-3t

Piermont Milling and Mining Company—Location of works, Piermont Mining District, White Pine County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 10th day of July, A. D., 1872, an assessment of Sixty Cents per share was levied upon the capital stock of said company, payable immediately, in United States gold coin, to the Secretary, at the office of said Company, Room No. 2, 418 California street, San Francisco. Any stock upon which said assessment shall remain unpaid on Monday, the 12th day of August, A. D., 1872, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Tuesday, the 10th day of September, A. D., 1872, at the office of the Company, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

jul20-4t J. W. CLARK, Secretary.

Spring Mountain Tunnel Company—Location of works, Lincoln County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 9th day of July, 1872, an assessment of thirty cents (30) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary. Any stock upon which said assessment shall remain unpaid on the 16th day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 7th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.

Office, Room 37, third floor, New Merchants' Exchange, California street, San Francisco, California. july 13

William Penn Consolidated Gold and Silver Mining Company—Location of works, Devil's Gate District, Storey County, State of Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment (No. 2) levied on the third day of July, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Thomas Finn	Unissued.	630	$63 00
D Murphy	Unissued.	40	4 00
H Toomy	Unissued.	1700	170 00
Thos McNamarra	Unissued.	600	60 00
H F Cutter	Unissued.	1060	106 00
B M Hertshorno	Unissued.	600	60 00
John Hewston, Jr.	Unissued.	250	25 00
Chas Minturn	Unissued.	500	50 00

And in accordance with law, and an order of the Board of Trustees, made on the third day of July, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, No. 6 Montgomery street, San Francisco, California, on Monday, the 2d day of September, at the hour of 12 M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expense of sale.

JNO. F. POPE, Secretary.

Office, No. 6 Montgomery street, San Francisco, California. sug10-4t.

Winnemucca Chief Silver Mining Company—Location of Works, Humboldt County, State of Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 19th day of June, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
John Robins	159	100	$15 00
John Robins	160	100	15 00
John Robins	161	100	15 00
John Robins	162	100	15 00
John Robins	163	100	15 00
John Robins	164	100	15 00
John Robins	165	100	15 00
John Robins	166	100	15 00
John Robins	167	100	15 00
John Robins	168	100	15 00
John Robins	176	100	15 00
John Robins	177	100	15 00
John Robins	178	100	15 00
John Robins	179	50	7 50
John Robins	209	500	75 00
John Robins, Trustee	9	500	75 00
John Robins, Trustee	19	500	75 00
John Robins, Trustee	20	500	75 00
John Robins, Trustee	21	100	15 00
John Robins, Trustee	22	100	15 00
John Robins, Trustee	23	100	15 00
John Robins, Trustee	24	100	15 00
John Robins, Trustee	25	50	7 50
John Robins, Trustee	26	50	7 50
John Robins, Trustee	27	50	7 50
T F Cronise, Trustee	111	500	75 00
T F Cronise, Trustee	112	500	75 00
T F Cronise, Trustee	113	200	30 00
T F Cronise, Trustee	114	200	30 00
T F Cronise, Trustee	115	200	30 00
T F Cronise, Trustee	116	200	30 00
T F Cronise, Trustee	117	200	30 00
T F Cronise, Trustee	118	100	15 00
T F Cronise, Trustee	119	100	15 00
T F Cronise, Trustee	120	100	15 00
T F Cronise, Trustee	121	100	15 00
T F Cronise, Trustee	122	100	15 00
T F Cronise, Trustee	123	100	15 00
T F Cronise, Trustee	124	100	15 00
T F Cronise, Trustee	125	100	15 00
T F Cronise, Trustee	126	100	15 00
T F Cronise, Trustee	127	100	15 00
T F Cronise, Trustee	128	100	15 00
T F Cronise, Trustee	129	100	15 00
T F Cronise, Trustee	130	100	15 00
T F Cronise, Trustee	131	100	15 00
T F Cronise, Trustee	132	100	15 00
T F Cronise, Trustee	133	100	15 00
T F Cronise, Trustee	134	100	15 00
T F Cronise, Trustee	135	100	15 00
T F Cronise, Trustee	136	100	15 00
T F Cronise, Trustee	137	100	15 00
T F Cronise, Trustee	138	50	7 50
T F Cronise, Trustee	139	50	7 50
T F Cronise, Trustee	140	50	7 50
T F Cronise, Trustee	141	50	7 50
T F Cronise, Trustee	142	50	7 50
T F Cronise, Trustee	143	50	7 50
T F Cronise, Trustee	144	50	7 50
T F Cronise, Trustee	145	50	7 50
T F Cronise, Trustee	146	50	7 50
T F Cronise, Trustee	147	50	7 50
T F Cronise, Trustee	148	50	7 50
T F Cronise, Trustee	149	50	7 50
T F Cronise, Trustee	150	50	7 50
T F Cronise, Trustee	151	50	7 50
T F Cronise, Trustee	152	50	7 50
T F Cronise, Trustee	153	50	7 50
T F Cronise, Trustee	154	50	7 50
T F Cronise, Trustee	155	50	7 50
T F Cronise, Trustee	156	50	7 50
T F Cronise, Trustee	157	50	7 50
T F Cronise, Trustee	172	100	15 00
T F Cronise, Trustee	173	100	15 00
A C Peachy	52	3000	450 00
A C Peachy	53	1000	150 00
J H Crossman	74	200	30 00
J D Minor	11	100	15 00
M S Thompson	12	100	15 00
J J Lynn	13	100	15 00
C W Carter	14	100	15 00
M S Bonnifield	16	50	7 50
M S Bonnifield	17	50	7 50
T J Poulterer, Trustee	28	500	75 00
T J Poulterer, Trustee	29	500	75 00
T J Poulterer, Trustee	30	500	75 00
T J Poulterer, Trustee	32	500	75 00
T J Poulterer, Trustee	33	500	75 00
T J Poulterer, Trustee	34	500	75 00
T J Poulterer, Trustee	35	500	75 00
T J Poulterer, Trustee	36	500	75 00
T J Poulterer, Trustee	37	500	75 00
T J Poulterer, Trustee	38	500	75 00
T J Poulterer, Trustee	39	500	75 00
T J Poulterer, Trustee	40	500	75 00
T J Poulterer, Trustee	41	500	75 00
T J Poulterer, Trustee	42	500	75 00
T J Poulterer, Trustee	43	500	75 00
T J Poulterer, Trustee	44	500	75 00
T J Poulterer, Trustee	46	500	75 00
T J Poulterer, Trustee	47	500	75 00
T J Poulterer, Trustee	48	500	75 00
T J Poulterer, Trustee	49	500	75 00
T J Poulterer, Trustee	50	500	75 00
T J Poulterer, Trustee	51	500	75 00
T J Poulterer, Trustee	75	500	75 00
T J Poulterer, Trustee	76	200	30 00
T J Poulterer, Trustee	77	200	30 00
T J Poulterer, Trustee	78	100	15 00
T J Poulterer, Trustee	79	100	15 00
T J Poulterer, Trustee	80	100	15 00
T J Poulterer, Trustee	81	100	15 00
T J Poulterer, Trustee	82	100	15 00
T J Poulterer, Trustee	83	100	15 00
T J Poulterer, Trustee	84	50	7 50
T J Poulterer, Trustee	85	50	7 50
T J Poulterer, Trustee	87	50	7 50
T J Poulterer, Trustee	88	50	7 50
T J Poulterer, Trustee	89	50	7 50
T J Poulterer, Trustee	91	50	7 50
T J Poulterer, Trustee	93	35	5 25
T J Poulterer, Trustee	95	25	3 75
T J Poulterer, Trustee	96	25	3 75
T J Poulterer, Trustee	109	25	3 75
T J Poulterer, Trustee	110	25	3 75
T J Poulterer, Trustee	169	100	15 00
T J Poulterer, Trustee	170	100	15 00
T J Poulterer, Trustee	171	100	15 00
J Clem Uhler, Trustee	54	500	75 00
J Clem Uhler, Trustee	56	500	75 00
J Clem Uhler, Trustee	57	500	75 00
J Clem Uhler, Trustee	58	500	75 00
J Clem Uhler, Trustee	59	200	30 00
J Clem Uhler, Trustee	60	100	15 00
J Clem Uhler, Trustee	61	100	15 00
J Clem Uhler, Trustee	62	100	15 00
J Clem Uhler, Trustee	63	100	15 00
J Clem Uhler, Trustee	64	100	15 00
J Clem Uhler, Trustee	65	100	15 00
J Clem Uhler, Trustee	66	100	15 00
J Clem Uhler, Trustee	67	100	15 00
J Clem Uhler, Trustee	68	50	7 50
J Clem Uhler, Trustee	69	50	7 50
J Clem Uhler, Trustee	70	50	7 50
J Clem Uhler, Trustee	71	50	7 50
J Clem Uhler, Trustee	72	50	7 50
J Clem Uhler, Trustee	73	50	7 50
J Clem Uhler, Trustee	180	500	75 00
J Clem Uhler, Trustee	181	500	75 00
J Clem Uhler, Trustee	182	500	75 00
J Clem Uhler, Trustee	183	500	75 00
J Clem Uhler, Trustee	184	100	15 00
J Clem Uhler, Trustee	185	100	15 00
J Clem Uhler, Trustee	186	100	15 00
J Clem Uhler, Trustee	187	100	15 00
J Clem Uhler, Trustee	188	100	15 00
J Clem Uhler, Trustee	189	100	15 00
J Clem Uhler, Trustee	190	100	15 00
J Clem Uhler, Trustee	191	100	15 00
J Clem Uhler, Trustee	192	100	15 00
J Clem Uhler, Trustee	193	100	15 00
J Clem Uhler, Trustee	194	100	15 00
J Clem Uhler, Trustee	195	100	15 00
J Clem Uhler, Trustee	196	100	15 00
J Clem Uhler, Trustee	197	100	15 00
J Clem Uhler, Trustee	198	100	15 00
J Clem Uhler, Trustee	199	50	7 50
J Clem Uhler, Trustee	200	50	7 50
J Clem Uhler, Trustee	201	50	7 50
J Clem Uhler, Trustee	202	50	7 50
J Clem Uhler, Trustee	203	50	7 50
J Clem Uhler, Trustee	204	50	7 50
J Clem Uhler, Trustee	205	50	7 50
J Clem Uhler, Trustee	206	50	7 50
J Clem Uhler, Trustee	207	50	7 50
J Clem Uhler, Trustee	208	50	7 50
L L Robinson	210	500	75 00

And in accordance with law, and an order of the Board of Trustees, made on the 19th day of June, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, No. 409 California street, San Francisco, California, on the 20th day of August, 1872, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

T. F. CRONISE, Secretary.

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Rolling Mill Company,

SAN FRANCISCO, CAL.

Established for the Manufacture of

RAILROAD AND OTHER IRON

—AND—

Every Variety of Shafting,

Embracing ALL SIZES of

Steamboat Shafts, Cranks, Piston and Connecting Rods, Car and Locomotive Axles and Frames

—ALSO—

HAMMERED IRON

Of every description and size.

☞ Orders addressed to PACIFIC ROLLING MILL COMPANY, Post Office, San Francisco, Cal., will receive prompt attention

☞ The highest price paid for Scrap Iron 9v143

San Francisco Boiler Works, 123 and 125 Beale Street, San Francisco.

F. I. CURRY (late Foreman of the Vulcan Iron Works), Proprietor.

High and Low Pressure

BOILERS

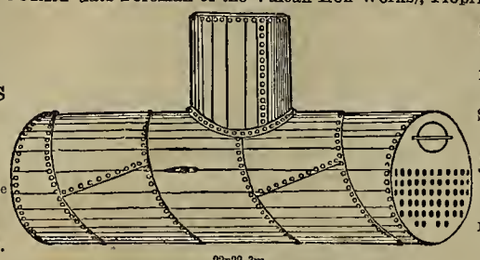
of all descriptions.

SOLE

Manufacturers of the

CELEBRATED

SPIRAL BOILER.



22v22-3m

Sheet Iron Work of every DESCRIPTION done at the Shortest Notice.

All kinds of

JOBBING

and

Repairing

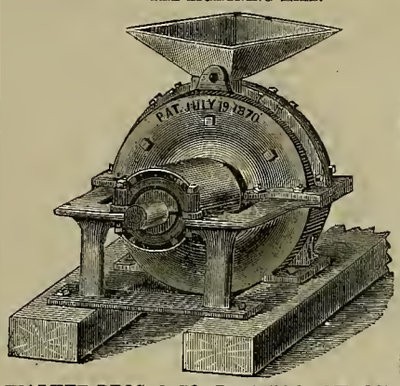
Promptly Attended to.

CAMERON'S
MINING STEAM PUMPS.

DAVID STODDART,

114 Beale Street, - - - - - - - - - SAN FRANCISCO.

THE LIGHTNING MILL.



THE

LIGHTNING MILL,

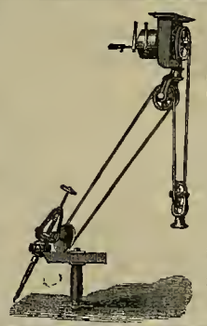
For Pulverizing Quartz, "Charleston Rock," and all Native Phosphates, Flint, Feldspar, Iron Ore, Manganese, Antimony, Carbon, Corundum, Old Crucibles, Barytes, Brimstone, Slate, Soapstone, Graphite, Glass, Marble, Plaster, Antbracite and Bituminous Coals, etc.

WM. STEWART'S

Patent Bone Mills and Crushers.

For Grinding Bones, Rock, Quartz, and all hard substances; also, Corn, Wheat, Oats, Barley, Coffee, Spices, etc.

WALKER BROS. & CO., Twenty-third and Wood Streets, Philadelphia, Sole Manufacturers of Stewart's Celebrated Patent Bone Mills and Crushers, A. W. Straub & Co.'s Patent Revolution French Burr Mill and A. Duval's Patent Centrifugal Pumps.



PORTABLE

DRILLING MACHINES,

THORNE & DE HAVEN,

Twenty-third and Cherry Streets, Philadelphia.

These machines can he placed with as much facility as a ratchet brace, and can be used in any position, at any distance, and in any direction from the power.

The No. 1 is capable of drilling up to 1¼ inches in diameter; the No. 2 up to 1¾ inches; and the No. 3 up to 2¼ inches; and boring up to 4 inches.

Send for Circulars and Photographs.

2v25-3m

OCCIDENTAL FOUNDRY,

137 and 139 First st., near the Gas Works, San Francisco.

STEIGER & BOLAND,

IRON FOUNDERS.

IRON CASTINGS of all descriptions at short notice.

NOTICE.—Particular attention paid to the making of Superior Shoes and Dies. 3v24-3m

CALIFORNIA BRASS FOUNDRY,

No. 125 First street, opposite Minna,

SAN FRANCISCO.

ALL KINDS of Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch

☞ PRICES MODERATE. ☜

J. H. WEED. V. KINGWELL.

THOMPSON BROTHERS,
EUREKA FOUNDRY,

129 and 131 Beale street, between Mission and Howard, San Francisco.

LIGHT AND HEAVY CASTINGS,

of every description, manufactured 24v16qr

SAN FRANCISCO

SCREW BOLT WORKS,

PHELPS BROTHERS, Proprietors,

MANUFACTURERS OF ALL KINDS OF

Machine Bolts, Bridge Bolts, and Ship or Band Bolts.

13 and 15 Drumm Street, San Francisco. 4v24ly

H. J. BOOTH & CO.,
UNION IRON WORKS,

(The Oldest and most Extensive Foundry on the Pacific Coast).

Cor. First and Mission Sts.,

SAN FRANCISCO.

Marina, Locomotive and Stationary Engines Quartz Crushing and Amalgamating Machines, Mill Irons and Brass and Iron Castings, of every description, made to order.

Steamboat Repairing, Boiler Making, Turning and Finishing,

EXECUTED WITH DISPATCH.

Beet Sugar Machinery complete in every part—made a specialty.

OIL MACHINERY.

A complete set of Machinery of our own design and patent for extracting oil from Castor Bean, dispensing with Hair Cloth. Also Machinery for Flax Seed Oil, Mustard Seed Oil, and Sun Flower Seed Oil.

MARBLE MACHINERY

For sawing Marble of any thickness or size.

Irrigating Pumps. Steam Pumps.

Plans, Estimates, and Advice promptly supplied.

H. J. BOOTH. GEO. W. PRESCOTT. IRVING M. SCOTT

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Miners' Foundry and Machine Works,

CO-OPERATIVE,

First Street, bet. Howard and Folsom, SAN FRANCISCO.

Machinary and Castings of all kinds.

GEO. W. PRESCOTT. C. W. SCHEIDEL. W. R. ECKART.

PRESCOTT, SCHEIDELL & CO.,
MARYSVILLE FOUNDRY.

Corner of B and Fourth streets, Marysville, Cal.

MANUFACTURERS OF

STEAM ENGINES,

STATIONARY AND PORTABLE

SAW AND GRIST MILLS,

Hydraulic Machinery,

Quartz Crushing and Amalgamating Machinery

Of every description, constantly on hand.

Plans and estimates furnished upon application. Repairs upon all kinds of Machinery promptly made, and at moderate charges.

Having unrivalled facilities, we are prepared to make to order, at short notice, anything required in our line.

Specimens of our work may be seen in all the mining regions on this coast.

THE RISDON
Iron and Locomotive Works.

INCORPORATED.....APRIL 30, 1868.
CAPITAL.....$1,000,000.

LOCATION OF WORKS:
Corner of Beale and Howard Streets,
SAN FRANCISCO.

Manufacturers of Steam Engines, Quartz and Flour Mill Machinery, Steam Boilers (Marine, Locomotive and Stationary), Marine Engines (High and Low Pressure). All kinds of light and heavy Castings at lowest prices. Cams and Tappets, with chilled faces, guaranteed 40 per cent. more durable than ordinary iron.

Directors:

Wm. Alvord, C. J. Brenham, O. E. McLane,
Wm. Norris, Wm. H. Taylor, Lloyd Tevis,
James D. Walker.

WM. H. TAYLOR.....President.
C. E. McLANE.....Vice President.
JOSEPH MOORE.....Superintendent.
LEWIS R. MEAD.....Secretary.

24v17-oy

OSCAR LEWIS. S. S. MORRILL.

CITY IRON WORKS,

28 Fremont street.....SAN FRANCISCO.

LEWIS & MORRILL,

Manufacturers of all kinds of Architectural and Ornamental Iron Work,

LAUNDRY MACHINERY, STEAM ENGINES, ETC.

Agricultural Work and all kinds of Blacksmithing and Jobbing done with promptness and at reasonable prices. Orders from the country promptly executed.

22v24-3m

Machinerv.

Varney's Patent Amalgamator.

These Machines Stand Unrivaled.

For rapidity pulverizing and amalgamating ores, they have no equal. No effort has been, or will be spared, to have them constructed in the most perfect manner and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces.—Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Setlers made on the same principle excel all others They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill-men are invited to examine these pans and setlers for themselves, at the office, 229 Fremont Street, San Francisco.

FOR SALE.
A 10-STAMP QUARTZ MILL,

Known as the Montszuma Mill, in Montszuma District, Nya County, Nevada.

All in running order, with Pans, Belting, Furnaces, etc. In a good locality for custom work. The mill can remain or be removed.

THIS PROPERTY CAN BE BOUGHT AT

A LOW FIGURE.

Inquire of **R. T. VAN NORDEN,**

607 Montgomery street, San Francisco.

24v24-tf

IMPORTANT TO MINERS AND MILL MEN.

Silver-Plated Copper Amalgamating Plates, for Saving Gold.

Of all sizes and in any quantity, furnished to order. Full instructions sent for operating.

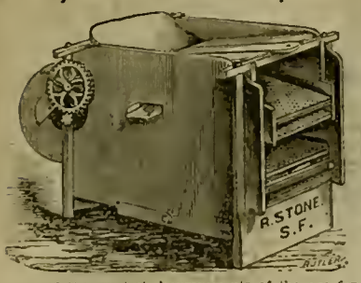
Particular attention given to plating goods for Builders, Plumbers, etc. Hotel and Restaurant work replated.

SAN FRANCISCO GOLD AND SILVER PLATING WORKS,
655 Mission street, San Francisco.

2v25-3m E. G. DENNISTON, Proprietor.

☞ BUY BARBER'S BIT BRACE. ☜

THE PATENT
Novelty Mill and Grain Separator



one of the greatest improvements of the age for cleaning and separating Grain, while it combines all the essential qualities of a first-class Fanning Mill. It also far excels anything that has been invented for the separation of Grain. It has been thoroughly tested on all the different kinds of mixed Grain. It takes out Mustard, Grass Seeds, Barley and Oats, and makes two distinct qualities of wheat if desired.

For further information apply to

R. STONE,
422 Battery street, San Francisco.

26v3

A Blake's Crusher

FOR SALE CHEAP.

One of Blake's Patent Ore Crushers, size 8x10, second-hand and in perfect order, is offered for sale cheap. Also,

A STEAM ENGINE,

8x16, and another 6x12, second-hand and in good order. Also,

A New Mining Pump,

6-inch bore and 5-feet stroke, double acting.

All of the above will be sold at good bargains by

J. HENDY,
No. 32 Fremont street, San Francisco.

21v24tf

POWER, TAINTER & CO.,

MANUFACTURERS OF

WOOD-WORKING MACHINERY.

3003 Chestnut street, (West end Chestnut street Bridge)
PHILADELPHIA.
☞ Woodworth Planers a Specialty. 4v25-3m

The Hesse Grinder and Amalgamator.

BEST IN USE!

Especially well adapted for the Reduction of Sulphuret Ores.

LORD & PETERS, Agents,
304 Battery street, San Francisco, Cal.
☞ Send for Circular. 13v24-3m

Notice is hereby given, that the copartnership heretofore existing between A. J. Severance, Charles W. Randall and J. Ons. Burt, under the firm name of "Severance, Holt & Co.," is this day dissolved by mutual consent. A. J. Severance, having purchased all the interest of his late partners, will continue the business of manufacturing and selling Diamond Drills, as before, under the style of A. J. Severance & Co.

Dated San Francisco, Nov. 24, 1871.
Office, 315 California street. A. J. SEVERANCE,
CHAS. H. RANDALL.
22-v23-tf J. GUS. BURT.

CALDWELL'S

Improved Stop Governor,

Manufactured at the CYCLOPS MACHINE WORKS, 113 and 115 Beale street, San Francisco.
3v24-3m WM. CALDWELL.

SHEET IRON PIPE.

THE

Risdon Iron and Locomotive Works

Corner Howard and Beale Streets,

Are prepared to make SHEET IRON AND ASPHALTUM PIPE, of any size and for any pressure, and contract to lay the same where wanted, guaranteeing a perfect working pipe with the least amount of material.

Standard sizes of railroad Car Wheels, with special patterns for Mining Cars. These small wheels are made of the best Car Wheel Iron, properly chilled, and can be fitted up with the improved axle and box—introduced by this company, and guaranteed to outlast any other wheels made in this State.

☞ All kinds of Machinery made and repaired.
24v22-3m JOSEPH MOORE, Superintendent.

REMINGTON'S

BREECH-LOADING

Sporting, Hunting, and Target Rifles.

Same system as the "Remington" Celebrated Military Rifle, of which over half a million have been sold. Its simplicity unsurpassed. For strength and durability unequalled. In accuracy unrivalled. In range, penetration, and ease of manipulation, without comparison.

The "Sportsman's" Delight, the "Hunter's" Favorite, the "Target-Shooter's" Pride. Also

REVOLVERS FOR HOUSE USE.

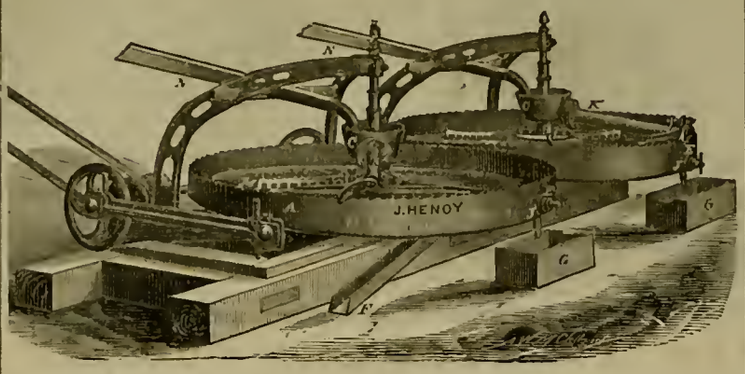
In these days of thieves and Burglaries, every householder should have a revolver for home protection.

REMINOTON'S RIFLE CANE.

Every gentleman should have one for protection against dogs and rowdies, and for field use.

E. REMINGTON & SONS,
19v24-6m 193 Broadway, N. Y.

HENDY'S
LATEST IMPROVED PATENT SELF-DISCHARGING SULPHURETS CONCENTRATOR.



Can be seen at the Manufactory, 32 Fremont Street, San Francisco.

Those in want of Concentrators would do well to visit some of the quartz mills that have Hendy's Patent Concentrators in use, and satisfy themselves before purchasing other Concentrators of pretended merit. THEY ARE WARRANTED TO WORK SATISFACTORILY.

The principle upon which HENDY'S PATENT CONCENTRATOR is constructed is the only true and mechanical one for the purpose of concentration.

Centrifugal Force and Gravitation,

Combined as they are in this Machine, CANNOT FAIL TO ACCOMPLISH the object sought.

Many certificates from proprietors of mills, who have this Concentrator in use, can be had if required, giving the most flattering accounts of its efficiency.

A most substantial evidence of its worth is the fact that its proprietor is receiving repeated orders from those who are using them, and who have tested their merits.

The proprietor has still further improved the machine, making it stronger and still more durable. He flatters himself that the added advantages leave nothing further to be desired as the perfection of the machine.

References:

Reference is made to the following mills, some of which have had HENDY'S CONCENTRATORS in use for over four years.

EMPIRE MILL. (8 Concentrators)	Grass Valley, Nevada County.
NORTH STAR M. & M. CO. (8 Concentrators)	Grass Valley, Nevada County.
VULTURE CO. (8 Concentrators)	Prescott, Arizona.
NOYE'S & CO'S MILL. (2 Concentrators)	Prescott, Arizona.
LUCY MINING CO. (3 Concentrators)	Owyhee District, Idaho.
EL TASTE CO. (3 Concentrators)	Sonora, Mexico.
ST. LAWRENCE MILL	Georgetown, El Dorado Co.
ST. PATRICK MILL	Newcastle, Placer Co.
JULIAN MILL	Newcastle, Placer Co.
VIRTUE MILL	Oregon.
KEYSTONE MILL	Amador Co.

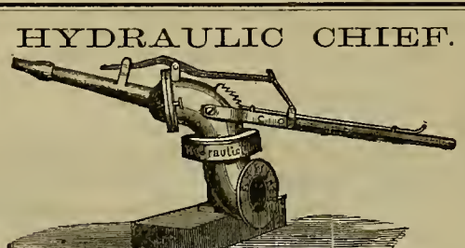
CAUTION—All of HENDY'S PATENT CONCENTRATORS are marked thus: "J. HENDY, Patented April 17th, 1866, and May 19th, 1868."

For full description send for Circular. Orders or letters of enquiry, address,

JOSHUA HENDY, San Francisco.
Office and works, 32 Fremont street. 18v24-1am-tf

HYDRAULIC CHIEF.

FISHER'S KNUCKLE JOINT AND NOZZLE IS THE Cheapest and Best Hydraulic Machine in use.



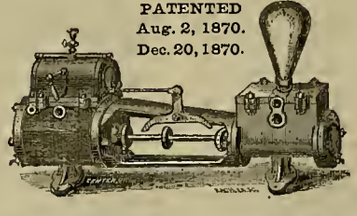
MACHINES Manufactured TO ORDER, to throw from One to an eight-inch STREAM.

The only reliable party in the Hydraulic business who protects his patrons.
9v23-tf Address F. H. FISHER, Nevada, Cal.

HYDRAULIC MINERS, TAKE NOTICE—I hereby caution Miners and Manufacturers against making, buying, selling or using a Hydraulic Machine or Joint known as the Little Giant, manufactured and sold by R. R. & J. Craig and Richard Heskin, as the same is an infringement upon the invention of the machine known as FISHER'S HYDRAULIC CHIEF, secured by Letters Patent, No. 110,222, dated Dec. 20, 1870. All parties participating in such infringements will be rigorously prosecuted. Nevada, Jan. 13th. F. H. FISHER.

THE SELDEN PUMP.

PATENTED
Aug. 2, 1870.
Dec. 20, 1870.



Combines Simplicity and Durability to a Remarkable Degree.

Its parts are easy of access, and it is adapted to all purposes for which Pumps are used—especially Mining.

Full description in *Scientific Press* of August, 1871.

Catalogues sent on application.

A. CARR,
43 Cortlandt Street, New York.

AGENT WANTED for Pacific Slope. 7v23-1y-eow

McAFEE, SPIERS & CO.,

BOILER MAKERS

AND GENERAL MACHINISTS,

Howard st., between Fremont and Beale, San Francisco.

J. M. STOCKMAN,

Manufacturer of

PATTERNS AND MODELS,

(Over W. T. Garratt's Brass Foundry).

N. W. corner Natoma and Fremont streets, S. F. Entrance on Natoma street. 6v23-3m

PACIFIC STONE COMPANY.

Ransome's Patents,

For which Commissioners for the International Exhibition of 1862 awarded the Prize Medal, and Gold Medal at the Mechanics' Institute Fair, 1871, of San Francisco.

The Pacific Stone Company call the especial attention of Architects, Engineers and the public in general, to the SUPERIOR QUALITY of the Stone now being manufactured by them in this city under the Ransome Patents. They make to order and keep in stock:

Building Fronts, Water Pipe,
Sinks, Monuments, Fountains,
Tiles, Copings for Walls,
Filters, etc., etc.,

Together with Ransome's Celebrated Free-Grit Grindstones, all of which we guarantee superior, and at a price far below that of hand-cut work.

The attention of private parties intending to build is respectfully solicited.

OFFICE, No. 10 BUSH STREET, San Francisco.

Dupont's Gunpowder, Safety Fuse,

— AND —

WINCHESTER REPEATING ARMS.

DUPONT'S Superior Mining Powder (saltpetre), F FF-FFF.

DUPONT'S Blasting Powder, in air-tight corrugated Iron Kegs, C-F-FF-FFF.

DUPONT'S Celebrated Brand, Diamond Grain, Nos. 1 2, 3 and 4, in 1 lb. and ½ lb. canisters.

DUPONT'S Unrivalled Brands, Eagle Duck and Eagle Rifle, Nos. 1, 2, 3, in half kegs, qr. kegs, 5 lb. tins, and in 1 lb. and ½ lb. canisters.

DUPONT'S Standard Rifle, Fg-FFg-FFFg, in kegs, half kegs and qr. kegs, and in 1 lb., ½ lb., and ¼ lb. canisters.

DUPONT'S Superior Rifle, A. F. & Co., F-FF-FFF, in kegs, half kegs, qr. kegs, and in 1 lb., ½ lb. and ¼ lb. canisters.

DUPONT'S Cannon, Musket, Meal and Fuse Powder.

EAGLE SAFETY FUSE (manufactured near Santa Cruz, Cal., by the L. S. & P. Co.) Constantly on hand full supplies of their Celebrated Brands, Waterproof and Submarine, Triple Taped, Double Taped, Single Taped and Hemp Fuse. Fuse made especially to explode the Giant Powder and Hercules Powder Caps.

The above named Fuse are warranted equal to any made in the world.

WINCHESTER REPEATING ARMS (Henry's Improved) and FIXED AMMUNITION.

A large and complete stock of these celebrated arms constantly on hand, to wit:

Repeating Sporting Rifles—Oiled Stocks.

Repeating Sporting Rifles—Varnished Stocks.

Gold, Silver and Nickle-plated Rifles—beautifully Engraved.

Repeating Carbines—Oiled Stocks.

Repeating Carbines—Gold, Silver and Nickel-Plated and Engraved.

Muskets—Angular or Sword Bayonets.

Full stock constantly on hand of all the different parts of the Winchester Arms.

Cartridges in cases (Brand H), manufactured by the W. R. A. Co. expressly for their arms.

A full and complete stock of the above named merchandise always on hand and for sale by

JOHN SKINKER, Sole Agent,
5v24-6m-1amr 108 Battery street, S. F.

The California Powder Works

No. 314 CALIFORNIA STREET,

SAN FRANCISCO.

Manufacturers and have constantly on hand

SPORTING,
MINING,
And BLASTING

POWDER,

Of SUPERIOR QUALITY, FRESH FROM THE MILLS. It being constantly received and transported into the interior, is delivered to the consumer within a few days of the time of its manufacture, and is in every way superior to any other Powder in Market.

We have been awarded successively

Three Gold Medals

By the MECHANICS' INSTITUTE and the STATE AGRICULTURAL SOCIETY for the superiority of our products over all others.

We also call attention to our

HERCULES POWDER.

Which combines all the force of other strong explosives now in use, and the lifting force of the BEST BLASTING POWDER, thus making it vastly superior to any other compound now in use.

A circular containing a full description of this Powder can be obtained on application to our Office.

16v20-3m JOHN F. LOHSE, Secretary.

THEODORE KALLENBERG,

MACHINIST,

and Maker of Models for Inventors. All kinds of Dies, Stamps and Punches made. Also, all kinds of Small Gears Cut.

Repairing done on very Reasonable Terms and in the best manner. No. 32 Fremont street, S. F. 19v23-3m

DEWEY & CO.,

American and Foreign

Patent Agents.

No. 338 Montgomery St.,
SAN FRANCISCO.

Patents Obtained Promptly.
Caveats Filed Expeditiously.
Patent Reissues Taken Out.
Patents Secured in Foreign Lands.
Assignments Made and Recorded in Legal Form.
Copies of Patents and Assignments Procured.
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Examinations Ordered and Reported by TELEGRAPH.
Rejected Cases taken up and Patents Obtained.
Interferences Prosecuted.
Opinions Rendered regarding the Validity of Patents and Assignments.
Every Legitimate Branch of Patent Agency Business promptly and thoroughly conducted.
ILLUSTRATED CIRCULARS FREE.

DEWEY & CO.,
Mining and Scientific Press, S. F.

A Worthy Invention—The Importance of Reliable Patent Agents.

MESSRS. DEWEY & CO., PATENT AGENTS, No. 338 MONTGOMERY ST., S. F.—*Gents*:—To remove a reproachful custom detrimental to the present and permanent interests of California. To preserve and perpetuate the wealth of the soil, the true source of a nation's prosperity. To make farming remunerative, reliable and attractive. To abolish the wanton, but heretofore necessary practice of annually destroying by fire, the vast fleeces of straw produced throughout this great State. To improve and increase in a four fold degree, the quality and quantity of feed at a time when so greatly needed, by the millions of sheep and thousands of starving cattle that are annually driven from the many pastures of the State to subsist in our valleys during the long dry period between the months of July and January.

You were by me recently furnished with a complete working model of a machine that will cut, chop, roll and spread evenly, or in rows, all the straw over the surface of the land, thereby affording immense quantities of improved feed of a choice kind for cattle and sheep, the refuse left by them not to be burned, but to be turned under by the plow to manure the ground on which it grew.

Understanding my right to said machine has just been secured through your efficient instrumentality, I regret my inability to use language sufficiently forcible or expressive of my high appreciation of your firm in the capacity of Patent Agents.

Your integrity, business ability and discreet dispatch are remarkable and praiseworthy.

The public generally and justly suppose that the Patent Agent holds a position peculiarly sacred and responsible, yet it is well known that unreliable and unprincipled men frequently find their way into that honorable calling, not to protect their patrons' interests, but for purposes of prey, hence the magnitude of distrust indulged in by many inventors when transacting business through agents of whom they have but a limited and meagre knowledge.

I have known persons to retain in model form their inventions for years before being reconciled to allow an agent to look thereon, thus debarring themselves and the world from the benefits of their really valuable invention.

Suggestions to Patentees.

After a valuable discovery is made, the first question put is, where shall I find an agent who is known to be able, honest and reliable.

To remove distrust from the minds of this class of persons as a guide to the simple and unwary, I would suggest that it is a duty encumbent upon all patentees to have secured to every patented article or machine of worth, the name of the agent through whom the patent was secured.

By this means I apprehend a discerning public would see and know by a better than newspaper evidence, through whose instrumentality valuable patents have been obtained.

Inventors throughout the length and breadth of the whole land would be conducted to proper persons who would foster, not fleece them of their rights, besides affording publicity to a truthful and substantial character to worthy and deserving agents, by the right means—the machines themselves. By the right parties—the Patentees.

Irresponsible and dishonest men would be shorn of patronage and driven into deserved seclusion. Able and worthy agents would be elevated to an eminence, honorable and enviable by the potent pressure of public esteem.

Inventors stimulated to increased activity and energy, improvements in all branches of legitimate pursuits would make great and rapid strides, labor lightened, humanity dignified. Upon the plan suggested I shall always act, and cause, as far as possible, to be carried out, confident as I am that I thereby discharge a duty, a duty I owe to myself, to my agent and to a solicitous and inventive public.

Many of my machines are now useful and valuable, adapted as they are, not only to this State, but every State throughout this great and influential country. The Canadas on the north and vast possessions of other governments on the Continent, Australia and the Colonies as well, and each one as it goes shall contribute to give to DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, SAN FRANCISCO, CALIFORNIA—that honorable and enduring public prominence so justly and well deserved. With undiminished confidence, W. A. DAWSON.

Alameda Co., Cal., August, 1872.

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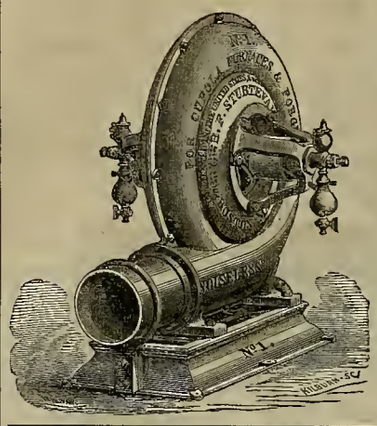

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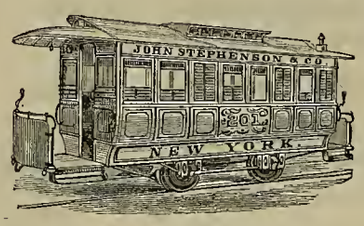

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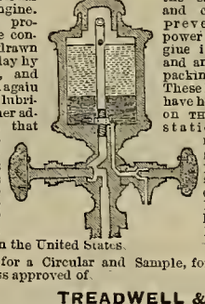

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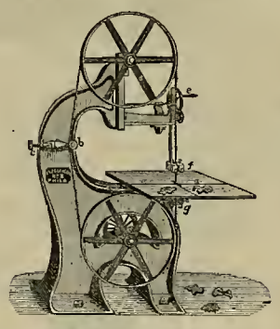

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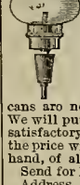

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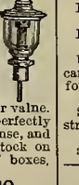

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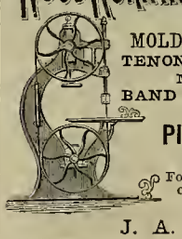

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SAN FRANCISCO, SATURDAY, AUGUST 17, 1872.

VOLUME XXV. Number 7.

The Diamond.—No. 2.

It will doubtless interest many of our readers to learn how the elegant brilliant, which always sparkles and flashes so brightly iu its finished state, occurs in Natnre; how it appears when taken from its matrix, how it is obtained, and how distinguished from other crystale similar in appearance.

The Geological Position of the Diamond.

The diamond is most commouly found among the debris of a peculiar laminated schistose rock, known to geologists as *itacolumite*, helonging to the talcose series, and said to be metamorphic. It owes its lamination to the presence of a considerable amount of talc or mica. This rock is fonnd in Brazil, in the Urals and in Georgia and North Carolina—all diamond localities.

When this *itacolumite* has heen hroken down by natural causes, and mixed with earth, sand and hroken, loose, angnlar quartz fragments, and not far removed from its original place, it is called *gurgulho*. When it is mixed with rolled quartz pehbles, ronnded gravel much ahraded by water, and with the appearance of having traveled far, and the whole united into a kind of cement, by the presenee of a ferruginous clay it is called *cascalho*. It is in these two secondary conditione of the itacolumite in which the diamond is songht for as an article of commerce. It is never eought for in the nndisturhed itacolumite; hnt only after that rock has heen thus broken down and concentrated by the rivers—the great eluices of nature—into gurgulho or cascalho. If gold was diffused through the country rock, like the diamond, even that wonld not he worked in place. Such work is possihle only hecause that motal is found concentrated hy nature in its original matrix, the veine of quartz, which intereeam the country rocks. That the itacolumite is the true matrix of the diamond has been made quite certain of late years from the fact of several diamonds having bcen found in that rock as it existed in place.

We have said that the diamond is most commonly found among the debrie of itacolumite; hnt it ie also occasionally found in Brazil, among the debris of a peculiar kind of eandstone, and gcologists who have recently visited the diamond fielda of Africa report that it occura there almost altogether in sandstone similar to that in which it is eometimes found in Brazil.

By what we can learn from an engineer, supposed to be in the confidence of the Roberts-Harpeuding Co., and from conversation with persone who have traveled extensively in the localitiee where it is supposed the ground of that company is located, wc have good reason for believing that the eame kind of sandstone underlies a large portion of that region, and that the drift of the localitiea where the diamonds are fonnd has been removed juet ahout far enough to constitute the *gurgulho*, which, according to Dana, furnishes thc best class of diamonds.

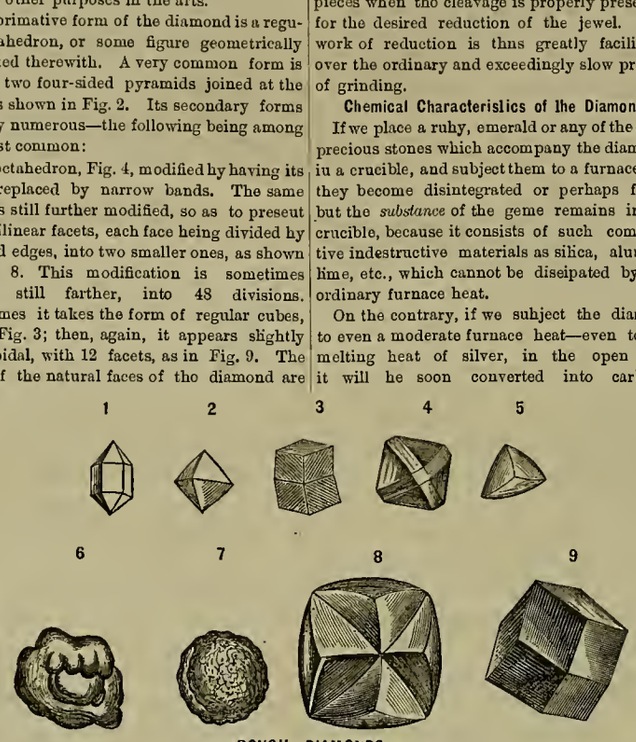
The Diamond in Ihe Rough.

Passing over, for the preeent, the manner in which the diamond is waahed out from the gravel and separated from the foreign matter in which it is often eucased, we pass directly to the consideration of the form and character which it presents hefore art has lent its aid to shape and further beautify it.

The diamond usually occurs crystallized, and with rare exceptions in small epherical grains, which often present very dietinct crystalline faces, transparent, translucent or opaque; eometimes slightly tinted with blue, green, clove brown or rose red. It is also fonnd massive or simply crystalliue, without lines of crystillization as in the black diamond or boort, as it is sometimes called, and which is used for drilling and other purposes in the arts.

The primative form of the diamond is a regular octahedron, or some figure geometrically connected therewith. A very common form is that of two four-sided pyramids joined at the base, as shown in Fig. 2. Its secondary forms are very numerous—the following being among the most common:

The octahedron, Fig. 4, modified hy having its edges replaced by narrow bands. The same figure is still further modified, so as to preseut 24 curvilinear facets, each face heing divided hy elevated edges, into two smaller ones, as shown in Fig. 8. This modification is sometimes carried still farther, into 48 divisions. Sometimes it takes the form of regular cubes, as in Fig. 3; then, again, it appears slightly rhomhoidal, with 12 facets, as in Fig. 9. The lines of the natural faces of tho diamond are



ROUGH DIAMONDS.

usually slightly curved, as in Fig. 5, and the faces themselvee slightly raised, ae imperfectly shown in the same figure. These curvatures are an infallihle test for a diamond.

Though crystallized, and of the purest water, diamonds sometime entirely loose their regular form and asaume a massive or irregular, nodular shape, ae in Fig. 6.

The Boort or Black Diamond.

Fig. 7 represents a eomewhat peculiar, though very common, rounded, concretional form, denominated boort or boart, which is classed among the black diamonds. This curious substance has no cleavage, like the true diamond, and is supposed to he a sort of connecting link hetween carbon in its ordinary forms, and as a true diamond; hence it ia sometimes called "diamond-carbon." Its hardness is equal to that of the true gem, while its epecific gravity ie much less. Under the microscope it appears distinctly crystalline, and apparently an aggregation of granulea or lamellas of diamond, analagous to a grit of quartz sand. It sometimes contains cavities, empty or filled with foreign substances. It is found of various sizes from that of a pea or less to a large sized marble. One is reported to have been found which weighed a pound. It waa formerly but little valued; latterly, however, it has very much advanced in price. Minora sometimee eoak it iu vinegar to add to its weight, aa some unscrupulous persons sometimea do retorted gold in water. It ia employed chiefly as duet for diamond cutting. It is also used in the diamond drill. When burned it leaves a emall residue of ash, the product of the foreign minerals which become entangled in its cavitiee, prohahly during its aggregation.

All diamonds having regular forms are of a laminated structure, as shown iu Fig. 3, and are readily divided along the planee of lamination. This peculiarity is often taken advantage of by diamond cuttere chipping off small pieces when tho cleavage is properly presented for the desired reduction of the jewel. The work of reduction is thns greatly facilitated over the ordinary and exceedingly slow process of grinding.

Chemical Characterislics of Ihe Diamond.

If we place a ruhy, emerald or any of the other precious stones which accompany the diamond, iu a crucible, and subject them to a furnace heat they become disintegrated or perhaps fused; but the *substance* of the geme remains in the crucible, because it consists of such comparative indestructive materials as silica, alumina, lime, etc., which cannot be diseipated by any ordinary furnace heat.

On the contrary, if we subject the diamond to even a moderate furnace heat—even to the melting heat of silver, in the open air—it will he soon converted into carbouic acid gae and pass off, like any other gae, into the atmosphere. It turns hlack and burns just like a piece of anthracite coal—to which substance it is nearest allied; only it does not leave any ash, hecanse it ia pure carbon, while anthracite is carbon with a little earthy matter mixed with it.

The diamoud though the hardeat of all substances, ia neither a etone nor any other mineral—it is simply cryatallized carhon, which ie an organic suhstauce and not mineral.

Manner of Searching for Diamonds.

Diamond placere, where water is convenient and plentiful, are worked much as gold-placers are, by washing or eluicing off the lighter earthy mattere, when the residual heavy portions are placed upon a table, where a convenient search may be made for any loose diamonds which may be found. That done, the lumps which have not been diseolved are carefully hroken up and examined. Sometimes the diamond is found encased in a hard concretional substance to which the diamond is a sort of kernel. Of course much care must be exercised in breaking up euch lumps or concretious to find the precious jewele which they encase.

The lahor of washing is more or lees tedioua, according as the gravel is more or less yielding to the softening or dissolving action of the water. In some placea the gravel is placed in holea or hollows, and eoaked for some days to render it more easy for washiug.

In most of the diamond fields of the world water for washing is very ecarce, and various devicee are called into requisition to meet that important want, a condition of things which will he fully realized hy all gold miners who have worked for the precions metal in extremely dry districts.

The Arizona Diamond Fields.

We nnderstand from those who are familiar with that portion of Arizona in which diamonds have recently been discovered, that the country thero is quite well watered and abouuds in excellent timber, which may be converted into convenient forms of lumber, in the immediate vicinity of the placers. The country also abounds in grass during the summer months; game is also abundant. The winter climate there corresponds very nearly to that in the foothills about Nevada and Grass Valley in this State. The snow frequently falls a foot deep or more in the valleys and table lands on which the diamonds are found, but soon disappears; while upon the adjacent mountains it lays continuously for from three to five monthe.

How lo Dislinguish Diamonds from other Crystals.

The first thing to be looked after when a suspected stone is found, is to see whether it will cut glass or quartz with its sharp edge. A diamond will do so readily. When the specimens are too small to be held between the thumh and finger for trial, they may he pressed into the end of a stick of hard wood. This test will determine whether the specimen is quartz or not; but will not distiuguish it from topaz, sapphire, zircon, etc., as these stones will also cut glass. It is always safe to save everything that will cut glass or quartz, and rely upon a professional expert to decide upon ite name and valne.

The most certain test for the diamond is its curved edges and faces already referred to, which will always be found on at least one or more of its edges and faces, if uot upon all. A diamond may also be readily distinguished from a quartz crystal by the form of the latter, which is always six sided, while the diamond will be either, four, eight, twelve, etc., as already described. The annexed figures 1 and 2—No. 1 being a crystal of quartz and No. 2 being a diamond—shows the striking and unmistakeable difference between a quartz crystal aud a diamond, when both are perfect and unmodified in form.

An Observatory in the Sierras.

The famous telescope maker, Alvin Clarke of Cambridgeport, Mass., is now engaged in constructing a 27-inch refracting telescope for the U. S. Government, at a cost of about $50,000. It is designed that this instrument ahall he aet up at eome point of high elevation, either on the Rocky Mountains or the Sierra Nevada, and Prof. Young, the well kuown astronomer of Dartmouth College, and Prof. Davidson of the Pacific Coast Survey, have heen employed to select the proper site. After an examination of hoth regions, it ia understood that a point near where the Central Pacific Railroad crosses the eummit of the Sierraa, the elevation of which is ahout 10,000 feet ahove the sea level, will prohably he selected as the site for the new observatory.

The clearnese of the California atmosphere, and the freedom from obstructing clouds at that elevation will render the point designated, moet admirahly suited for astronomical purposes. It is eaid that with such a telescope, and the high magnifying power of which it will admit the use, there is not over one or two days or nights per year on the low Atlantic coast where it conld be used with its highest magnifyiug powera, while on the Sierra, with our freedom from cloude, many more favorable opportunitiea must exist for snch an important use of the extensive power of the instrumont in making observations, and we look forward for marvelloua revelationa in physical astronomy, if the propoeed site ia finally decided on. The attention of the astronomical world has long recognized the importance of an observatory on this coast, and we trust that no misdirected zeal or local jealousy will interfere to prevent the early anticipated conenmmation of such a work.

CORRESPONDENCE.

Notes of Travel in White Pine Co., Nev.

[Continued.]

[By our Traveling Correspondent.]

Schellburn, White Pine, Co.,

Is located a little north of east of Hamilton the county seat, and distant 75 miles; or 90 miles via, Robinson District, and 100 miles nearly south of Humboldt Welle Station, on the C. P. R. R., at an elevation of a little over 6,000 feet above the sea level. It contains about 400 inhabitants and the district contains about 900. It is beautifully located at the west end of Overland Cañon, with plenty of water running on either side of the town and wood in abundance on the mountain sides close by. The town contains two fire-proof mercantile buildings built of stone, the principal one (containing the Post-Office) is owned by W. H. Duren, Esq., and one of the finest interior hotels is carried on here by P. P. Molinelli, containing all the modern improvements for the traveler's comforts.

How to Get There.

Take C. P. R. R. cars at San Francisco, and travel as far East as "Well's" Station, Nev., (known as Humholdt Wells), distant 661 miles; at this point the accommodating stage-men, Messrs. Woodruff & Ennor run a daily line of 6 horse stages to Schellburn, distant 100 miles south of "Wells" Station; fare $20. Should the traveler wish to visit Hamilton and Pioche, from Schellburn there are two stage lines, one owned by a Mr. Grant, and the other by E. J. Travis, Esq.; fare by the former $10, and by Travis' line $5; from Schellburn to Hamilton, or vice-versa. We traveled by Travis' line carrying the U. S. Mails and W. F. & Co's. Express, and faster staging we have never seen—since the early days of travel to Virginia City, making 90 miles in 11 hours and 40 minutes, including stoppages for dinner, and changing horses 5 times.

In making mention of the mines of Schell Creek District, going south, we will speak first of

Queen Springs Hill,

Around which is a group of mines belonging to an English company, and superintended by Prof. Clayton. This hill is located about fourteen miles south of Schellburn.

Passing this point we next arrive at the Sweepstakes mine owned by T. R. Posey and others, together with the Excelsior, Labross, Boprey and Nutmeg. Rock has been worked from all these mines, with very satisfactory results, and all are being speedily developed. On the Labross a tunnel is being run, which when completed will be 600 feet in length; already in 160 feet. This tunnel is being run to test several important ledges, and will tap the same at a depth of about 300 feet.

The Nutmeg, one of this group, developed some few feet from the croppings, exposes some of as rich rock as there is in the district; as to extent it seems to be the largest.

Tehama Con. S. M. Co.

Capital $3,000,000 in 30,000 shares. This corporation own by purchase some seven ledges, bought of the original locators, Samuel Jameson and E. G. Demill, for which they paid the sum of $28,500; present owners, Hon. John Boggs, Geo. Treat, J. N. Dickinson, Arch. McDonald, Edgar Mills, W. H. Duren and Jas. S. Cameron; Arch. McDonald, Supt.

This company's property is located on Central Hill, four miles south from Schellburn; their developments consist of a tunnel running in to tap the ledge at a depth of 500 feet from the cropinge; this tunnel is now in 150 feet, working night and day. On the surface this company are sinking on the ledge—if you may call it one—but it is more like taking down the face of the mountain, and taking out rock that will pay from $100 to $10,000 per ton, and everything will average $100 per ton, that meets the eye; they are working twenty men; a 30-stamp mill will be immediately put upon this mine, and they have splendid water power and wood.

Schell Creek District—Springville,

Situated one mile nearly north of Centerville, known as Maguire and Whitworth's town site; this site commands one of the best water privileges in this section of Eastern Nevada. Two buildings have been erected at this point, one a hotel. The Home Ticket mine, described elsewhere, is within a quarter of a mile of this point. Timber is abundant, and fine grazing; animals live out here well the year round.

Centerville.

This little village just springing into existence, is located a little east of south of Schellburn, on the east side of the Schell Creek Range, 8 miles from Schellburn, or midway between the latter and Ruby Hill; this place contains at present about 40 inhabitants.

The town site of Centerville, together with the water privilege, and the following named mines or locations are owned by R. J. F. McWilliams and Mr. Masterson, all of which are fine locations, and more or less developed. The Snow Storm down 10 feet, assays from $70 to $1,250 per ton, extends 1,000 feet on the ledge. The Morning Star claim has a ledge of 800 ft.; Great Eastern 1,000 ft.; Anna mine 1,000 ft.; First South Ext., Elephant 1,000; Monitor mine 1,000 ft.; First Northern Ext., Simon 1,000 ft.; Mohawk mine 1,000 ft.; Nantucket mine 600 ft.; Hidden Treasure 600 ft.; Mahogany mine 800 ft.; Argenta mine 1,000 ft.

Pennsylvania M. and M. Co.

This company is an incorporation of $1,000,000 capital stock, in 10,000 shares. J. M. Livingston, Pres.; Dan Buck, Sec.; office S. F.; Joseph Woodworth, Supt. The mine of this company is located about one and one-half miles north of Centerville, working ten men; like the majority of mines in the district the ore is obtained from the surface and running in the ore of this mine is silver, slightly base, and will average about $100 per ton; selected rock will run into the thousands.

This company have in course of construction a five-stamp mill, with two pans, and expected to be completed and running by August 10th. It will be run by steam engine of about twenty-four-horse power, and will have a capacity to reduce ten tons per day. It is the first mill in the district as yet.

The Town Site of Centerville,

Consisting of 160 acres, together with the water privilege, which is fine, is claimed by R. J. F. McWilliams & Co.

Silver Canon District—Grace Mining Company.

This is an incorporation of $6,000,000 capital stock, in 60,000 shares. James Gamble, Pres.; Wm. H. Knight, Sec.; and Caleb Whiting, Supt. This company own a group of six ledges or sites known as the Grace, National, Whiting, Marian No. 1, Nellie and Albert, and Dictator. Assays from this group run from $31.42 to $7,093.76 per ton. At present the company are running a cut to cross the Grace ledge to test its width, which is from twelve to fifteen feet. The prospects are so flattering that a mill will in a short time be erected. A splendid water privilege is owned by them in connection with the Silver Cañon Company; and wood is plentiful.

Ruby Hill

Is a village of about 100 inhabitants, situated nearly south of Schellburn, and distant by trail thirteen miles, by stage or wagon-road twenty miles. It contains no hotel, but has two restaurants, and very accommodating miners, who are willing and ever ready to share their rooms with the traveler.

Its Mines.

First, running south is the Northern Light, owned by Taylor, Leach & Co. Second—Bay State, owned by Bird & Co. Third—Cow and Calf, owned by Whitworth and Adams. This was the first location on Ruby Hill, having been discovered on the 16th of July, 1871. Fourth—the Silver Wreath S. M. Co. which consists of ten locations or sites. This property was disposed of by Bird and Fitzhugh, to Col. W. O. Sydney of London; it is prospected in twenty feet by forty feet in width, showing a continuous body of the richest ore in this district.

This company have about 125 tons of ore on the dump that will go considerably over $100 per ton, without assorting. Extensive preparations are in progress to work this mine on a mammoth scale; a mill will be put up immediately.

Next adjoining is the Birch S. M. Co., owned by Bird, Fitzhugh, Taylor & Co. This company have consolidated with a 5-stamp mill (nearly completed) at Rubyville, one and one-half miles west from this place; they have about 20 tons of ore on the dump; but 1,000 tons in eight very rich; will average over $100 per ton, for all in eight; working 4 men; the rock is so easily obtained, that this number will keep the mill running.

Sixth, is the Tambien M. Co. This is an incorporation of $3,000,000; capital stock, in 30,000 shares. J. H. Williams Pres., and David Wilder, Sec; Frank Almon, Supt. A shaft is sunk on this mine about 20 feet deep on the ledge, exposing splendid ore; working 4 men. This is a different ledge from any of the above, and located one-half mile east; like all the other locations in this vicinity, this lode runs north and south, and dips to the east at an angle of about 70°.

Seventh is the Monitor S. M. Co., a San Francisco incorporation. Col. W. T. Robinson is Supt.; now working 2 men—no more to be had—they have a shaft down on the lode 30 feet; the ledge is about 30 feet wide and prospects very rich; they have about 75 tons of $50 ore on the dump. This claim is located one-fourth of a mile below the Tambien, and a little nearer the village of Ruby Hill.

Eighth, Wide West Co., owned by Monehan, Bowie, Maguire, Coburn and Brophy. This is one of the finest locations on this hill, for over 200 feet running north and south, the croppings reveal a ledge from 8 to 30 feet thick, and any point prospects as high as $100 per ton and from that up to $500 per ton. About 45 tons of pay ore is now on the dumps, that is claimed to pay $250 per ton, and it appears to have that value.

Columbus Mine,

Owned by John Wegner, consisting of the Columbus and New York ledges; a tunnel is run into this mine ninety-five feet; at a point ten feet further, they expect to strike the main body of ore, visible on the croppings, in running this tunnel. When in 80 feet, they struck a body (unexpectedly) of decomposed quartz 2 feet thick adjoining which was a body of 2 feet solid ore; this body prospects from $30 to $160 per ton; an incline is sunk from the top revealing a very fine body of ore rich and extensive; working 2 men.

Passing north from the Schellburn are some splendid locations, among the most prominent of which are the

McMahon G. and S. M. Co.,

An incorporation of $3,000,000 capital stock, in 30,000 shares. O. F. Giffin, Pres.; S. R. Spinney, Sec.; and A. P. Cox, Agent; J. D. Holland, Mining Foreman. This claim was located by J. McMahon, Henry Gilbert and J. D. Holland, but was sold and since incorporated by J. H. H. Williams & Co. of S. F., for $30,000. This company own 1,800 feet on this location, which is situated three and one-half miles north of Schellburn. They are now drifting on the ledge, facing into the mountain, on a vein at least twenty-five feet thick.

This rock assays from a few dollars to away up into the thousands, per ton. Several tons have been worked from this mine, in different lots, that averaged $175 per ton, and the whole facing of twenty-five feet, extending some forty feet in, will pay at least that average. This company anticipate running a tunnel to this mine, which will be, when completed, 400 feet in length, and tap the ledge at a depth of 125 feet from the surface; they now employ twelve men. South of the McMahon is the

Woodburn Mine,

Owned by a company in New York; has a 7-foot ledge, and working 10 men; have out 200 tons ore on the dump. W. F. Dyer, the Superintendent, has shipped a lot of the ore to Newark, New Jersey, to Babbuck & Sons, which will work $800 per ton. This mine is situated two and one-half miles north of Schellburn, near the Mc Mahon. From Robinson District, Piermont and Pioche in my next. L. P. MC.

Mining Correspondence.

Star District, Utah.

At present business is rather dull in this district, but the people expect to have a lively camp pretty soon. A correspondent of ours writes that the mineral wealth of Beaver county, Star and surrounding districts, is immense, but that at present the country is suffering from want of money, though they expect that in a year from now that section of mining country will be second to none in the Territory. Nature has provided everything necessary to work the mines successfully with but little expense; all they want is cheap transportation and some assistance from capitalists, which latter item is always an important one in a new district. Timber and water are to be found in abundance in the county and near the various mining districts. In close proximity to the silver lodes are splendid copper and base metal mines which will attract the attention of capitalists when the country is better known. A mill and roasting furnace are wanted there, as well as in many other places, and our correspondent says that a fortune is waiting for the man who has enterprise and capital enough to bring one.

Schell Creek Mines.

A correspondent writes us as follows from Humboldt Welle, Nevada:

Thinking that a few items from an old Grass Valley acquaintance visiting these parts might prove acceptable, I give you such as have come under my own observation. Three weeks since I left San Francisco with a view of learning for myself of the recent discoveries in and about Schell Creek, as well as other districts in the immediate vicinity, and I must say that for once I think the prospective richness of the Schell Creek mines has not been overdrawn.

Commencing with the McMahon and Woodburn mines on the north, each day's work but confirms the good opinions formed on their purchases. Continuing south on Queen Spring mountain, and still farther on to Centreville the developments are proving up the permanency of the mines.

Joe Woodworth will have his mill (5 stamps) running by the first of August on ores from the Home Ticket mine recently purchased by his company. At Ruby Hill I saw evidence from the rich outcropping leede, which will far surpass anything in the district. I would refer to one lode in particular—the Silver Wreath—purchased some two months since by an English company for $30,000, which I think could not be bought to-day for $100,000. The face of the lode or rather width going into the hill is seventeen feet—all the ore averaging about $150 per ton. They have some 200 tons on the dumps already,—the result of four men's work for six weeks. It is absolutely impossible to calculate on the value of this mine, should the ore body go down. Much of the ore is of a very high grade, say from $1,000 to $2,000 per ton, and which is being sacked for the purpose of shipment. There are many other leads adjoining, and continuing on in the silver belt which give every evidence, from surface indications, of being equally as rich when developed.

Thus far little has been done outside of the Silver Wreath company towards opening up new claims, prospectors preferring to sell rather than develop. Schellburn continues to improve, both in building and in daily increase of population from the surrounding districts. Yesterday I learned from a gentleman from Toano that two mines—the Wilson and Silver Zone—located in the Silver Zone district, eighteen miles south of Toano, has been purchased by Capt. Cheever for San Francisco parties; consideration about $15,000.

On Saturday last, D. H. Barker (civil engineer) left this point (Wells) with his party to make the preliminary survey of a narrow gauge railroad south as far as Robinson district, going via. Spruce Mountain and Schell Creek.

THE COAL FIELDS OF ENGLAND.—In a recent lecture by a geologist engaged on the Royal Coal Commission, the opinion was expressed that the Coal fields of England had originally been joined together in one large area, but that by various changes, such as downthrow, the various fields had been separated. The intervening spaces, it was conjectured, covered coal, which, however, was buried so deep that it could not be worked with profit. It was asserted that considerably more coal lay concealed at workable depths than appeared in the fields. The South Staffordshire field, it was asserted, contained 3,201,672,216 tons of coal; the Warwickshire, 458,652,714 tons; and the Leicestershire, 836,799,734 tons, making a total of 4,497,124 664 tons. Underneath the Permian strata of rock of the above fields it is estimated that there are to be found 14,664,000,000 of tons of coal

SCIENTIFIC PROGRESS.

Contortion of Rocks.

The phenomenon of a layer of limestone, slate, coal, or other rock, bent even to a right-angle, without utter fracture, is one which a endden force could not produce, if the mass were solid; and the hypothesis that in such cases that the strata were soft and plastic at the time of contortion, does not explain the circumstances, and is for some kinds of rock *a priori* difficult or impossible to admit. When it is once assumed, however, that the forces lifting and binding rocks, were and are mostly very slow and gradual in their action, the difficulty vanishes; for it is now demonstrable that solid and crystalline rocks can be permanently changed in form by such pressure.

Sir James Hall, by an experiment now familiar to geological students, showed upon a pile of cloth, representing a series of sedimentary rocks, the effect of horizontal, lateral pressure in causing curves and folds; but Mr. L. C. Miall, Curator to the Leeds Philosophical Society, has recently applied a similar apparatus to the actual flexure of thin layers of stone, and has found that they can not only be bent within the limits of elasticity, but permanently "set" without fracture. He says of certain bituminous mountain limestones, "The elasticity of the rock was greater than I had expected, but the set or permanent deflection produced by long-continued pressure of inconsiderable amount, far exceed what I had hoped to find. It may be doubted whether there is any limit to the bending which a careful and patient observer can produce."

It must be remembered that strata thus exposed to lateral pressure, in nature are protected against breaking by the inclosing rocks. To imitate this condition, Mr. Miall embedded thin slabs of limestone in pitch, and succeeded, by application of pressure at the edges in bending such slabs, nine inches long, until they rose two-thirds of an inch in the center. These experiments are confirmed by many well-known instances of natural contortion. Mr. Miall mentions a number of similar instances, and quotes also the experience of elaters, who find that when, by the yielding of timbers the surface of an old roof has become bowed, the (stone) tiles are distorted to such an extent that they will not lie flat on a new roof; and miners, engineers, and architects are familar with such effects produced by long strains upon imperfectly-supported stone.

These facts may help to explain the phenomena of contorted rocks, pebbles, crystals, and fossils, formerly so puzzling to geologists. They have some bearing also upon the question of the movements of ice in glaciers, etc.

Improved Manufacture of Homogeneous Metals.

Mr. G. B. Galloway, of London, has a patent for improvements in the manufacture of iron, which he denominates "iron-steel." He proposes to accomplish the purification of the iron in its manufacture by a specially prepared fuel consisting of creosote and other dead oils made into fuel with a mixture of duff coal breeze, the refuse of sawmills, various waste materials and peat. This fuel will contain no sulphur, and will have the tendency to diminish the sulphur or phosphorus which ores generally contain, and, therefore, the first stage of manufacture will produce a purer product than when coal or coke is used. He also proposes to use zinc, tin and lead in the mixture of metals, as may be required to produce the quality of iron wanted. He proposes to obviate the necessity for puddling by arranging the blast, which is to be of superheated air and steam, in different jet pipes, which are to enter the cupola at various places. The air and steam pressure is to be varied and regulated by valves or stop cocks in the pipes, and the force of the blast will puddle up the iron. He also proposes that air and steam from a branch pipe shall impinge upon the metal, which runs from the furnace by a circuitous route, so thus further purified and made into rolls or balls of the like consistency in heat, and thus is ready for the steam hammer or rolling mill. The patent specifies a mode of making special qualities of homogeneous iron for ship and boiler-plates, which iron would be but little corroded by water, would be strong and tough. A special quality is also made for armor-plates rolled to V form in the horizontal sectional view. This outer form would be so tempered as cutting chisel steel, that it would have the tendency to prevent the penetration of shot by breaking it up, while the mode of filling up the divisional spaces in the plates with wood or other fibrous material would deaden and absorb the concussion and effect of shot.

PHOSPHORUS ABSORBED BY CARBON.—M. M. Eulenberg and Vohl have demonstrated that phosphorus is absorbed by carbon, and to such an extent that, taken in the form of pills, carbon constitutes a complete antidote to the poison, and relieves those who have to manipulate phosphorus from all the disastrous consequences hitherto accruing. It has been found that the results of these pills in match factories are better than those obtained by the use of the essence of terepenthine, as the continued use of the latter produces violent headaches.

Production of Ozone with Electricity.

Experiment has shown that in the production of ozone by electricity the maximum amount of oxygen is ozonized by the silent or glow discharge, and most of the forms of apparatus by which this is affected are so contrived that the oxygen flows slowly through a space traversed by such a discharge. In the apparatus of Von Babo, of Siemens and of Houzeau, the metallic conductors are separated by glass and a stratum of air. By inductive action of the charged metallic surfaces the intervening air becomes charged with electricity oppositely upon its two sides, and simultaneously with the discharge of the metallic terminals. Through the wire of the coil, a discharge takes place through the air, not in the form of sparks, but diffusely, producing a glow of purplish light, visible only in the dark. These apparatus succeed best with electricity of comparatively low tension. In using the Holtz electro-machine, with them the discharge is apt to occur chiefly in the form of sparks, and the shape of the apparatus must be varied to give the best results. When the poles of the machine itself are separated to a sufficient distance, the electricity passes either in the form of a diffuse brush, spanning the whole interval, or with a very minute brush upon the negative pole and a glow upon the positive, the intermediate space not being visibly luminous. This is the so-called dark or silent discharge, exhibiting the phenomena of the electric shadow when suitable objects are interposed. When this occurs, the strong odor shows that a considerable amount of the atmospheric oxygen is converted into ozone. If the discharge takes place in an enclosed space through which air or oxygen can be driven, the ozonizing effect of the electricity is heightened and can be utilized. Prof. A. W. Right (*Am. Jour. Sci.* for July) gets very satisfactory results with an apparatus consisting of a straight glass tube, 20 c. m. long with an internal diameter of 2½ c. m., having the two ends stopped with corks covered on the inner side with a coating of cement, to protect them from the ozone. Through each cork is passed a glass tube, 5 m. m. in caliber and 7 m. m. long, having a branch tube inserted perpendicular at the middle and long enough to permit a rubber tube to be slipped upon it. The outer ends of the tubes are closely stopped with corks, through which passes copper wires carrying suitable terminals at their inner ends and bent into a ring at the others. They are fitted so as to make tight joints, but to allow of motion in order to vary the distance between their inner ends. One of these wires carries a small ball; the other terminates in a disk with rounded edge each perpendicular to the axis of the tube, and so large as to leave an annular space of two or three millimetres breadth around it. The gas is admitted through one of the branch tubes and escapes from the other after having passed through the whole length of the tube.

HISTORICAL LESSONS FROM A BRICK.—Who would suppose that an humble brick could be capable of imparting valuable and important information, even to corroborate the sacred writings? But an Austrian *savant* has discovered, by means of a microscope, in a stone taken from the pyramid of Dashour, many interesting particulars connected with the life of the ancient Egyptians. The brick itself is made of mud of the Nile, chopped straw and sand, thus confirming what the Bible and Herodotus have handed down to us as to the Egyptian method of brick-making. Besides these materials, the microscope has brought other things to light—the *debris* of river shells, or fish, and of insects, seeds of wild and cultivated flowers, corn and barley, the field pea, and the common flax, cultivated probably both for food and textile purposes, and the radish, with many others known to science. There were also manufactured products, such as fragments of tiles and pottery, and even small pieces of string made of flax and sheep's wool.

ODOR OF PLANTS.—Mr. J. Britten, in the *Gardener's Chronicle*, says: "A large proportion of pale and white blossome are fragrant, and it is ascertained that these predominate in northern regions. We may therefore conclude that the relative number of odorous flowers is greater towards the poles than toward the equator. It would seem that the too powerful action of light and heat is opposed to the emanation of the odors of flowers, and we see many specimens which are scarcely fragrant during the day, become so in the evening or during the night. But if the odors emitted by the blossoms are more frequent in the north, the reverse is the case with the essences inclosed in the glands. Plants with fragrant leaves, aromatic fruits and wood penetrated with essential oil are scarcely found except in warm or tropical climates."

OZONE IN THE AIR.—According to a paper in the *Journal* of the Scottish Meteorological Society, observations have shown that when the air had a pleasant sharpness and stimulating influence, the largest amount of ozone was present; when it was close and depressing, little, if any, ozone was detected.

THE OXHYDRIC LIGHT, says *Engineer*, has not proved a success in Paris, and has been discontinued in the public lamps in the Boulevard des Italiens.

MECHANICAL PROGRESS.

Siemens' Steam Jet.

In order to avoid, in the use of the steam jet, the eddies in the combined current of steam and air, and to utilize more completely the initial movement of steam, Siemens employs a thin annular jet of steam in the form of a hollow cylindrical column, discharged from an annular nozzle. The air to be propelled is admitted through an exterior annular orifice surrounding the jet, and also through the center of the hollow jet, and the area of the air passages is gradually contracted on approaching the jet, whereby the velocity of motion of the entering air is so much accelerated, before it is brought in contact with the steam, as to avoid the great difference in the velocities of the two currents, at the point where they come together, which caused the eddies which previously impaired the efficiency of the steam jet. By the annular form the extent of surface contact between the steam and the air is greatly increased and the quantity of air delivered very much augmented in proportion to the quantity of steam employed. The combined jet of steam and air is discharged through an expanding pipe of considerable length, in which its velocity is gradually reduced and its momentum accordingly utilized by being converted into pressure.

The result of a comparative trial made in exhausting pneumatic despatch tubes, with the jet and a good steam engine and exhausting pump has been found to be about an equal expenditure of steam in doing the same work, with much less first cost, smaller space occupied and much greater simplicity in favor of the jet.

Another application of the steam jet is to the lifting of water from a moderate depth, by employing the jet to exhaust the air from a closed vessel, in which the water thus rises under the pressure of the atmosphere, the hight of the lift depending upon the size of the jet and the pressure of steam. This discharge from the steam jet being then admitted into the top of the vessel allows the water to escape through a delivery-valve in the bottom, and aids in its expulsion. By using a pair of these vessels in conjunction, and putting the exhaustion jet in communication with each alternately a continuous delivery of water is obtained.

It is also proposed to apply the steam jet for exhausting the vacuum pans employed in sugar boiling, so as to dispense with the present costly vacuum pumps and steam engine, and the condenser for condensing the vapor from the evaporating pan; also for draining the molasses from the sugar, by exhausting the air from below the perforated bottom of a strainer containing the undrained sugar, superseding the present modes of draining by gravitation or by centrifugal strainers. Numerous applications have been made of the jet as a blower for accelerating the distillation of fuel in gas-producers for heating purposes, the jet being admitted into the space below the fire grate, which is enclosed by doors. This admits of the use of the most inferior coal-dust and increases the rate of production of the gas.—*Engineering.*

Relative Merits of Rubber and Leather for Belts.

Rubber will not last one-fourth as long as leather. When once it begins to give out, it is next to impossible to repair it; while wide hands cannot be used for or cut up into narrow ones as leather ones can be.

Leather belts may be used over and over again, and, when of no further value for belts, can be sold for other purposes.

A rubber hand costing hundreds of dollars, may be spoiled in a few moments by the lacing giving out, and the hand running off into the gearing, or by being caught in any manner so as to damage the edge, or by stoppage of either the driving or driven pulley. A few moments of quick motion or friction will roll off the gum from the canvas in such quantities as to spoil the band, while leather belts may be torn or damaged, yet are easily repaired.

Should a rubber or gum belt begin to tear by being caught in the machinery, if the rent strikes the seam, it is most certain to follow it, even the entire length, if the machinery is not stopped. It would be impossible to tear leather in like manner.

Oil in contact with rubber belting will soften the gum; and rubber, gutta percha, and canvas belts will continue to stretch as long as in use, rendering it necessary to shorten them continually.

During freezing weather, if moisture or water finds its way into the seams, or between the different layers of canvas composing these bands, and becomes frozen, the layers are torn apart, and the band is spoiled; or if a pulley becomes frosty, the parts of bands in contact with it will be torn from the canvas and left on the pulley. Also, gum belts will not answer for cross or half cross belts, for shifting belts, cone pulleys, or for any places where belts are liable to slip, as friction destroys them.

A well made leather band, if properly looked after—the width and pulley surface proportional to the amount of work to be done—will last twelve, fifteen, or twenty years, and yet be of value to work over into narrow belts.—*Scientific American.*

Influence of Cold Upon Iron.

M. Caron has brought before the Paris Academy the results of observations made on the fracture of car axles. In every case he finds the break to result from the bad form of the pieces or faulty nature of the iron. He contests the assertion that bar-iron becomes crystalline and brittle under the influence of winter-cold. In order to test the influence of cold on iron, M. Caron experimented as follows: Several pieces of good bar-iron were exposed for four months in the ice factory of M. Teller, at Auteuil, to temperatures varying from 0° to—18°. Others were allowed to remain throughout the cold of last winter at a temperature of about 20° in the open air. M. Caron then caused the pieces to be broken, both in their cold state, and after the temperature had been raised several degrees above zero. In no case was there any appearance of crystallization. Of course, he had assured himself of the good quality of the iron beforehand. Iron of inferior quality acts differently; its brittleness is perceptibly increased through cold. The experiments of M. Caron seem to prove when a bar of iron breaks, through vibration or shocks, and the fracture presents a crystalline appearance, this crystallized state was that in which the iron was previous to its being used; and it is to be attributed to faulty manufacture, not usage or cold after the pieces was completed. From this it follows that the testing of, *e. g.*, 4 or 5 per cent. of a large number of pieces of wrought-iron does not supply a proper guarantee of the good quality of the remaining pieces, and various treatment of them as regards temperature and other points.

PORTABLE RAILWAY FOR COMMON ROADS.—This invention of Mr. W. Pidding is thus rather indefinitely described by the London *Mining Journal*. The carriage wheels, which are only about 21 inches in diameter, and are fixed to the axle beneath the springs in the ordinary way, run upon what may be popularly described as the insides of the tires of a second pair of wheels of sufficient size to permit the small wheels to rotate between the tires and the naves of the larger ones. This larger tire, which forms the portable railway, is made up of a series of long and short segments, each carefully shod with india-rubber, or which may be constructed of steel, formed into a band chain, one or another portion of which is, of course, always in a position ready to receive the running wheel; the portion which has served the purpose of a tramway as constantly passing around the periphery of the large wheel to regain its position in front of the running wheel. The external appearance of the carriage is not altered.

LIQUID FUEL.—Parties who have charge of the liquid fuel process at St. Louis are pushing it before the public with commendible energy. The process consists of decomposing water, setting free the hydrogen and oxygen which are united with combustible liquids, as petroleum, producing great light and intense heat. A great deal is claimed for this process for illuminating purposes, and it is applied to quite an extent in the manufacture of iron at the Leclede mills. By means of it a puddling furnace is heated in forty minutes and a thousand pound charge of iron melted in fifteen minutes, being twice the amount of work done by ordinary furnaces, and making iron of the best quality.

TAKING THE WARP OUT OF SHEET-IRON.—This may be done by means of hammer, anvil, and principally an able workman who knows how to do it. Those working in metal have often cases in which there is a warp in a sheet of iron, brass, or other metal, and if the workman understands his business, he knows how to hammer it out. Those not expert in this art do not know where to strike, and only make it worse.

TWENTY-INCH SMOOTH-BORE GUN.—Mr. Grasshof, manager of the Perm Works, Russia, has succeeded in turning out a 20-inch smooth-bore gun which has given good satisfaction in the trial experiments. The Russian government has ordered the casting of others.

THE LONDON *Mining World* thinks that "before the lapse of another generation the United States will be the great iron and steel producing country of the world." It observes that "there are causes in operation which will prevent any rapid expansion of the iron industry of this country, while in the other the great resources of that industry are comparatively untouched. Among these causes may be mentioned the limited supply of good ores in Great Britain, the necessity which arises each year of sinking deeper for the fuel to smelt them, and consequently the increased expense of raising it.

THE earliest incorporated mining company of which we have any knowledge, in the United States, was in Connecticut, and was chartered in 1709; its proclaimed purpose was, the working of copper ores in that State.

COMPRESSED-AIR machinery is rapidly finding application in German mines for the use of pumping, drawing stuff, rock-boring, and coal-cutting.

TWENTY-FIVE miles an hour is shown by signal service observation, to be the average velocity of a storm; when it has twice that velocity it becomes a tornado.

MINING SHAREHOLDERS' DIRECTORY—Meetings, Assessments and Dividends.

[Compiled Weekly from Advertisements in Mining and Scientific Press and other S. F. Journals.]

ASSESSMENTS.

Name of Co.	Location.	Secretary.	Office in S. F.	Assm't.	Levied.	Delinq't.	Sale Day.
Adams Hill C. M. Co.	Eureka Dist.	W. W. Traylor.	419 Cal. St.	25.	Aug. 9.	Sept. 12.	Oct. 2.
Alpe M. Co.	Ely Dist.	Chas. S. Neal.	419 Cal. St.	50.	June 18.	July 26.	Aug. 19.
Arizona & Utah M. Co.	Washoe	O. H. Fish.	419 Ca . St.	$1 00.	Aug. 14.	Sept 17.	Oct. 7.
Arkansas M. Co.	Ely Dist. Nev.	Geo. Davidson.	734 Mont'gry St.	25.	July 23.	Aug. 30.	Sept. 23.
Baltimore American.	Gold Hill, Nev.	J. L. King.	411 Cal. St.	$1 00.	July 13.	Sept. 2.	Sept. 20.
Beach & Paxton.	Storey Co., Nev.	Ed. Landers.	507 Mont'g St.	50.	Aug. 6.	Sept. 10.	Sept. 30.
Bellevue M. Co.	Flavier Co.	J. F. Cronice.	409 Cal. St.	50.	June 20.	July 29.	Aug. 19.
Bowery Cone.	Ely Dist., Nev.	Chas. E. Elliot.	419 Cal. St.	75	June 15.	Aug. 15.	Sep. 9.
Corona Cons. M. Co.	Eureka Dist.	T. F. Cronice.	409 Cal. St.	10.	June 25.	July 31.	Aug. 22. *
Daney M. Co.	Lyon Co., Nev.	Geo. R. Spinney.	320 Cal St.	75.	July 3.	Aug. 6.	Aug. 26.
Diamond S. M. Co.	White Pine.	W. H. Codrington.	402 Montgomery.	15.	June 29.	Aug. 1.	Aug. 20.
El Dorado M. Co.	Amador Co. Cal.	E. McFadden.	Cal. & Mont'gry St.	25.	Aug. 5.	Sept. 10.	Sept. 30
Empire M. Co.	Grass Valley.	S. Pinkham.	401 Cal. St.	$10.	July 22.	Aug. 24.	Sept. 17
Empire M. Co.	I. T	C. F Balcom.	426 Mont'gry St.	50.	Aug. 5.	Sept 6.	Sept. 30.
Empire M. Co.	Gold Hill, Nev.	W. E. Dean.	419 Cal. St.	50.	July 10.	Aug. 13.	Sept 2.
Excelsior M. Co.	Copo Dist., Nev.	Frank Swift.	415 Mont'gry.	$2 00.	June 21.	July 27.	Aug. 19.*
Exchequer M. Co.	Gold Hill, Nev.	D. T. Bagley	401 Cal. St.	$3 00.	June 26.	July 31.	Aug. 22.
Gil is G. M Co.	Tuolumne Co.,	Dani l Buck.	331 Mont'gry St.	10.	July 20.	Aug. 19.	Sept. 20.
Golden Chariot M. Co.	Idaho.	Louis Kaplan.	Merchants' Ex.	$2 20.	June 22.	July 28.	Aug. 17.
Gould & Curry S. M. Co.	Washoe.	A. K. Durbrow.	Merchants' Ex.	$15.	Aug. 8.	Sept. 12.	Oct. 2.
Greenhorn G M. Co.	Grass Valley.	J. F. Leighner.	438 Cal. St.	$1 50	Aug. 9.	Sept. 11.	Sept. 30.
Hermes M. oC.	Ely Dist.	B. B. Minor.	411½ Cal. St.	$1 00.	July 13.	Aug. 19.	Sep . 14.
Hudson G. M. Co.	Plumas Co., Cal.	J. L. King.	411 Cal. St.	10.	June 18.	July 27.	Aug. 24.*
Ingomar S. M. Co.	Ely Dist.	C. S. Neal.	419 Cal. St.	50.	Aug. 2.	Sept. 18.	Oct. 10.
Ivanhoe S. M. Co.	Ely Dist.	Daniel Buck.	331 Mont. St.	50.	Aug. 10.	Sept. 10.	Oct. 8.
Kincaid Flat M. Co.	Tuolumne Co.	R. H. Cornell.	224 Clay st.	$3 00.	July 17.	Aug. 23.	Sept. 14.*
Kentucky M. Co.	Ely Dist., Nev.	J. P. Cavallier.	509 al. St.	50.	July 2.	Aug. 10.	Aug. 31.
Lane & Kurtz M. Co.	Brit. Colu ia.	B. B. Minor.	411½ Cal. St.	$5 00.	July 23.	Aug. 26.	Sept. 14.
Lemon M. & M. Co.	Eureka Dist.	I. T. Millikin.	608 Merchant.	$1 00.	May 29.	July 6.	Aug. 2.*
Mammoth S. M. Co.	White Pine.	L. L. King.	411 Cal. St.	10.	June 27.	Aug. 1.	Aug. 27.
Marcelina S. M. Co.	Eureka Dist.	Chas. E. Elliot.	419 Cal. St.	30.	July 24.	Sept. 9.	Sept. 30. *
Morning Star M. Co.	Alpine Co., Cal.	O. H. Bogart.	Merchants' Ex.	$1 00.	July 12.	Aug. 20.	Sept. 14.*
Mina Rica M. Co.	Placer Co.	Geo. R. Spinney.	320 Cal. St.	20.	Aug. 6.	Sept. 10.	Sept. 30.*
M. Jefferson M. M. Co	Tuolumne Co.	J. W. Clark.	418 Cal. St.	10.	July 25.	Aug. 26.	Sept. 16 *
National M. Co.	Nevada Co. Nev.	B. B. Minor.	411½ Cal. St.	50.	July 4.	Aug. 9.	Sept. 14.
Nevada L. and M. Co.	Elko Co., Nev.	Wm. H. Watson.	302 Montgomery.	8.	July 18.	Aug. 31.	Sept. 19.*
Newa k M. Co.	Ely Dist., Nev.	D. T. Bagley.	401 Cal. St.	50.	June 12.	July 22.	Aug. 17.
Noonday S. M. Co.	White Pine.	Chas. H. Fish.	419 Cal. St.	25.	July 2.	Aug. 5.	Aug. 26.
Norman S. M. Co.	Amador Co. Cal.	Wm. H. Watson.	302 Montgomery.	5.	June 27.	Aug. 1.	Aug. 22.*
Overman S. M. Co.	Virginia, Nev.	Jos. Marks.	Merchants' Ex.	$5 00.	July 17.	Aug. 21.	Sept. 11.
Pacific Borax Co.	Nevada.	R. B. Noyes.	Merchants' Ex.	15.	Aug. 9.	Sept. 16.	Oct. 8.
Page & Panaca S. M. Co.	Ely Dist.	L. Kaufman.	Merchants' Ex.	$5 00.	June 5.	July 18.	Aug. 17.
Pennsylvania.	White Pine.	Daniel Buck.	331 Mont'ry.	$1 20.	Aug. 9.	Sept. 9.	Aug. 30.
Phœnix S. M. Co.	Eureka, Nev.	Chas. H. Fish.	419 Cal. St.	$1 00.	July 6.	Aug. 12.	Oct. 5.
Piermont M. & M. Co.	White Pine.	J. W. Clark.	418 Cal. St.	60.	July 10.	Aug. 12.	Sept. 2.
Pioche Ex. Co.	Ely District.	T. W. Colburn.	419 Cal. St.	30.	July 15.	Aug. 22.	Sept. 10.*
Potomac S. M. Co.	Nye Co., Nev.	M. Lynch.	316 Cal. St.	50.	June 6.	July 15.	Aug. 16.
Rising Star M. Co	Idaho.	Wm. Willis.	419 Cal. St.	$1 00.	Aug. 10.	Sept. 13.	Oct. 4.
Sapphire S. M. Co.	Gold Hill, Nev.	J. F. Lightner.	438 Cal. St.	30.	July 16.	Aug. 17.	Sept. 6.
Sentinel S. M. Co.	Nevada.	T. B. Wingard.	3 8 Cal. St.	25.	July 6.	Aug. 10.	Aug. 30.
Sierra Bench Gold Hill.	Gold Hill, Nev.	David Wilder.	Merchants' Ex.	25.	June 28.	Aug. 3.	Aug. 26.
Spring Mt. Tunnel.	Ely Dist., Nev.		419 Cal. St.	30.	July 9.	Aug. 16.	Sept. 7.*
Star Cone. M. Co.	Eureka Dist.	G. R. Spinney.	320 Cal. St.	25.	June 20.	July 29.	Aug. 20.
Sterling M. Co.	Ely Dist., Nev.	H. C. Kibbe.	419 Cal. St.	50.	July 15.	Aug. 21.	Sept. 12.
St. Louis M. Co.	Placer Co., Cal.	T. F. Cronice.	409 Cal. St.	$1 00.	July 26.	Aug. 6.	Aug. 19.
St. Patrick M. Co.	Placer Co. Cal.	D. A. Jennings.	401 Cal. St.	$3 00.	June 19.	July 27.	Aug. 19.
Tecumseh G. S. & M. Co.	Calaveras Co.	F. J. Hermann.	634 Wash'n St.	15.	Aug. 9.	Sept. 12.	Oct. 7.
Tellurium G. & S. M.	Amador Co, Cal.	Wm. H. Soery.	K'ny & Clay.	$1 00.	July 22.	Aug. 23.	Sept. 16.
Tehama Cons.	Schell Creek.	W. W. Stetson.	414 C l. St.	$2.00.	Aug. 2.	Sept. 14.	Oct. 5.
Union Co.	Sierra Co., Cal.	A. K. Durbrow.	Merchants' Ex.	$1 00.	June 25.	July 29.	Aug. 19.*
Union Hill Cons. M. Co.	Eureka Dist.	B. M. Gunn.	Merchants' Ex.	20.	Aug. 7.	Sept 10.	Sept. 30.
Victoria & Imp. M. Co.	Utah T.	Wm. H. Watson.	302 Mont'gry St.	10.	Aug. 14.	Sept. 18.	Oct. 12*
Wm. Penn Cone.	Nevada.	J. F. Pope.	6 Mont'gry St.	10.	July 3.	Aug. 5.	Sept. 2.*
Winnemucca Chief.	Nevada.	T. F. Cronice.	409 Cal. St.	15.	June 19.	July 30.	Aug. 20.*
Yule Gravel M. Co.	Placer Co. Cal.	W. H. Watson.	302 Mont'gry St.	25.	Aug. 3.	Sept. 5.	Sept. 15.

MEETINGS TO BE HELD.

Name of Co.	Location.	Secretary.	Office in S. F.	An'l or Sp'l.	Date.
Alabama & Humb'dt M. Co.		W. H. Watson,	302 Montgomery St.	Annual.	Aug. 17.
Alhambra Hill M. Co.	White Pine, Nev.	B. G. Langley.	612 Clay St.	Special.	Aug. 19.*
Caledonia S. M. Co.	Nevada.	R. Wegener.	414 Cal. St.	Annual.	Aug. 21.
Columbus M. Co.		A. Noel.	419 Cal. St.	Annual.	Aug. 19.
Lauphin M. Co.		C. F. Balcom.	426 Montgomery St.	Annual.	Aug. 24.
Europa M. Co.		R. B. Noyes.	Merchants' Ex.	Annual.	Aug. 22.
Hartford M. Co.		C. H. Fish.	419 Cal. St.	Annual.	Sept. 2
Home Ticket S. M. Co.		C. F Balcom.	426 Montgomery St.	Annual,	Aug. 19.
Impertrice Eugenia		G. Berson	712 Market St.	Special.	Aug. 26
Louisville Con. G. S. M.		Jos. S. King.	411 Cal. St.	Annual.	Aug. 19.
Meadow Valley M. Co.	Ely Dist.	T. W Colburn.	419 Cal. St.	Annual.	Aug. 22.
Oakville Quicksilver M. Co.	Napa Co.	W. H. Mott.	432 Mont'g St.	Annual.	Aug. 21.
Occidental M. Co.	Washoe	C. E. Elliot.	419 California St.	Annual.	Aug. 17.
Pennsylvania S. M. A.		Frank Swift.	415 Montgomery St.	Annual.	Aug. 21.
Peter Walter M. Co.		T. J. Owen.	Express Building.	Annual.	Aug. 19.
Providence M. Co.		W. H. Knight.	331 Montgomery St.	Annual.	Aug. 24.
Revenue Cone S. M. Co.	Arizona.	L. B. Edwards.	535 Cal. St.	Annual.	Aug. 10.
Segregated Caledonia		A. C. Ryce.	308 Cal. St.	Annual.	Aug. 29.
Senator S. M. Co.	Nevada.	T. B. Wingard.	318 Cal. St.	Annual.	Aug. 20.
Ward Beecher Cons. M. Co.	White Pine.	D. A. Jennings.	401 Cal. St.	Annual.	Aug. 20.

LATEST DIVIDENDS—Within Three Months.

Name of Co.	Location.	Secretary.	Office in S. F.	Amount.	Payable.
Belcher M. Co.	Washoe.	H. C. Kibbe.	419 California St.	$3.00	Aug. 10.
Black Diamond Coal Co.	California.			½ per cent,	June 28.
Crown Point G. & S. M. Co.	Washoe.	C. E. Elliot.	419 California St.	$3 00.	July 8.
Eastport Coos Bay Coal.	Oregon.	I. L. Pool.	Merchants' Ex.	$5 00.	Aug. 12.
Keystone Quartz M. Co.	California.	L. Vecaria.		10.	July 10.
Mahogany G. & S. M. Co.	Idaho.	T. J. Owens,	402 Mont'gry, St.	$1 50.	Aug. 7.
Meadow Valley M. Co.	Ely Dist., Nev.	T. W. Colburn.	419 California St.	$1 00.	June 20.
Raymond & Ely M. Co.	Ely Dist., Nev.	A. J Moulder.	419 California St.	$7 00.	Aug. 10.
Pioche S. M Co.	Ely Dist., Nev.	C. E. Elliot.	419 California St.	$1 00.	Aug. 10.

—* Advertised in this journal.

STOCK SALES FOR WEEK ENDING AUG. 15—S. F. Stock and Exchange Board.

NAMES OF COMPANIES.	Feet in Mine.	Shs. in ft.	Total Shs.	FRIDAY. Shs	Prices.	SATURDAY. Shs	Prices.	MONDAY. Shs	Prices.	TUESDAY. Shs	Prices.	WEDNESD'Y Shs	Prices.	THURSDAY. Shs	Prices.
Alpha.....*	300	20	6000	90	62 @63	...	.....	20	63	15	62	10	60	115	57 @58
Apex.....§	800	37½	30000	535	4½@ 4½	...	.....	300	4	200	4	...	.....	150	4
American Flag..§	2,600	11½	30000	295	20½@21	310	20¾@20½	125	20½@20¾	130	20¾@20½	420	20¾@21	515	20 @20¾
Arizona & Utah.*	1,100	1½	8000	...	.....	...	.....	255	1¾@ 2	50	1¾	100	1⅞	50	1½
Belcher.....*	1,040	10	10400	575	119 @123	290	118 @122	250	120 @128	745	129 @137	455	129 @131	350	125 @131
Baltimore.....*	1,200	20	24000	220	3¾@ 3⅞	250	3⅞	350	4½@ 4¾	700	4½@ 4¾	710	4¾@ 4½	300	4¾
Bowery.....§	1,000	30	30000	...	.....	...	.....	...	.....	100	2¾	200	2½@ 2¾	50	2½
Bacon.....	.....	.....	5000	...	.....	...	.....	3500	.....	...	.....	10	47½	...	.....
Buckeye.....*	.....	.....	16000	375	3½	60	3¼	100	3½	...	.....	30	3½	...	.....
Chollar.....*	2,800	10	28000	365	92 @96	330	87½@91	355	89 @90	585	87 @92½	270	84 @88	215	84½@87
Caledonia.....§	5,000	14	70000	30	65 @66	85	62½@63	625	9 @172	1095	65 @70	1017	57 @63	265	56 @59
Cone. Virginia.*	1,160	20¾	23600	...	.....	145	83 @84	475	83 @84	1068	41 @44	1138	36½@41	140	36 @38
Confidence.....*	130	192	24960	640	13½@13¾	585	12¾@12½	1030	13 @13¾	310	13 @13¾	250	12½	...	.....
Crown Point...*	600	166⅔	100000	630	137 @150	350	140 @144	640	140 @147	505	146 @152	300	140 @148	100	134½@137
Central.....	70	357	2 000	...	.....	...	.....	...	.....	80	11 @12	...	.....	10	10
Calaveras.....‡	3,200	6¼	20000	...	.....	...	.....	...	.....	...	.....	10	47½	...	.....
Condor.....	.....	.....	.....	525	3	400	2⅝@ 3	375	2⅝@ 3⅛	...	.....	500	2⅛@ 2⅞	400	2⅜@ 2⅝
Dancy.....§	2,000	12	24000	10	2½	...	.....	...	.....	79	2⅛@ 2½	...	.....	275	2⅛@ 2½
Eureka Cone...*	.....	.....	5000	1250	22 @23	770	22 @22¾	44	22½@23¼	550	22¾@23	615	23 @23½	510	23 @23½
Eureka.....*	1,650	12	2000	20	16¾	...	.....	...	.....	...	.....	...	.....	...	.....
Exchequer.....	400	20	8000	...	.....	...	.....	180	21 @22	95	21 @21½	5	21	50	20
Eclipse.....	70	357	25000	5	10 16½@18	140	16½@17	370	17¾@17¾	665	17¾@18	480	15 @16	1020	15 @16⅞
Empire Mill.....*	75	16	1200	15	15½@16	320	16 @16¼	135	16⅞@17	225	17¼@18	885	14½@16	705	14⅜@15½
Exchequer.....	4,500	2½	12 00	275	12⅝@13	800	12	150	12 @12½	400	13	20	13 @13½	525	13¼@13⅜
Gould & Curry..*	1,200	4	480	125	175 @180	5	176	...	.....	62	177½@186	15	178 @179	20	176@178½
Golden Chariot.*	700	1⅜	1000	10	1	...	.....	60	103¾	...	.....	90	10½	30	10½
Globe.....	1,600	12½	20000	...	.....	...	.....	100	2	...	.....	...	.....	275	2 @2½
Hale & Norcross*	400	40	16000	95	84 @86	190	81½@83	390	83 @88	195	86 @89	240	82 @84	80	81 @81½
Hunn & Hunt...§	3,600	8⅓	30000	1100	3½@ 3⅝	650	3½@ 3⅝	40	3½@ 3½	690	3½@ 3¼	...	.....	20	3
Ida Elmore.....§	1,300	17½	10000	20	16¾	...	.....	35	16¾@17	150	16 @17	...	.....	...	.....
Imperial.....	184	543	00000	1275	13⅝@14⅜	1640	12⅞@13	450	14 @14¾	720	13¾@14	1920	12½@13½	795	12¾@13½
Ingomar.....	1,600	40	40000	400	1⅜@ 1⅝	300	1⅜	200	1⅜@ 1⅝	150	1½@ 1⅝	250	1⅞@ 2¼	500	1½
Julia.....	2,000	15	30000	215	5½@ 6	85	5½@ 5¾	...	.....	30	5	190	5 @ 5¼	175	5⅞
Justice.....	3,000	7	2100	125	15⅝@16¾	465	15 @15½	240	14½@15¼	20	15	130	14 @14½	161	13½@14
Kentuck.....	85	21	2000	20	2½	10	285	...	.....	15	300	16	300	...	.....
Knickerbocker.*	1,200	20	24000	540	8¾@ 9	505	8⅝@9	1045	9 @ 9¼	510	8¾@ 9	330	8¾@ 9	510	8 @ 8½
Mammoth.....	1,800	20	36000	...	.....	100	60	...	.....	...	.....	...	.....	...	.....
Meadow Valley.§	24,023	2½	60000	545	15¾@16	420	15⅞@16	1105	16 @16½	2585	17 @19	3430	19 @20	2010	18½@20
Mahogany.....	72	13⅓	10000	150	14¾	16	15¾@16	35	15¾@15¾	650	15 @15¾	160	13¾@15	380	13 @13½
Ophir.....	1,400	12	16000	650	40 @42	60	40 @41	130	42 @45	270	44 @46	50	41½@42½	10	40
O. H. Treasure..§	800	26⅔	24333	50	6¾	185	6 @ 6¾	90	6 @ 6½	30	8¾@ 5½	10	...	53	5
Overman.....	1,2 0	16⅔	12800	202	80 @87½	184	81 @83	145	84 @85	110	85 @87	50	84 @86	160	80 @85
Occidental.....*	800	12½	10000	...	.....	...	.....	...	.....	...	.....	...	.....	...	.....
Pioche.....§	1,000	20	20000	320	28¼@28¾	320	28 @28	155	28¼@28¾	320	28 @30	160	27½@28	180	26 @27
Page & Panaca..§	2,4 0	16⅔	40000	37	2¾	...	.....	250	2¾	450	2¾	...	.....	...	.....
Phœnix.....	.....	.....	50000	810	4¾@ 5	620	4¾@ 5	450	5¾	360	4¾@ 4¾	275	4¾@ 4¾	160	4¾@ 4¾
Raymond & Ely.§	4,000	7½	30000	370	155 @156	320	147 @150	485	148 @155	410	153 @161	305	156@160	255	156@162
Savage.....	800	20	160 0	680	155 @156	95	152 @155	165	148 @155	145	148 @153	230	13 @147	172	130@140
Seg. Belcher..*	160	40	64 0	45	122 @126	465	118 @120	...	.....	200	24½@128	5	125	15	125
Sierra Nevada..§	3,000	7½	20000	50	15⅜@15¾	100	15¾@15¾	150	16	285	16¾@16½	20	16	433	1½@16
Succor.....	7,600	3	22800	100	4¾	...	.....	...	.....	330	4¾@ 4½	...	.....	140	4⅜
St. Patrick.....‡	1,800	13⅓	2000	...	.....	...	.....	...	.....	...	.....	...	.....	...	.....
South Chariot..§	6600	30½	20000	1100	2 @ 2½	700	2 @ 2¼	475	2 @ 2½	...	.....	110	2½	395	2
Trench.....	20	250	50000	950	21 @22	...	.....	315	21 @22	50	2¾	25	20	40	18
Wash. & Creole.§	200	10	3000	150	4¾@ 4¾	...	.....	50	4¾@ 4¾	500	4¾	...	.....	75	5
Yellow Jacket..*	1,200	20	24000	355	142 @150	75	140	295	142 @147	85	146 @148	200	143@148	20	142
Yule Gravel.....‡	400	25	10000	...	.....	...	.....	...	.....	...	.....	...	.....	...	.....

NOTES.—†—California. *—Washoe. ‡—White Pine. §—Ely District. ¶—Eureka District. ‖—Idaho. ⊥—Nearly. &—Over.

S. F. Stock and Exchange Board.

Thursday, August 15, 1872.

The stock market has been quiet of late. The sales at the Board for the week ending the 8th inst., amounted to $2,610,000. On the 9th inst. the market was weak and continued so the following day. Monday it wae quite strong again; Tuesday it wae still improving at advanced prices, but Wedneeday prices fell off for all descriptions. This morning the market was again weak and stocks were in light demand.

Shipment from Pioche on the 13th, $10,163. The last weekly clean up at the Eureka mine, was 625 ounces of amalgam from 15 stamps. The Eureka Consolidated mine turned out last week 900 tons of ore; reduced 862 tons; ore on hand 1,431½ tons.

The sum of $33,946 was shipped from the Raymond & Ely on the 12th inst., which, added to previous shipments for month—$103,794—makes a total of $137,740 for twelve days, or at the rate of $11,479.33 per day. The Hale & Norcross mine last week extracted 700 tons of ore, and shipped to mill 1,018 tons. The Savage yielded 1,215 tons, and delivered at the mills 1,152 tons; ore averaged by assay $22.14.

The Sierra Nevada turned out 483 tons; 1,580 tons of ore worked in July, yielded $9,826. The Phenix mine shipped on the 8th inst., 10 tons of hullion valued at $4,000, and on the 11th inst., five tons valued at 2,036. From the Kentuck $3,913.88 was shipped on the 6th inst.; ore shipped in July, 1,271 tons, averaging $23.39 per ton. From the Chollar-Potosi miue last week, 1,726 tons, averaging $37.20 per ton, wae extracted and shipped to mille.

The Minnesota, on the 8th inst., cleaned up $5,584. The Buckeye mine shipped $1,840 ou the 10th inst.

News from the minee later thau given in our mining summary is unimportant. The connection between the 1,100-foot level aud the shaft in the Belcher, has made an improvemeut in the ventilation of the mine. The shaft of tho Belcher, 850 feet deep, is 715 feot from the Crown Point mine, from which the 1,100-foot level was driven south to meet an incline from the hottom of the shaft. This iuchne at 521 feet meete the drift, and, hy so doing, ventilates the Belcher and the Crown Point, also the Kentuck and Yellow Jacket, which are all connected in that drift, which has served for the transportation of the Belcher ore to he hoisted by the Yellow Jacket. The Belcher shaft will he ready to hoist ore ehortly, and the ventilatiou will enable double the ore to he got out. This increased quantity will he hoisted from both shafts, Belcher and Yellow Jacket. The water having heen mastered in the Crown Point, work on the 1,200-foot level has been reeumed and the bulkheads have heen removed from the 1,300-foot level. A letter from the mill master of the Raymond & Ely mine states:

"There are thoueands of tons of ore assayiug $50@100, which ie not taken out for want of mill capacity; but, at au expense of $6,000 or $7,000, hy adding two new pane, etc., and changing the new mill from dry to wet crushing, we can increaee the reduction thirty tons per day with the same amount of lahor, and without any loss of time." Thie has heen authorized to be done, and it ie expected, more ore being reduced, the dividend may he raised. The dividende from mining companiee this month aggregate $557,000. The Belcher dividend amounted to $312,000; the Raymond & Ely $210,000; the Pioche $20,000 and the Mahogany $15,000. The sum of $65,000 was carried over to August account of the Raymond & Ely mine, so the dividend was not increased as anticipated. The Meadow Valley & Crown Point both passed their usual dividends; the latter will pay $5 next month. The Yule Gravel mine which has heen paying dividends heretofore, hae fallen from grace and levied an assessment this month.

Assessments levied this month aro as follows: El Dorado M. Co., Amador Co., 25c.; Empire M. Co., Idaho., 50c.; Mina Rica M. Co., Placer Co., 20c.; Tehama Cous. M. Co., Schell Creek, $2.00; Yule Gravel M. Co., Placer Co., 25c.; Greenhorn M. Co., Cal., $1.50; Ingomar S. M. Co., Ely District, 50c.; Rising Star M. Co., Idaho, $1; Ivanhoe S. M. Co., Ely Dist., 50c.; Adams Hill Cons. M. Co., Eureka Dist., 25c., Union Cons. M. Co., Washoe, 50c.; Original Hidden Treasnre M. Co., White Pine, $1.50: Gould & Curry S. M. Co., Washoe, $15; Arizona & Utah M. Co., Washoe, $1; Page & Panaca S. M. Co., Ely Dist., $5; Tecumseh G. & S. M. Co., Calaveras Co.

Twelve Hunnren Gallons per minute is the estimated capacity of the Goodwin mining pump at the Miners' Foundry in this city, which was illustrated in our issue of August 3d.

Mining Sale.—The Quincy *National* saye that the Eherle Bros., of Secret Diggings, recently disposed of their gravel claims at that place for $35,000.

Mining Summary.

The following ie mostly oond nsed from journals published in the interior, in proximity to the mines mentioned.

California.

AMADOR COUNTY.

Kennedy.—Jackson *Ledger*, Aug. 10: This mine cleaned up last Saturday, after a 15 days' run, $10,600. The rock on the lower level is lookiug very fine, and the vein is also wideniug. The mill is kept runniug day and night.

Copper.—Jackson *Dispatch*, Aug. 10: Morgan commenced work this week ou a copper mine, a few miles below Ione City, which has been lying idle for several years.

BUTTE COUNTY.

Lowell Hill Mines.—Chico *Enterprise*, Aug. 9: Four shafts have been sunk upon the claims, and more satisfactory prospects have heen made in all. From the surface to withiu 4 ft. of the bed rock from 3 to 10 colors of gold can be had to every panful of dirt, and from within 4 ft. of the bed rock, from 12½c. to $1.50 has been repeatedly washed from a single panful of dirt.

CALAVERAS COUNTY.

Upper County.—Calaveras *Chronicle*, Aug. 9: Excellent ore has heen exposed at the Josephine, west of West Point ... Morse & Co. are crnshing a large quantity of rock at Carltou's mill .... A new tunnel has been started at Camp Spirito to tap an abaudoned vein below water level.... The north level of the Bartolo shows a vein 2 ft. wide, with plenty of visihle gold; somo 40 tons of ore on dump.... Levels have beeu started in the Blazing Star at 115 ft.... S. Smith & Co. are crnshing rock from their recent discovery uear Mosquito; the vein is large and the ore is expected to average $15 per ton .... A 5-stamp hattery will be added to the new hoisting works of the Wolverine; 120 tone of high grade ore on the dump of the main ehaft .... The Sanderson has stopped operations.

The battery at the State of Maine has beeu in operation duriug the last week.

New Hoisting Works. — The Wolverine, Railroad Flat, is to he supplied with uew and powerful machiuery.

San Bruno.—The tunnel heing run will be completed in less than 2 months. It will cut the ledge 500 ft. from the enrface.

Hoisting Works.—The Hughee Broe., who own a claim on the Blue lead below the What Cheer in Chili Gulch, are puttiug up hoisting works.

Gwin Mine.—Sinking the south shaft was resumed last Monday. The rock is excellent. The central shaft hae reached 150 ft. and ie going down at the rate of over a ft. a day; 16 stamps are kept running.

Railroad.—San Andreas *Citizen*, Aug. 10: The Sauderson shaft is down 50 ft. The ore on both sides shows heautifully. They have placed steam hoisting works on the claim.

Prussian Hill has a shaft 150 ft. deep. The lode is 8 ft. wide, 3½ of which prospects $50 per ton, and the remainder, including the casing, $15.

Sheep Ranch Mine.—This mine is paying hetter than ever heforo.

Right Bower is working 10 men, and the rock is paying about $70 per ton.

Wolverine.—The shaft down ou this claim ie 220 ft., the width of the lode averagee 3 ft. This Co. have about 100 tons at their dump that will average $100 per ton. They have machinery on the way from S. F. for steam hoisting works, and then will go down 200 ft. deeper.

Petticoat.—Thie mine is thriving, the mill running day and night. The Supt. will make a good clean up next week.

EL DORADO COUNTY.

Hogo's Digginos.—Folsom *Telegraph*, Aug. 10: The quartz mines at Hogg's Diggings, near Pilot Hill, are turning out large quantities of rich rock.

NEVADA COUNTY.

Hope.—Grass Valley *Union*, Aug. 11: Tho clean up yesterday, after a run of 8 days gave 248 ozs. of gold, worth $17 an oz. The expenses for the same time is uot much over $500.

Rising Star.—Nevada *Transcript*, Aug. 8: The Co. who recently purchased the Mammoth, Grizzly and prospect miues, and consolidated them under the name of the Rising Star, have been vigorously prosecuting the work, and everything looks flattering. They have struck a 3 ft. ledge in the face of the old Grizzly tunnel, which it is thought will pay form $20 to $30 per ton. The old tuuuel in the Mammoth, ruu about 200 ft., is heing extended aud they expect to cut the ledge in running abont 90 ft. further. Another old tunuel ruu 449 ft. has been thoroughly repaired and tho new Co. have extended it about 30 feet, aud are still runuing ahead.

PLACER COUNTY.

Encouraging.—Anburu *Stars and Stripes*, Aug. 8: The reports from the quartz mines of this vicinity continue to he highly encouraging. At the St. Patrick and Greene the latest discoveries of ore deposits are quite rich. The pay ledge in the Salsig and in the Auburn, Rock Creek, steadily widen and improve in quality as they descend. The ledge of the Columhia Co. in El Dorado county, ie fully 4 ft. wide, with a pay streak over a foot wide that is reliable for $40 per ton hy milling process. Neff, Taylor and others, on the third extension of the Salsig, at a point on the eastern slope of the big hill have struck a continnation of the Salsig, with fine looking rock and a froquent showing of free gold within a few feet of the surface.

PLUMAS COUNTY.

Big Pay.—Quincy *National*, Aug. 10: Gard & Orr, at La Porte, have recently cleaned up their season's run, and made $20,000 clear of expenses.

SAN DIEGO COUNTY.

The Mines.—San Diego *Union*, Aug. 1: The Stonewall now 10-stamp mill started up day before yesterday. Defrees mill at Julian is running on Owens ore. Work is steadily going on on all the ledges. The McMechan mill in the San Felipe Cañon will start up on Monday on Golden Chariot rock. The Antelope will start about the same time.

SISKIYOU COUNTY.

Paying.—Yreka *Union*, Aug. 3: The claims on the East Fork of Scott river are paying better this season than ever before.

TUOLUMNE COUNTY.

Table Mt.—Sonoma *Independent*, Aug. 10: The Table Mt. Co. are going to work in 3 or 4 places on a large scale.

The Boston Co. have a good portion to work on the "front lead" before commencing on the "back lead."

Nevada.

ELKO COUNTY.

Pennsylvania.—Elko *Independent*, Aug. 10: The shaft being sunk is passing through another strata of superior ore. They are down 20 ft. on this new discovery without getting through it. it.

EUREKA DISTRICT.

In Operation.—Eureka *Sentinel*, Aug 8: The new furnace of the Silver West Co. has been in operation for a day or two.

New Furnace.—Supt. Daugherty is vigorously pushing matters connected with the erection of the new furnace for the Ruby Hill Cons. It is intended to have the works in active operation by the first of October.

Geddes & Bertrand.—This mine at Secret Cañon has several hundred tons of high grade ore on the dump. No. 1 15 stamp mill is to be erected immediately.

Items.—In the Excelsior a few days since an immense chamber of ore was broken into. In the Morris there are 3 shafts, each showing good ore, and about 90 tons are on the dumps. The El Dorado ore runs from $80 to $160 in gold, and from $200 to $300 in silver.

ELY DIST.

Local Review.—Ely *Record*, Aug. 4: Bullion.—During the past week W. F. & Co. have shipped bullion valued at $113,500.64. For the month ending July 31 the same Co. shipped bullion valued at $522,785.84, the heaviest shipment which has yet been made in a single month from this district.

Pioche.—Assays from face of drift on 110 level, and wings on same level have averaged during the past week $283. A great improvement is noticeable in the east drift on the lower level. The stopes continue yielding well. On the 30th ult. shipped bullion valued at $10,286.58.

Condor.—Face of drift looking much better than last week. The ledge shows fully 3 ft. wide, and the galena ore is running out, and chlorides show much more plentiful.

Ivanhoe.—During the past week have struck several stratas of rich ore; at 220 ft. are running a cross-cut to tap the vein.

Stirling.—Sinking shaft and making good progress. Ore in bottom has improved greatly during the week.

Harper.—Indications in bottom of shaft improve daily, broken ledge matter appearing in shaft as depth is attained.

Mocking Bird.—New contract to sink 50 ft. has been let during the week. Shaft has been timbered throughout and new and substantial ladders placed in mine. The ledge continues widening as sunk upon and shows fully 4 ft. in width, the ore showing solid about 2 ft. in width but is somewhat broken in the rest of the ledge, being of honeycomb kind of rock. From present indications a large body of ore will soon be opened up.

Fallis Tunnel.—Work will be resumed in a short time. At present it is in 45 ft.

Maggie.—Work will be started up again in a short time. The shaft is 143 ft. deep, with the ledge showing 3¼ feet wide on the bottom.

Page & Panaca.—The machinery of the new works being in position, steam was put on on Friday last, and everything was found to work smoothly. The shaft is cribbed in a substantial manner, from top to bottom.

Chapman.—Stoping and raising ore continues.

Newark.—Work will be resumed to-morrow.

Chief of the Hill.—Drifting and stoping on second level, and raising ore to surface. Have temporarily suspended work on lower level, having traced out the Burke Tunnel company.

American Flag.—Work of placing machinery in position is going ahead rapidly, and engine will be started up and work in mine resumed in about a week or ten days. The mill continues running steadily.

Newton Booth.—Will resume work in about ten days, and sink the shaft 400 ft. before drifting.

Meadow Valley. — Nos. 7 and 3 shafts continue to yield the usual quantity of ore. No. 5 on Summit shaft, is worked steadily.

Raymond & Ely.—Mine continues looking well throughout, and shipments to mill are daily being increased.

Long Valley Dist.—Only one ledge of considerable magnitude has been found. It shows on the surface 3 inches in width, but on sinking widens out. In one place, at 20 ft. down, the ledge has opened up to 18 inches wide, and prospects very rich.

Bristol Dist.—The National Co. are erecting a smelting furnace of the capacity of 20 tons of bullion every twenty-four hours, which will be completed about the 10th of Sept.

Jolly Traveler.—This mine is about 400 ft. south of the Alps. A shaft has been sunk about 30 ft. Mr. Barber is about letting a contract for sinking 100 ft. more.

HUMBOLDT.

White Cloud Dist.—Unionville *Silver State*, August 10: The Moonta copper mine is looking exceedingly well. The shaft is 75 ft deep, and they are drifting upon the ledge, which is about 3 ft. wide.

REESE RIVER.

Bullion.—Review—Reese River *Reveille*, August 3: The shipment for July, consisted of 51 bars, 5,305 lbs. valued at $74,930.85.

Saybrook.—Reese River—Working in the 150 ft. east level; running 2 shifts; have commenced getting some very good ore.

Saratoga.—Bevelhymer, who has a lease in the 160 ft. west level is getting splendid ore. From the 350 ft. levels large and constantly increasing quantities of highest grade ore is steadily coming out.

Iowa Tunnel.—Foxworthy & Co., are getting good chloride. Johnson & Woods are raising a chute from level No. 1 west; preparatory to hressting out. Graham & Co., are sinking an incline on the ledge from level No. 1, west; now down 50 feet; getting magnificent ore. Briggs & Co., are opening level No. 2. from the main tunnel; getting no ore at present. There is about 15 tons ready for shipment to mill.

South America.—Operations are to be resumed.

Lane & Fuller (Pacific Co).—Mine improving at all points; struck a large body of ruby ore on the Buel North Star ledge this week; 100 tons of ore on hand.

WASHOE.

Bullion.—Reno *Crescent*, August 3: During July there has been shipped coin to the amount of $102,718,.98; bullion from the English Mill, $12,627.53; gold dust, $1,370.00; total $116,-716.51. During the week, 6,509 lbs. passed through W. F. & Co.'s Reno office.

Yellow Jacket.—Local Summary—Gold Hill *News*: Daily yield 20 tons $27 ore from between the 900 and 1,000 ft. levels. The main incline is not being sunk deeper at present, owing to inefficient pumping arrangements. The 1,500-ft. station from the incline is opened and the main drift east from it toward the ledge is in 42 ft. The incline is in the hard west country rock. Last Tuesday a connection was made with the main drift north at the 1,300-ft. level, and the long incline from the 1,100-ft. level, giving splendid ventilation throughout. The main drift is being continued northward exploring for a good body of ore like that in the Imperial. About 300 ft. of this main drift has been completed since the 8th of last month, working at 3 different points.

Woodville.—Work goes on as usual. The result of the last clean-up of the mill, from 80 tons of ore, was $2,600.

Sutro Tunnel.—This tunnel has penetrated 2,995 ft. The rock is very hard in the face, but good progress is made. Work in the various air shafts along the line of the tunnel progresses.

Occidental.—The main tunnel at the lowest level is daily advancing northward as fast as possible. The tunnel is in the ore vein, and the assays show a continual improvement in value.

Jacob Little.—The ledge is found to be over 20 ft. wide and no west wall reached as yet. It shows constant improvement.

Gould & Curry.—The new hoisting engine was started up for the first time yesterday, and works perfectly. Sinking the incline progresses slowly, the rock blasting quite hard.

Hale & Norcross.—Daily yield about 100 tons: Work is stopped in the northern half of this mine on the lowest level. The incline is sunk 120 ft. below the lowest level, and work is going on vigorously.

Ophir.—Sinking the shaft was again resumed on Wednesday. The north drift on the 1,100-ft. level is being pushed ahead with vigor. The west drift on the 700-ft. level is 70 ft. in ledge matter, with occasional streaks and spots that give assays of a low value.

Con. Virginia.—The cross-cuts are in quartz on the 400-ft. level. The assays taken latterly from the new body show a regular average improvement.

Sierra Nevada.—Daily yield 55 tons good milling ore, with improvement in quality. The ore stopes in the upper mine are yielding finely. The ore holds out in the rise from the new body in the middle mine. The breasts on lower level are yielding about the same; and the prospecting drift north is making good headway.

Belcher.—Daily yield 260 tons. The ore breasts are looking finely. The yield for July was 5,000 tons, yielding $65, and amounting to $325,000.

Crown Point.—Daily yield about 300 tons. The water is all drained from the 1,300,ft. level, and as soon as everything is in proper working condition, rich developments may be looked for at that point.

Savage.—Daily yield, 175 tons, worth $27 per ton. The main drift south on the 1,500 to connect with the winze from the 1,400-ft. level progresses. The incline is down 120 ft. and progresses slowly.

Imperial-Empire.—Good ore was found a day or two since in the south drift, at the 1,500-ft. level, and it is being taken out for milling. At the 1,650-ft. level a winze is being sunk in the ore body, and it is drifted upon north 30 ft.

Utah.—The main shaft is sunk over 80 ft. below the old tunnel. Sinking is done very rapidly; the water being pumped out with great facility.

Overman.—The main shaft is down 30 ft. below the 1,100-ft. station. The drift west at the 1,100-ft level is in 525 ft., and the face is in very promising ledge matter.

Chollar-Potosi.—Daily yield 170 tons worth $38 per ton. Repairing the shaft continues with vigor and is nearly completed. The Belvidere, Blue Wing and other ore breasts are yielding the usual amount of ore, and all looking well.

Senator.—Work is dragging along slowly.

Silver Hill.—The pumps are placed in position on Tuesday, and have been in operation since. Sinking of the shaft progresses without interruption.

New York Cons.—A new boiler, engine and pump have been purchased, and will arrive.

Caledonia.—Prospecting in the old mine and at the 400-ft. level. The cross-cut and drift show no good pay ore as yet. At the 700-ft. level the west drift is in about 60 ft.

Knickerbocker.—The shaft is down about 60 ft. below the 400-ft. station, and the bottom is coming into stratas of clay and quartz. Some of the quartz is looking splendidly with spots of good ore in it.

Buckeye.—The ore breasts south of the incline look and yield well, and the sinking of the incline deeper progresses at a satisfactory rate. The bullion product for July footed up to $9,794, the ore averaging over $16 per ton.

Julia.—The shaft is down 890 ft. with a considerable increase of water at the bottom. The boilers of the new hoisting machinery are in place, and the foundation for the engine nearly completed.

Justice.—The old Waller Defeat shaft is yielding some very good paying ore, and the breasts show improvement.

Kentuck.—Daily yield 65 tons.

WHITE PINE.

Mines North of Shelburn.—Schell Creek *Prospect*, Aug. 3: The McMahon Co. is driving work with vigor. Twelve men are employed and will soon be in on an immense body of ore.

The Woodburn is pressing work with 12 men and taking out good ore. A mill will soon be built.

In the Summit they are taking out splendid ore.

In the Jupiter they have 50 tons on dump, and are working 2 men.

On the Hidden Treasure work will be resumed next week.

Neal & Bryant have splendind crops, from 30 to 40 ft. wide, and the ore will assay from $50 to $500 to the ton.

Mary.—They have taken out float, in their progress, which has assayed $1,400 per ton.

Schell Creek Con.—Eight hour shifts continue to run in their great tunnel, now in 160 feet.

Mines of South Shelburn.—Tehama Con. was sold 3 weeks since for $28,500; then one-sixth sold for $87,000; since which, one-twelfth sold for $30,000, or at the rate of $360,000. The company have purchased a 20-stamp mill and have contracted for it to be in running order in 90 days; 2 tunnel are being pressed, one in ore, the other in debris, to obtain greater depth. Besides the work going on in tunnels, men are engaged at 4 different points in taking out pay ore.

The Queen Springs Mines.—On the Great Western 12 men are prosecuting work. Their tunnel is in more than 150 ft. and still progressing. It will cut the vein about 200 ft. below the surface. They are taking out ore from their incline which will pay about $100 to $200 per ton.

Nutmeg.—Some 200 or 300 tons of ore are on the dump.

Centerville Dist.—On the Home Ticket 12 men are working.

Ruby Hill Dist.—For the Birch Co., 4 men are working in an open cut, 20 ft. in, showing a face of ore 20 ft. high. They started their mill on Thursday, and will immediately increase the capacity to ten ton, and will next week put on 15 more men.

Columbia Mine.—Driving work with a tunnel in 100 ft., and showing a fine body of ore.

Ferret.—Pushing work in a cut 20 ft. deep with rich ore at the bottom.

Treasure Hill Mines.—White Pine *News*, Aug. 3: Bullion.—Amount shipped this week is $18,061.40.

Beecher Con.—The shaft is 42 ft. deep, at the end of which an incline is running easterly 75 ft. From the bottom of the incline, east of a body of ore in which they are working is about 80 ft. They are breasting in ore north and south; the face of the ore-body is about 20 ft. wide and 30 ft. in depth. Running a drift north of east chamber to connect with the middle shaft. Commencing at the old Blasdel shaft, a drift has been run 112 ft. through ledge matter. The Edgar shaft is on the north end of the Co's mines, and is 112 ft. depth. From this shaft a drift has been run northerly about 35 ft., at the end of which an excavation has been made in ore—running north and east—the breast being 15 ft. deep and 40 ft. wide. Connections have been made with the Anchor tunnel, and numerous other drifts have been made for the purpose of prospecting the mine. The shafts and dumps are all completed, and they expect to be able to ship from both ends of the mines about 40 tons per day of first-class ore the coming week.

Eberhardt & Aurora Co's. Mines.—At the Eberhardt the whim has been completed, and they are sinking the shaft which is down 148 ft. The ore in the Risdale and DePass chambers in the North Aurora is improved in quality. In the north end of the Aurora the indications for striking a body of rich ore are good.

H. Treasure.—There is decided improvment in the grade of the ore in the lower tunnel.

San Juan Del Rio.—There is a decided improvement in the quality of the ore. Drifting over the ore will soon be commenced.

Sundeam.—Sinking in the Moscow shaft. The ledge on the south side of the shaft is 10 ft. wide, of which about one-half is good smelting ore. A shift is working in the east drift. Low grade ore in the drift, and the indications of striking high grade ore are favorable.

Silver Wave.—In the Boswell works greater improvement, and the ore which is being worked at the Swansea mill is turning out satisfactorily. Everything is working well in the No. 4 works, and drifting south.

Pennsylvania.—The Jackson shaft is down about 60 ft., and work is progressing. Indications are favorable for getting ore soon.

East Sheboygan.—Ore of a very high grade has been struck in the southwest drift, and the indications are favorable that it will develop into a large body. Good ore continues to be extracted from the Exchange and Regent drifts.

Emerald Isle.—Running a drift east; have some rich ore on the dump, and assorting the same to ship to mill.

Pooonip & Othello.—Running east in the body of ore in the tunnel.

Mammoth.—Looking improved, and ore is being taken out to be milled.

Western Slope, White Pine Mt.—Trench. Working with an increased force, and looking better than at any previous time. Getting ready to ship to mill.

Outside Dist. — Schell Creek.—Quite a number of sales are being made, and the mines have improved since last week. The small 5-stamp mill is expected to start up shortly.

Robinson.—The Canton Co.'s furnace started up on Wednesday, running steady and turned out 26 bars by Thursday morning. In the Canton and Watson mines more gold has been discovered in the rock than was anticipated. In the Canton a fine body of milling ore 15 ft. wide, mixed with carbonates.

Arizona.

Items—Mohave Co.—Prescott *Miner*, August 2: Work upon the copper mines at Williams Fork, is progressing favorably.

Yuma Co.—Castle Dome miners are waiting for cool weather, when active operations will be commenced. Considerable placer mining is being done, with paying results.

Maricopa Co.—Preparations are making to commence work on the Silver Queen and other mines.

Yavapai Co.—Tiger, Del Pasco, and a few other lodes in the Bradshaw region are opening out better and better. Plenty of rich ore on various dumps.

Colorado.

Clear Creek.—Central *Register*, July 31: The Grass Valley P. M. Co., Clear Creek Co., are about to commence active operations.

Cooper & Co., at their gulch claim, South Clear Creek, are taking out $10 per day to the man. Their shaft is almost 45 ft. deep, and they have a drift 45 ft. in length which they are running on good pay-dirt.

The placer claims in Russel, are panning out handsomely. Wm. Queen's claims last week, yielded at the rate of 2½ ozs. to the man.

Central.—Central *Herald*, July 31: Bennett, Smith, Sullivan, and Nichols have a whim up and at work on the Central City Lode. The shaft is 90 ft. deep and sinking is going on rapidly.

Montana.

Yielding Well.—Deer Lodge *New North West*, Aug. 3d: The Trout ore is holding up to expectations, the yield averaging about $136 per ton. A lot of 607 lbs. of bullion was taken out on Sunday.

Utah.

Star.—Pioche, (Nev.) *Record*, Aug. 4th: A number of new locations have been made in Rocky Dist., some of which are turning out well and as work progresses the ore increases in value. The Hickory, of North Star, continues to be the main attraction. The Shenandoah has a shaft 50 ft., and have about 60 tons of ore on the dump, that is considered to be worth $100 per ton. Assays from the latter have been obtained as high as $1,600; the Empire and Linsey are looking well; the Matilda has a vein 3 ft. wide; the Midas has about 40 tons of ore on the dump, assays from which went $4,800; the Washington is highly spoken of. In this Dist., it is said, they are anticipating the erection of two quartz mills.

Good Result.—The superintendent of the Calaveras Mill Co. gave the Paul Process some work to do last week, by way of testing its merits in working 6½ tons of highly concentrated sulphurets, containing more or less lead and zinc, with the sulphurets of iron. The test was highly satisfactory inasmuch as 83 per cent of the value of the highest assay in gold and silver was produced and the bullion came out 990 fine. If by this process we can continue to get bullion as fine and so high a per cent of assay value, the question of its universal adoption is only one of time.

United States Mining Laws and Regulations Thereunder.

[Continued.]

50. Upon the foregoing heing filed within the sixty days as aforessid, the register, or in his absence the receiver, will give notice in writing to *both parties* to the contest that snch adverse claim hss been filed, informing them thst the party who filed the adverse claim will he required within thirty dsys from the date of snch filing to commence proceedings in a court of competent jurisdiction, to determine the question of right of possession, and to prosecute the same with reasonable diligence to final jndgment, and that should sucb adverse clsimant fail to do so, his adverse claim will he considered waived, and tbe spplication for patent he allowed to proceed npon its merits.

51. When an adverse claim is filed as aforcsaid, the register or receiver will indorse upon the same the precise date of filing, and preserve a record of the dste of notifications issued thereon; and thereafter all proceedings on the spliestion for pstent will he suspended, with the exception of the completion of the publication and posting of notices and plat, snd the filing of the necessary proof thereof, until the controversy shall have been adjudicated in court, or the adverse clsim waived or withdrawn.

52. The proceedings after rendition of judgment hy the court in such case are so clearly defined hy the act itself as to render it unnecessary to enlarge thereon in tbis place.

PLACER CLAIMS.

53. The tenth section of the act under consideration provides "that the act entitled 'An act to amend an act granting the right of way to ditch and canal owners over the public lands, and for other purposes,' approved July 9, 1870, shall be aud remain in full force, except as to the proceedings to obtain a patent, which shall he similar to the proceedings prescribed hy sections six and seven of this act for obtaining pateuts for vein or lode claims, hut where said placer-claims shall he upon surveyed lands and conform to legal subdivisions, no further snrvey or plat shall be required, and all placer-mining claims hereafter located shall conform, as nearly as practicahle, with the United States system of public-land surveys snd the rectangular subdivisious of such surveys, and no such locations shall include more than twenty acres for each individnal claimant; but where placer-claims cannot he conformed to legal subdivisions, snrvey and plat shall be made as on unsurveyed lands," etc.

54. The proceedings for obtaining patents for veins or lodes having already been fully given, it will not be necessary to repeat them here; it being thought that careful attention thereto by applicants and the local officers will enahle them to act understandingly in the matter and make such slight modifications in the notice, or otherwise, as may be necessary in view of the different natnre of the two classes of claims, placer-claims heing fixed, however, at two dollars and fifty cents per acre, or fractional part of an acre.

55. Tne twelfth and thirteenth sections of said act of July 9, 1870, reads as follows:

SEC. 12. *And be it further enacted*, That claims, usually called "placers," including all forms of deposit, excepting veins of quartz, or other rock in place, shall he subjected to entry and patent under this act, under like circumstances and conditions, and upon similar proceedings, as are provided for vein or lode claims: *Provided*, That where the lands have been previously surveyed by the United States, the entry in its exterior limits shall conform to the legal subdivisions of the public lands, no further survey or plat in such case being required, and the lands may be paid for at the rate of two dollars and fifty cents per acre: *Provided further*, That legal subdivisions of forty acres may he subdivided into ten-acre tracts; and that two or more persons, or associations of persons, having contiguous claims of any size, although such claims may be less than ten acres each, may make joint entry thereof: *And provided further*, That no location of a placer-claim, hereafter made, shall exceed one hundred and sixty acres for any one person or association of persons, which location shall conform to the United States surveys; and nothing in this section contained shall defeat or impair any *bona fide* pre-emption or homestead claim upon agricultural lands, or authorize tbe sale of the improvements of any *bona fide* settler to any purchaser.

SEC. 13. *And be it further enacted*, That where said person or association, they and their grantors, shall have held and worked their said claims for a period equal to the time prescribed by the statute of limitations for mining claims of the State or Territory where the same may be situated, evidence of such possession and working of the claims for such period shall he sufficient to establish a right to a patent thereto under this act, in the absence of any adverse claim: *Provided, however*, That nothing in this act shall he deemed to impair any lien which may have attached in any way whatever to any mining claim or property thereto attached prior to the issuance of a patent.

56. It will be ohserved that that portion of the first proviso to said twelfth section which requires placer-claims upon surveyed lands to conform to legal subdivisions, is repealed hy the present statnte with regard to claims heretofore located, hnt tbat where snch claims are located previous to survey and *do not* conform to legal subdivisions, survey, plat, and entry thereof may he made according to the boundries fixed hy local rule, hut that where such claims *do* conform to legal subdivisions, the entry may he effected according to such legal subdivisions without the necessity of further snrvey or plat.

57. In the second proviso to said twelfth section authority is giveu for tbe subdivisou of forty-acre legal subdivisons iuto *ten-acre* lots, which is inteuded for the greater convenience of miuers in segregating their claims both from one another and from iutervening agricultnral land.

58. It is held, therefore, that under a proper construction of the law these ten-acre lots iu mining districts should he considered and dealt with, to all intents and purposes, as legal subdivisous, and that an applicant having a legal claim which conforms to one or more of these ten-acre lots, either adjoining or cornering, msy make entry thereof, after the usual proceedings, without further survey or plat.

59. In csses of this kind, bowever, the notice given of the application mnst he very specific and accurate in description, and as the forty-acre tracts may he subdivided into ten-acre lots, either in the form of squares of ten hy ten chains, or of parallelograms five hy twenty chsins, so long as the lines are parallel and at right angles with the lines of the pnblic snrveys, it will be necessary thst the notice and application state specifically what ten acre lots are sought to be patented, in addition to the other *data* required in the notice.

60. Where tbe ten acre subdivision is in the form of a square it may he described, for instance, as the "S. E. ¼ of the S. W. ¼ of N. W. ¼," or, if in the form of a parallelogram as aforesaid, it msy he described as the "W. ½ of the W. ½ of the S. W. ¼ of the N. W. ¼ (or the N ½ of the S. ½ of the N. E. ¼ of the S. E. ¼) of section ——, township ——, range ——," ss the case may he; hut, in addition to this description of tbe land, the notice must give all the other data thst is reqnired in a mineral application, hy which psrties may he put on inqniry ss to the premises sought to he pstented.

61. The proceedings necessary for tbe adjustment of rights where a known vein or lode is embrsced hy a plscer-claim, are so clearly defined in the eleventh section of the act as to render any particular instructions upon that point at this time unnecessary.

62. When an adverse claim is filed to a placer application, tbe proceedings are tbe same as in the case of vein or lode claims, already described.

TRICHINA SPIRALIS.

QUANTITY OF PLACER GROUND SUBJECT TO LOCATION.

63. By the twelfth section of said amendatory act of July 9, 1870, (third proviso,) it is declared "that no location of a placer-claim hereafter made shall exceed one hundred and sixty acres for any one person or association of persons, which location shall conform to the United States surveys," etc.

64. The tenth section of the act of May 10, 1872, provides that "all placer-mining claims hereafter located shall conform as near as practicahle with the United States system of public-land surveys, and the rectangular snbdivisions of such surveys, and no such locations shall include more than twenty acres for each individual claimant."

65. The foregoing provisions of law are construed to mean that after the 9th day of July, 1870, no location of a placer-claim can be made to exceed one hundred and sixty acres, whatever may he the number of locators associated together, or whatever the local regulations of the district may allow; and that from and after the passage of ssid act of May 10, 1872, no location made hy an individual can exceed twenty acres, and no location made by an associatiou of individuals can exceed one hundred and sixty acres, which location of one hundred and sixty acres canuot be made by a less unmher than eight *bona fide* locators, hut that whether as *much* as twenty acres can he located by an individual, or one hundred and sixty acres hy an association depends entirely upon the mining regulations in force in the respective districts at the data of the location; it heing held that such mining regulations are in no way enlarged hy said acts of Congress, but remain intsct and in full force with regard to the full size of locations, in so far as they do not permit locations in excess of tbe limits fixed hy Congress, hnt that where such regulations permits locations in excess of the maximums fixed hy Congress as aforesaid, they are restricted accordingly.

66. The regulations hereinbefore given as to the mauner of marking locations on the ground, and placing the ssme on reeord, must he observed in the case of placer locations, so far as the same are applicahle; the law requiring, however, that where placer-claims are upon *surveyed* public lands, the locations must hereafter be made to conform to legal subdivisions thereof.

67. With regard to the proofs neccesssry to establish the possessory right to a plscer-claim, the said thirteenth section of the act of July 9, 1870, provides thst "where said person or associstion, they and their grantors, shsll hsve held and worked their said claims for a period equal to the time prescribed by the statute of limitations for mining claims for the State or Territory where the same may he sitnated, evidence of snch possession and working of the claims for snch period shall he sufficient to establish a right to a patent thereto under this act in the absence of sny adverse claim."

68. This provision of law will grestly lessen the hurden of proof, more especially in the case of old claims locsted many years since, the records of which, in msny cases, have heeu destroyed hy fire, or lost in other ways during the lapse of time, but concerning the possessory right to which all coutroversy or litigation has long heen settled.

69. When an applicant desires to make his proof of possessory right in accordance with this provision of law, you will not require him to produce evidence of location, copies of conveyances, or abstracts of title, as in other cases, but will require him to furnish a duly certified copy of the statute of limitations of mining claims for the State or Territory, together with his sworn statement giving a clear and succinct narration of the facts as to the origin of his title, and likewise as to the continuation of his possession of the mining ground covered by his application; the area thereof, the nature and extent of the mining that bas heen done thereon; whether there has heen any opposition to his possession or litigation with regard to his claim; and if so, when the same ceased; whether such cessation was caused by compromise or hy judicial decree, and any additional facts within the claimant's knowledge having a direct hearing upon his possession and *bona fides* which he may desire to submit in support of his claim.

70. There shonld likewise be filed a certificate nnder seal of the court having jurisdiction of mining cases within the judicial district embracing the claim, that no suit or action of any character whatever involving the right of possession to any portion of the claim applied for is pending, and that there has been no litigation before said court affecting the title to said claim or any part thereof for a period eqnal to the time fixed by the statute of limitations for mining claims in the State or Territory as aforesaid, other than that which has heen finally decided in favor of the claimant.

71. The claimant should support his narrative of facts relative to his possession, occupancy, and improvements hy corrohorative testimony of any disinterested person or persons of credibihty who may he cognizant of the facts in the case and are capahle of testifying nnderstandingly in the premises.

72. It will he to the advantage of clsimants to make their proofs as full and complete as practicable.

APPOINTMENT OF DEPUTY SURVEYORS OF MINING CLAIMS—CHARGES FOR SURVEYS AND PUBLICATIONS—FEES OF REGISTERS AND RECEIVERS, ETC.

73. The twelfth section of the said act of May 10, 1872, provides for the appointement of surveyors of mineral claims, authorizes the Commissioner of the General Land-Office to establish the rates to be charged for snrveys and for newspaper publications, prescribes the fees allowed to the local officers for recciving and acting upon applications for mining pstents snd for adverse claims thereto, etc.

74. The surveyors general of the several districts will, in pursuance of ssid law, appoint in each land district as many compctent deputies for the survey of mining claims as msy seek snch appointment; it being distinctly understood that all expenses of thcse notices and snrveys are to he horne by the mining claimants and not by the United Ststes; the system of msking *deposits* for mineral surveys, as required hy previons instructions, being herehy revoked ss regards *field-work*; the clsimant having the option of employing *any* deputy surveyor within such district to do his work in the field.

75. With regard to the *platting* of the claim and other *office-work* in the Surveyor General's office, that officer will make an estimate of the cost thereof, which amount the claimant will deposit with suy United States sssistant tressurer, or designated depository, in favor of the United States Tressnrer, to be psssed to the credit of the fund created by "individual depositors for surveys of the pnblic lands," and file with the surveyor general duplicate certificates of snch deposit, in the nsual manner.

76. The surveyors general will endesvor to appoint mineral deputy surveyors, as rapidly ss possible, so thst one or more may he located in each mining district for the grester convenience of miners.

77. The usual oaths will be required of these deputies and their assistants as to the correctness of each survey executed by them.

78. The law requires that each applicant shall file with the register and receiver a sworn statement of all charges and fees paid by him for publication of notice and for survey; together with all fees and money paid the register and receiver, which sworn statement is required to he transmitted to this office, for the information of the Commissioner.

79. Should it appear that excessive or exorhitant charges have been made hy any surveyor or any pnhlisher, prompt action will be taken with the view of correcting the abuse.

80. The fees payable to the register and receiver, for filiug and acting upon applications for mineral-land patents, made under said act of May 10, 1872, are five dollars for each officer, to he paid by the applicant for patent at the time of filing, and the like sum of five dollars is payable to each officer by an adverse claimant at the time of filing his adverse claim.

[To he Continued.]

Trichina Spiralis.

A great stir is heing made because the trichina has been discovered in a Chicago ham at San José. There is prohably no doubt as to its being the true trichina spiralis, an animal that, if it once gains admission to the human stomach, is pretty certain to cause inconvenience, if not death, sooner or later. It is ascertained that in two days after their iutroduction into the stomach they attain their full sexual maturity, and in six days after the young are disseminated by millions throngh every part of the muscular system.

The young trichina, as they are found in the human muscle, appear as represented by figure 1 in our illustration; as a worm coiled up in small oval or elongated cysts, harely visihle to the eye.

The perfect worm, fully grown, represented by figure 2, rarely exceeds the two-hundredth part of an iuch in length, so small, indeed, that a single ounce of flesh has been estimated to contain 325,000 trichina; and yet their countless numhers produce the terrihle disease called *Trichiniasis*.

The numerous outline figures of our engraving are merely to show the various positions they are found—by aid of the microscope—to assume while occupying each its own distinct cyst or pouch imbedded in the flesh. The hog seems to he the animal most likely to be infested hy this nematoid or thread-like worm, being conveyed to the stomach in the filthy garhage often fed to this animal.

Prof. J. B. Edwards, at a meeting of the American Association for the Advancement of Scieuce, held in Salem, Msss., stated, that if meat containing trichina is beated to 212°, the hoiling point of water, the worms will he effectnally killed, aud the meat will not injure the consumer.

Prof. Agassiz followed by saying, he hoped the appetite of the community would not be distnrhed hy this scientific discussion, as snch worms are present in all meats and even many vegetahles, and there is no danger if they he properly cooked.

But so far as our people are concerned, as the trichina has never yet been found in California cured ham or bacon, we would recommeud its exclusive use in preference to any, in regard to which a snspicion may rest. California ham and eggs will continue one of the staple hreakfasts of the *genus homo* of this coast for a long time to come, hut to those who may prefer the Eastern article, our advice would be to call for it *well cooked*.

Useful Information.

Recent Earthquakes.

Prof. Rockwood gives notices of shocks this year in the *Amer. Jour. Sci.*

1. Jan. 16.—An earthquake almost entirely destroyed the city of Shamaka, Russia, a place of 25,000 inhabitants, lying at the southern base of the Caucasus Mts., and about 75 miles west of the Caspian Sea. Over 100 persons are reported killed, and scarcely a building in the city left standing. The shock was felt over a large extent of the surrounding country.

2. Feb. 6, 8 A. M.—Three slight shocks, lasting altogether about 30 seconds, the vibrations from the N. N. E., were felt at Winona, Michigan.

3. Feb. 8, about 5 A. M.—Slight shock at Cairo, Illinois.

4. March, 6 P. M.—Shocks felt simultaneously for over an hour at Dresden, Pirna, Schandau, Chemnitz, Bodenbach, Weimar and Rudolfstadt, in Germany.

5. March 26. — Earthquake in California. [This has been spoken of at varlons times in this paper.—Eds. Press.]

6. March 26.—Slight shock at Paducha, Kentucky, also one at Salt Lake City, Utah. These may have been part of the Inyo earthquake.

7. April 3, 8 A. M.—Severe earthquake destroyed a large part of the ancient city of Antioch, in Syria. The shock lasted over 40 seconds, and the wave traveled from east to west. Lighter shocks followed at irregular intervals for a week. The number of persons killed is estimated at 1,000 to 1,600.

8. April 16, 17 and 18—A series of violent shocks reported at Hasvick, Iceland. Twenty houses destroyed, several persons injured, but no lives lost.

9. The recent grand eruptiou of Mt. Vesuvius is interesting, as being possibly connected with the phenomena recorded above. This eruption first assumed noticeable proportions on the night of April 24, when a flow of lava was added to the flames and smoke which had for months adorned the sumit of the mountain. On the night of the 25th, a chasm opened in the side of the cone, from which issued a torrent of lava; the whole occurring so snddenly as to overtake and destroy a number of the spectators who were watching the eruption. The flow of lava continued two or three days, overwhelming two villages and buried a considrable extent of cultivated land. The eruption finally ended with a shower of stones and volcanic sand which fell in the streets of Naples to a depth of several inches; the eruptiou was attended with the usual local trembliugs of the earth.

Disturbances Anlicipaled al Mt. Hecla.

In connection with the above the following from the *Scotchman*, will not be without interest:—"Inferences drawu from the late eruption of Vesuvius, the great hurricane on the coast of Africa at Zanzibar, and volcanic disturbances and phenomena in the Malay archipelago, California, Japau, Syria, and other portions of the earth's surface, had led some of our best scientific authorities to believe that an eruption of Mount Hecla in Iceland may be expected at an early date. Should this occur during the summer season a full description may be expected to be received, as there is at present a considerable number of travelers from this country to Iceland. Besides Captain Burtain and his party, who are examinging the sulphur deposits in the vicinity of Hecla and the other volcanic masses in the Island, others are collecting geological, oruithological, botauic, and other specimens, wbile one gentlemau is exploring the country with the purpose of writing a topographical description of it.

The African Fly.—One of the most extraordinary facts revealed to us hy Dr. Livingstone's explorations in Africa is that the high table land of the interior, with its rich agricultural resources, its noble flora, its fine temperature, broad inland seas, and inexhaustible stores of mineral wealth, is rendered all but impenetrable to civilized mau, certainly beyond all reach of colonizatiou, by one of the most apparently insignificaut of causes—a fly. This terrible insect is a little, brown, yellow-striped fly, called the tsetze, scarcely larger than our common household pests, but whose sting is absolutely fatal. So deadly is its poison that it is said three or four flies will kill the largest ox. Soon after the hite, which gives little or no pain, staggering and blindness comes on; the body swells to an enormous size; the coat turns rough, and in a few hours follow convulsions and death. And yet this deadly poison, under the effect of which the horse and ox, the sheep and the dog, fall as if plague-stricken, is perfectly harmless to man, to wild animals, to the pig, mule, ass and goat. Here is an achievement for science that would bring glory to the discover—the discovery of some antidote to the sting of this venomoue fly, which would open the treasures of Central Africa to the use of the world.

Cheapest Process for Making a Safe Oil.—Prof. Chandler, in the *American Chemist*, says the cheapest process for making an oil that will not flash, that is, emit an inflammable vapor, below 100° Fahr., is the following: 1. Run off the naphtha down to 58° B., instead of 65° to 62°, the usual point. 2. Then expose tho oil in shallow tanks to the sun or diffused daylight for one or two days. The increased expense of this plan of refining would not reach more than three or four cents per gallon,

Artificial Marble.

The *Engineer* describes how an excellent imitation of marble is made in London at a small expense. The marblo is the so-called Marezzo marble. A large sheet of plato glass is first laid horizontally on the tablo, then a skein of tangled silk, knotted at the opposite ends and soaked in coloring matter, is pulled out into a rough rectangular form, the rectanglo being crossed in all directions by the tangled threads, and laid upon the piece of glass, the knots lying beyond the edges of the glass. This first skein is colored to form, say, tho blue veins; then another skein, soaked in other coloring matter, may be laid over it to form other veins. Then some Keen's cement lightly colored, is sprinkled over the skeins with the fingers to further add to the marbling effect, and after two or three sprinklings, it may be of different colors, the silk is quite covered by the wet layer of cement. Then the silk is pulled out by being lifted vertically upwards through the cement. More cement is then added, and the mass is smoothed by a trowel. Next, some fine cement is laid on, and over this a layer of canvas to give strength to the film, now about a sixth of an inch thick. Then comes a thick backing of coarse cement, making the whole five-eighths of an inch thiek. On turning up the slab of plate glass, and looking at the face of the layers of cement, as fine a specimen of marble is secn as anybody need wish to view, all made in a few minutes. It is left on the glass twelve hours to dry, and is afterwards enameled and polished. It is not impossible that many a householder who thinks he has a fine marble mantelpiece might, by boring a little helow the surface, be somewhat surprised to come upon a layer of canvas inside the stone.

Blood as Food.—Attention having been drawu by Professor Panum, ot the University of Copenhagen, to the amount of nutritious matter contained in blood, and usually entirely lost, Mr. Nielsen, of that city, bas been endeavoring to solve the problem of fixing blood in forms suitable for food, and at the same time capable of preservation, namely: (1) as sausages, puddings, cakes, (being mixed with fat, meal, sugar, salt, a few spices,) to serve as a much cheaper compensation for meat, and intended more especially for the use of the poorer classes; (2) as blood-chocolate, morc especially suitable to be used in hospitals, and otherwise in medical practice, in which latter form it has been recommended by Professor Panum, at a meeting of physicians at Copenhagen, and is now being employed at the hospitals of Copenhagen, the attention of physicians being diidirected to its effects. In these different forms it would be suitable for the victualing of vessels on long voyages, of besieged towns and fortresses, and, especially in the chocolate form, of soldiers on long marches, travelers ia uncivilized tracts, etc.

Growth of Nails.—M. Dufour has made observations as to the rate of growth of the nails. Here are some of the results: The nails of the little fingers grow more slowly thsn those of the other fingers and the thnmbs. The difference is abont one ninth. The mean rate of these (excluding the little fingers) is about one millimeter (100th part of an inch) in ten days. The rate of growth on the thumbs is probably greater than that on the six longer fingers. There is little difference between the rates of growth in different animals. The nails grow at about the same rate on both hands. The rate of growth is not ceustant throughout the length of the nail; it is greater uear the base. The rate of growth at the side parts is probably the same as in the middle part. The substance of the nail advances equally throughout its breadth. The rate of nail growth in an individual at intervals of several years shows sensible differences.

Insoluble Glue.—The liability of glued articles to come to pieces when exposed to the action of water, especially hot water, is familiar to every one. By adding to the water, with which the glue is mixed when required for use, a small quantity of bichromate of potash, and afterwards exposing the part to which it is applied to light, the glue is rendered insoluble, and the articles fastened with it resist the action of water. The proportion of bichromate of potash to be taken must be determined by experiment, but for most purposes one-fiftieth of the amount of glue required will be sufficient.

Testing the Richness of Milk.—It is said that the richness of milk may he quickly and easily tested by placing the milk between two plates of glass so arranged that one may be made to approach to or rocede from the other by meane of a screw, placing behind the plates the flame of a stearine candle, or any other standard light, and obscrving the point at which it is rendered invisible on separating the glass platee. This point, when compared with the permanent line indicating the best milk is the measure of the richness of the sample.

Cement roofs are coming into very extended use in Prussia. The cement is ground in steel mills and laid on with a thickness of only one-eighth of an inch. The roof is therefore a light one, weighing less than eight pounds to the square foot. With German prices, the cost is fifty-two cents to the square foot.

Good Health.

Taking Cold in Warm Weather.

Many people think there is no danger of taking cold when the weather is very warm, and expose themselves in various ways when overheated, fatigued, or sweaty. This is an erroneous idea—destructive to life and health. When the system is fatigued with exercise, overheated or sweating, great caution is necessary to guard against taking cold. Some people say they never take cold, and have no fear of taking cold. But are they never ill in some form? O, yes; but they do not cough, and conclude they do not take cold.

Colds no not effect all people alike. All do not cough that have been exposed to cold; but the insensible perapiration cannot be suddenly checked without injury to people and animals. Hence it is dangerous to drink cold drinks when one sits down to rest, though if exercise is continued, they may be partaken of in small quantities with benefit. The systems of men and animals that exercise must not he rapidly, but gradually cooled.

Horses ought not to be watered when abont to stop exercise, either in warm or cold weather. This practice subjects thom to disease and often destroys their lives.

More than twenty-five years since, I read in "Cutter's Physiology" that when people were warm with exercise, or from other cause, they ought to throw something over their shoulders on sitting down to rest. An observance of this rule, has, I am satisfied, saved me much sickness. If men would put on a coat when resting, or after work at night, it would save them many bad feelings, sickness, and sometimes death.—*Moore's Rural.*

Mortality as Affected by Marriage.—In a paper read by M. Bertillon before the Academy of Medicine of Paris, the anthor—using as evidence the statistics of France, Holland, and Belgium—strongly maintained the healthful influence of conjugal association as compared with that of celibacy. The figures show that, between the ages of 20 and 35 years, 1,000 married men furnish six deaths; 1,000 bachelors 10 deaths; aud 1,000 widowers, 22 deaths. From 30 to 35 years of age, the same classes, respectively, furnish 7.11 and 17¼ deaths. From 35 to 40 years of age, the mortality is 7½, 13, and 17⅛ per 1,000 respectively. And so on in a series of tables for all ages, the married man has greater longevity than the single man. The same advautage of the married state obtains in the case of females, though up to the age of 80 the difference is not so apparent as in the other sex. From 30 to 35 the mortality is 11 per 1,000 for single women, and only 9 per 1,000 for married women, and this difference increases up to the age of 55. Thus from 50 to 55 years of age, 1,000 wives furnish only 15 or 16 deaths, while as many single women or widows furnish 26 or 27. This advantage remains very notable beyond that age, dimiuishing hut little. In France, however, under 25, and in Paris, under 20 years of age, marriage is far from favorable, but even injurious, as also in the case of males. The mortality of unmarried girls of from 15 to 20 is 7.53 per 1,000; the mortality of wives of the same age being 11.86. The mortality of girls from 20 to 25 is 8.32; of wives of the same age, 9.92.

Importance of Ventilation.—In an emigrant ship ou one occasion, during a violent storm, the captain, in order to keep the decks clear and facilitate the working of the ship, sent the passengers into the hold, ordered the hatches to be fastened down, and kept them in that state all night. In the morniug, when the hatches were removed, the hold was found to be full of the dead and dying.

A modified form of this state of things is to be found in many a house in every town—where partial murder is done night after night; and the result is shattered health. The body loses its tone and is reduced to that state in which it falls an easy prey to any infectious disorder, the seeds of which may be floating about in search of a fertile germinating bed.

Every man should be made to understand that he requires not less than 150 or 160 cubic feet of fresh air every hour, and that he should not use over again what has once passed through his lungs, till, like fowl water, it is cleansed by filtration. People should be taught to fear polluted air more than draughts—which would amount to a total reversal of the present belief; for we now see a general preference for the former. In this respect men might cull a lesson from the beee, who, while they highten the temperature of the hive, do it not at the expense of healthful condition. Their mode of ventilation is perfect.

Supposed Cause of Sea-Sickness.—Dr. Anderson of London, writing in the *British Medical Journal*, coneiders sea-sickness to depend on an impression on the brain equivolent to a blow, given by overy lurch or descent of the ship. In other words concussion of the brain is virtually the cause of sea-sickness.

Reported Specific for the Yellow Fever.—The English Consul at Cuidad Bolivar, Venezuela, has reported to his government that a cure for the yellow fever has been accidentally discovered in that place—the specific is the juice of the Nervine plant.

The Difference Between Disgusting Odors and Odors of Fever Poisons.

In a communication to the *Lancet*, Mr. Buée, of Slough, calls attention to the great difference there is between stinks and poisons. He says: "Stinks may or may not be organic, and may damage health; but fever poisons are organic, have a life, a growth, will produce their like, and, if planted in favorable soil, grow, run their course, live their natural life, die out, and leaving seed behind them, reproduce themselves; and, above all, have no smell. A boy who has never had scarlatina gets into a railway carriage in which an infected person has traveled; he smells nothing, yet takes the disease. A well attended person suffering from that disease or any other, has a scentless room; yet an incomer predisposed, though not smelling anything, takes the illness. The scabs from small-pox and cow-pox have no smell, yet they will not inoculate.

The fact is, though as yet we cannot see the germ, our microscopes and means not being at present sufficiently powerful, yet common-sense and reasoning from the habits of these poisons tell us, I think plainly, that they are organic and inodorous. And if so, what should we do besides draining and ventilating? Why, decompose, disinfect and destroy the vitality of the germ, never allowing it, if once cast into the closet, to get again into the atmosphere alive. Chloride of lime, carbolic acid, and last, not least, though cheapest, solution of sulphate of iron, which last, I believe, gives out much ozone, and is as good a destroyer of germs as anything I know. Let one of these he used constantly in all closets, sinks, and drains. These poisons do not necessarily require a human body for their growth: they will grow on a dunghill or in a cesspool, wherever there is a favorable uidus, like fungi."—*London Pharm. Journal.*

What Kind of Food Must We Eat.

Resistant solid material, as well as elements of nourishment, are essential in food. Neither cattle nor horses could be kept alive long on fine flour, meals, or graius of any kind. Mixed, however, with grass, dry bay, or straw, they thrive. The walls of the stomach and bowels must be kept apart by solid material, on which friction may be exerted, in order to have perfect digestion. A dog lived twenty-one days, the only survivor of a wrecked vessel at sea, closely shnt up in the cabin, by eating the thick, strong wood and leather binding of a Bible, while experiments with dogs fed on soft food, as gelatine, thin soup, etc., proved that they could live a single week on such diet.

Those persons whose diet is rather coarse, as bread of unbolted flour, large fruit eaters, bread and milk people in the country, etc., are exempt from the pains of dyspepsia. Those sustained mostly ou very fine, concentrated, delicate food, washed down with tea, are gaunt in form, weak in muscle, and always taking medicine. Their food shonld have more bulk and solid, hard ingredients.

A poor man's family uever lack for an appetite with a crust of brown bread. His neighbor's darlings, snrfeit on rich cakes, highly seasoned dishes and nurtured in luxury, are the life of doctors and druggists. So says science.

Poison from Scratching.—It is not from any poison inherent in the nails of a hnman being, or the claw of a bird or animal, that produces the poisonous effects somotimes experienced from a human or animal scratch. It is the dirt that is collected under them, and which cleanliness requires should be often removed, that causes the mischief. It is a kind of innoculation of impurities, and this, of course, produces the legitimate result in accordance with the kind of impurity which has become innoculated. The scratch of a person who keeps his hands carefully clean never irritates much, while that of a dirty hand may have serious results. We had recently in the papers a report of a man who died of the results of a scratch of his own dog's paw, and the doctors were discussing if this dog had not hydrophobia. They should have simply cleaned the dog's nails, and seen what kind of dirt he had between them. This man mnst have had a predisposition or great sensitiveness for poisonous matter thus introdnced. In perfectly healthy persons such matters are usually driven out by inflammation and suppuration, and the patient's vitality gains the victory.

Hereditary Influences.—It is distinctly asserted by Prof. Lucas, and agreed to by others, that predisposition to any form of disease, or any malformation, may become an inheritance. Thus disease of the heart is hereditary; so are tubercles in the lungs; so also are diseases of the brain, of the liver, and of the kiduey; so are diseasee of the eye and of the ear. General maladies are equally inheritable, and gout and madnees. Longevity on the one hand, and premature death on the other, go by descent. If we consider a class of peculiarities more recondite in their origin than these, we shall find the law of inheritance to hold good. A morbid susceptibility to contagious disease, or to the poisouous effects of opium or of calomel, and an aversion to the taste of meat, are all to be fouud inherited. So is craving for drink, or for gambling, strong sexnal passions, a proclivity to pauperism, to crimes of violence, and to crimes of fraud.

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San Francisco:

Saturday Morning, Aug 17, 1872.

Gold and Legal Tender Rates.

SAN FRANCISCO, Thursday, August 15, 1872.—Legal Tenders buying, 87¼; selling, 87¾. Gold in New York to-day, 115.

Table of Contents.

EDITORIALS.—An Observatory in the Sierras, Page 97. The Yellow Jacket Fire; Improved Metallic Tubular Harrow; Hope Gravel Mine, 104.
ILLUSTRATIONS.—The Diamond 97. Trichina Spiralis, 102. The Hawley Kiln, 105.
CORRESPONDENCE.—Notes of Travel in White Pine Co., Nevada; Mining Correspondence, 98.
SCIENTIFIC PROGRESS.—Contortion of Rocks; Improved Manufacture of Homogeneous Metals; Production of Ozone; Historical Lessons from a Brick; Odor of Plants, 99
MECHANICAL PROGRESS.—Siemens' Steam Jet; Relative Merits of Rubber and Leather for Belts; Influence of Cold upon Iron; Portable Railway for Common Roads, 99
MINING SUMMARY from various Counties in California, Nevada, Arizona, Colorado, Montana, and Utah, 100-1.
USEFUL INFORMATION.—Recent Earthquakes; The African Fly; Cheapest Process for Making a Safe Oil; Artificial Marble; Blood as Food; Growth of Nails; Insoluble Glue; Testing the Richness of Milk, 103.
GOOD HEALTH.—Taking Cold in Warm Weather; Mortality as affected by Marriage; Importance of Ventilation; The Difference Between Disgusting Odors and Odors of Fever Poisons; What Kind of Food Must We Eat; Poison from Scratching; Hereditary Influences, 103.
DOMESTIC ECONOMY.—How to Give Dinners; Yellow Pickle; To Bottle Green Gooseberries; A Receipt for Yeast; Practical Receipts, 108.
MISCELLANEOUS.—United States Mining Laws and Regulations Thereunder, 102. Observations of a Practical Miner; Mining in Central Asia; The Silver Mines of Georgetown, Colorado, 106. Patents and Inventions; New Incorporations; Meetings and Elections, 108.

LONGITUDE OF SAN FRANCISCO.—The latest official result arrived at from the discussion of the telegraphic longitudes between San Francisco and Greenwich, places the longitude of the United States Coast Survey Observatory in Washington Square, at 8 hours, 9 minutes, 38.32 seconds west of Greenwich. The calculation between this place and Cambridge, has been accurately computed by aid of the telegraph lines across the continent, and the difference between Cambridge and Greenwich has lately been corrected by means of the Atlantic cables. At Mr. Tennent's observatory on Russian Hill, a little west of the Washington Square observatory, the longitude is increased by these calculations to 8 hours, 9 minutes, and 39.51 seconds. If any further corrections are made, they will not probably amount to more than two or three-tenths of a second.

THE S. F. CHRONICLE.—This paper is to be enlarged, printed upon new and improved type, with a "Hoe rotary, four-cylinder, double quarto," Press, capable of striking off 20,000 copies per hour. Their immense increase of patronage requires the improvements.

QUICKSILVER.—We doubt whether knowledge of the fact that quicksilver has advanced to 87½ cents per pound, will be particularly interesting news to the mining community; nevertheless, such is the case.

A DISPATCH from Elko states that excitement in the Silver Zone District runs high, and valuable mines are being discovered daily.

ON FILE.—"The Silver mines of Peru;" communication from H. E.; "Notes of Travel in White Pine County."

Coal and Iron.

Coal and iron are the motive powers of the world, and the nations which possess the greatest and most easily accessible deposits of them will in future rule the earth. The immense demands that manufacturing industry is now making on the coal and iron production of the old world is tasking it far beyond its presumed capacity, and the inequality between supply and demand will increase rather than diminish as the years pass on. Land after land is being overspread with its net work of railroads, and countries already possessing extensive railroad systems are making such additions year by year as to render them almost as numerous as common country roads. Yet the greater part of South America, Central America, Mexico and numerous European colonies in various parts of the world are in regard to the development of their railway systems as much behind hand as was the United States fifty years ago. For the next few years they will all be making fast demands on the industry of the iron miners and the iron founders of the world. Then there is India, which at a no distant period will possess as extensive a railroad system as the United States does now; also China, which is beginning in this matter to throw off the trammels that custom and a respect for the institutions of antiquity has so long imposed, and many other countries altogether inactive in this respect now, which will help to largely swell the general demand.

The demands of iron for railroad purposes, great as it has already become, is only one of the many sources of demand which will hereafter tax the energies of the producer. Ere two score years have elapsed the commercial marine and the navies of the world will have been changed to iron from wood. The exhaustion of the great forests of Canada and the United States, as well as the total inability of the plantations of England and other European countries to furnish the necessary supplies of lumber, will render this material so dear as to turn the universal attention of ship builders to the procuring of some cheaper and more abundant one. This they will find in iron, as indeed already some of them have so found it. The plates for 10,000 ships can be cast from the same mould as readily as those for one, hence their aptness. Most of he ship yards of England are even now to a great extent occupied by iron ships in process of building. England is changing the character of her mercantile marine with marvelous rapidity, and the United States, if she hopes to be able to compete with her great rival for the carrying trade of the world, must follow the example. The mercantile marine of both nations aggregate at least 100,000 vessels of all classes, the number of which is daily increasing to an extent commensurate with their commercial importance. Only think of what a vast additional quantity of iron will have to be dug from the mines of the world to supply the demand arising from this source only. Then in general manufactures the use of iron is gaining to an extent that twenty years wae even undreamed of. Moreover these manufactures from the workshops of England, France, the United States and Germany are finding thousands of markets now-a-days where formerly they only found hundreds.

The consideration of the immensity of the needs of the coming railroad system, of ship building, and of general manufactures will readily convince our readers of the vast additional supplies of iron ore that will be needed. The statement of a few facts in connection with iron production will also show this. In England, at the present time, mine owners have orders for supplies of iron which it will take them fully eighteen months to meet. And this, notwithstanding the production of English pig iron has increased over 38 per cent. since 1864. The demands of railroads in Russia, Turkey, Hungary, Germany, Sweden, India, the Australian colonies and South America, combined with the increase of iron ship yards on the Tyne and the Clyde were so great as to create in conjunction with other causes a rise of Glasgow pig iron 60 s. per ton in 1870. At this time the stock of pig iron was very limited indeed. The stocks in Cleveland iron were not more than a month's make, while those in Scotch pig iron were not more than three months. Since then more supplies have become continually less and less, notwithstanding the vast increase in production, and now there are none. England, however, has enough for her own consumption at any time, inasmuch as she now exports 10 per cent. of her whole production; but we are not so happily situated.

The capacity of our furnaces this year is about 2,150,000 tons, of which we will require 966,000 tons for railroad purposes. This will leave us only 1,184,000 tons for all other purposes, and being supplemented by an import from England, equal to that of last year, or we shall have only 1,784,000 for all other purposes connected with our multitudinous and rapidly expanding manufactures. This will not be enough, and the result will be that the price of iron will continue to rise. It has fallen in this market during the last six or seven weeks; but the coming months must bring a rise again. The reduction in the hours of labor, and the increase of workmen's wages has tended also to give an impetus to the iron market, and the influence exerted by this cause is likely in the future to be greater still.

The development in the production of pig iron has caused, of course, an increased demand for coal, and so great has this demand been in England that she is now compelled to import from Belgium. We, here on the Pacific Coast, being supplied mainly from Australia and from home sources, neither of which can be much disturbed by the cause just mentioned, will not experience such a change in the price of this indispensable article as will England and the rest of the United States, but our market will be affected, nevertheless. We must certainly expect to pay more for our mining machinery and the products of our foundries generally unless we can discover on this coast extensive deposits of iron ore and beds of coal of sufficient good quality to supply the needs of our workers in metal.

The Yellow Jacket Fire.

It will be remembered that a few months since quite a discussion was carried on among some of the papers on this Coast, as to the origin and cause of the fire in the Yellow Jacket mine some three years since, by which a large amount of property was destroyed, and a number of valuable lives lost. Serious charges were brought against a certain gentleman prominently connected with the mining industry, and great interest was manifested by the public in the subject. The names of several well known people were connected with the affair, and, although it was supposed by many, that the vague rumors which were set afloat at the time of the fire, were being revived from personal, political and speculative motives, it was, nevertheless, considered worthy of investigation by the Grand Jury of Storey county. That body after a complete investigation, have failed to gather any facts which would show that the fire was caused by the act of any person known to any of the witnesses. One witness in particular, who claimed to have information which would tend to show that the mines were purposely set on fire, was carefully examined, and the verdict of the jury is, "that we are convinced that his statements are without foundation, and unsustained by any other witnesses, and seemingly the result of personal malice towards parties by whom he conceived himself to have been maltreated."

As to the matter of unusual quantities of powder having been taken into the mine just previous to the fire, the testimony failed to prove that any more powder was put there at any time than was necessary for daily working of the mines. It is to be hoped that this decision will set the matter at rest forever, and that we will have no recurrence of charges and counter-charges, which, to say the least, are insults to the judgment and morality of the people of this Coast; since if there were any truth in the assertions, they should be immediately made the subject of judicial investigation, and the community would not rest until the parties who committed so foul an act as to sacrifice a number of fellow beings, merely to gain certain financial points, were disposed of in a very summary manner. The possibility that such persons would be allowed to go free because of their wealth or social position, only aggravates the insult. We hope never to hear anything more of this affair.

COTTON MACHINERY FOR CHINA.—Messrs. Treadwell & Co., of this city, have furnished a steam engine and a complete cotton mill for China, which has already been shipped from this port to Hong Kong. The proper supplies also accompanied the same. Thos. Wood, of Philadelphia, is the manufacturer of the machinery, and sold the same by reason of advertising in the PRESS.

Improved Metallic Tubular Harrow.

Among the many patents that have been allowed through the SCIENTIFIC PRESS Patent Agency, on farming implements, is one to James Herris, on a metallic tubular field harrow, some of which are now being manufactured at the San José Foundry, Santa Clara County, and at the City Iron Works in this city. This improvement consists in constructing the frame of the harrow of metallic pipe. The tubes are held together by passing iron rods through the transverse tubes and through the sides of the longitudinal tubes, which are drawn together by nuts on the ends of said rods. An end piece, or washer, of peculiar construction is used to provide a bearing for the transverse tubes against the longitudinal ones.

Although much attention has been given to improving other farming implements, the harrow, until lately, seems to have remained the same. In many places in Scotland, however, the wooden barrow has been entirely discarded and given place to the iron one, the latter being preferred by the best farmers of that country as being better for pulverizing the soil and covering the grain; but the principle upon which they are made being expensive and requiring considerable trouble, they are not much known in other parts of this world.

In this tubular harrow the beams and cross bars are suitably made and finished at the first process of manufacturing the iron, consequently little labor is needed to join the frame work together; for that reason a good durable iron harrow can be made with steel teeth at less cost than a wooden one with iron teeth, and it can at the same time be made light or heavy, large or small, to suit different soils. As to durability, an implement of this kind made of the materials used ought to last a generation without any care in any country. Arrangements are being made to supply the demand for the coming season, and the proprietor proposes to dispose of manufacturing and county rights. It can be seen at the City Iron works, where mechanics, manufacturers and others are invited to examine it.

Hope Gravel Mine.

The stockholders of this company will be glad to learn that after so long a time, and such a large outlay of money in the shape of assessments, that they have at last found what the old Alta Co. No. 1 and 2 found on the same hill some years since. Report says the latter company took out of the ground, which has now been purchased by the Hope Gravel Company, some $500,000 in two years.

Mr. C. W. Ham has had charge of the mine for three years, and with the assistance of Mr. John Cunningham, the underground foreman, has worked the whole thing to the best advantage in the interest of the stockholders. They have run several thousand feet of bed-rock tunnel from the shaft, and have been amply repaid by finding deposits of rich pay gravel. In the last three months they have opened up a large body of good paying gravel, which has produced in the last sixty days up to July 31st, about 300 ounces. The last clean up ending August 10th, 1872, from eight days' run, produced 248 ounces of gold, worth $17 per ounce, or $4,216.

The working shaft is 240 ft. deep. The cement and gravel are all crushed through an eight-stamp mill, and go through the same process as quartz. The company are now working a breast of 40 feet in the main tunnel, and the pay streak is from one and one-half to three feet. The superintendent promises large returns to the company as soon as he can get the drifts run so as to put on a large force of miners.

The trustees anticipate paying their first dividend very soon on 12,000 shares, as they are assured that the next run will be much better than the last. This stock has been assessed somewhere in the neighborhood of $100,000, and the founders of the company who still retain an interest in it, will be glad that the day of assessments is at an end. The Altona mine, on the same hill has the same kind of deposit, but it is now idle for want of means. The news from the Hope Company will doubtless inspire its stockholders with renewed confidence.

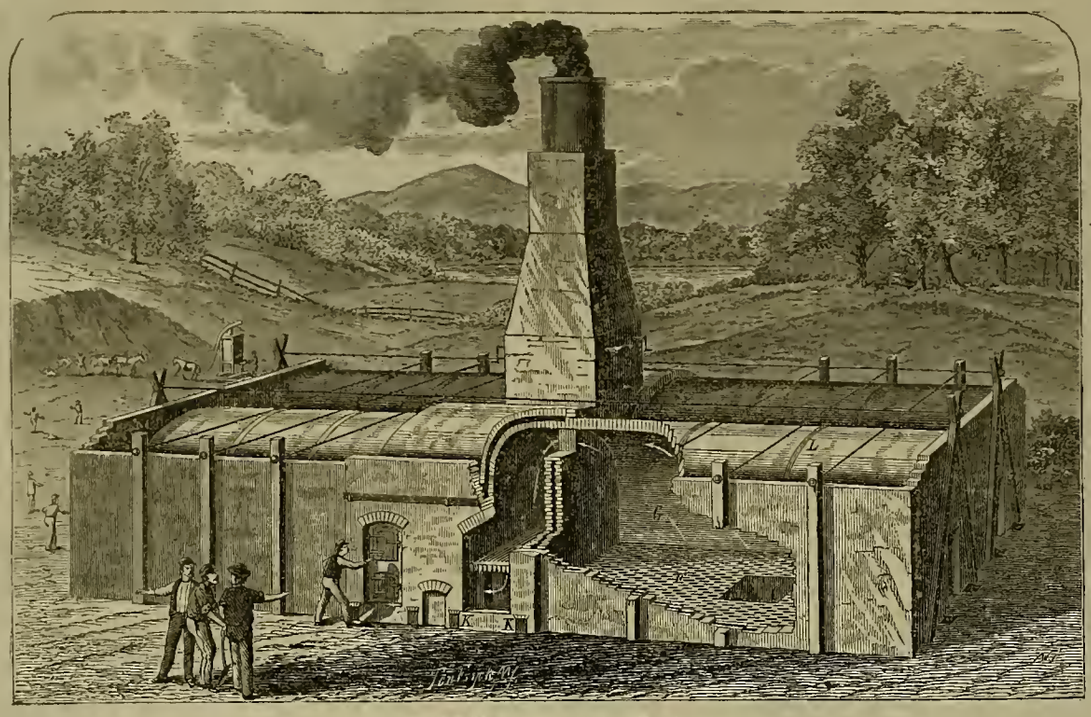
THE EXCELSIOR MINE.—Some very rich specimens from this mine may be seen at the office of Messrs. Travis & Wagner, No. 41 First street, who hold a controlling interest in the mine. The ledge is situated in Kelsey District, El Dorado county, Cal., two miles northeast of the St. Lawrence. A shaft has been sunk 70 feet on the lode, which averages 2½ feet in thickness. The footwall is porphyry and the hanging wall slate. Three working assays of the ore average $19 per ton in gold. The last working test made by G. W. Strong, No. 10 Stevenson street, in this city, yielded at the rate of $31.25 per ton; the rock worked being taken as it came from the shaft.

The Hawley Brick Kiln.

Among the more important recent inventions at present attracting public attention, we find the Hawley Kiln—by it or some similar method, the entire art of burning brick, tile, pottery, etc., must become revolutionized.

In the old-fashioned way of burning (from below, upward) there are two serious obstacles to a satisfactory end; the unavoidable and excessive expense for fuel, and imperfect results under the best management.

The mode of operation of this kiln completely inverts the traditional method. By it the products of combustion are introduced into the top of a close burning oven, while exhaustion is effected from the bottom, thus practically confining all the heat to its legitimate work and securing uniform exposure of the contents of the burning oven and avoiding the production of clinkers, benches and pale bricks.



HAWLEY'S PATENT KILN—FIG. 1.

To illustrate the *modus operandi:* Fig. 1 represents a perspective view, showing the left hand anterior chamber in process of burning, while a part of the walls of the right hand chamber, furnace, and floor, is broken away in order to show something of the internal arrangement, (a piece of the floor has been left out in chamber *G*, to show the situation of condensing well, *C*, underneath). Fig. 2 is a vertical section, with arrows showing the course of the currents during the process of utilization of heat. Fig. 3 is a diminished foundation plan, showing the locations of the wells for retaining condensed steam and ducts leading from the chimney. Fig. 4 represents a portion of the permanent floor of the burning chambers, showing the construction and mode of support.

(To illustrate the manner of burning the first chamber, refer to Fig. 2, left hand furnace and oven, isolating in imagination this part from the rest of the drawing. The course of the arrows, beginning at the ash pits, shows the direction of the currents during burning).

The room, *A*, is filled with green material, and the chimney damper, *D*, opened. The cold air draft to feed the fires in the furnace enters (through openings, *K K*, seen in Fig. 1) on each side of the ash pit doors, and rises in appropriate vertical flues until it enters the open space between the double arch over the furnace; thence it passes downward between the double side walls of the furnace, and enters the ash pit under the grate bars.

During the progress of burning, the furnace walls become intensely hot, and the incoming fresh air, by contact with these walls, during its transit to the grates becomes so highly heated as to ignite all the smoke and gases generated from the fuel (whether wood or coal), thus securing almost perfect combustion.

The products of combustion rise upward in the furnace, *B*, and enter through the opening (in the direction shown by the arrows) into the burning chamber, *A*. Having no avenue of upward escape, the heated air spreads itself in a level stratum throughout the top of the chamber, displacing and expelling at the same time an equivalent in bulk from the bottom of the room into the sub-chamber or condensing well, *C*, situated underneath the floor of the burning oven, from which it escapes up the chimney flue, controlled by the damper, *D*.

During the process of burning, the incoming heated air generates steam freely from the green material contained in the oven; this steam gravitates in a level stratum, is condensed below (thoroughly saturating the material), and acts as a sort of *automatic damper*, which resists or retards the closely following or descending stratum of ignited gas which, at a white heat, is thus caused to expend its force completely, above; for while the steam damper prevents the escape of heat, at least above the steam point (212 Fah.), it does not materially obstruct the natural draft.

This task of retarding the descending stratum of intense heat until after it completes the burning process, through and below, the lowermost courses in the burning chamber, is effected by providing the sub-chamber or well, *C*, under the floor, *F*, of the oven, in which the descending steam is received, condensed, and retained in sufficient quantity to effectually arrest the escape and consequent loss of heat until the process of burning is completed.

In the burning material requiring extraordinary and prolonged exposure to intense heat (fire brick, etc.), he finds it necessary sometimes to furnish an artificial supply of water in this well, to be generated into steam (damper) and thus check for a longer time the escape of heat up the chimney.

In treating peculiarly refractory clays, particularly fire clay, requiring prolonged and steady exposure to a white heat, Mr. Hawley adopts a slight modification of the method above described, in order to save the fuel, otherwise expended in vaporizing the artificial supply of moisture in the well.

He connects chimney flue, *I*, with cross duct, *J*, (opening controlled by a damper) and from cross duct, *J*, into either furnace.

By this means, when the "water smoke" is dried off from previous chamber, and the contents of the room throughly heated, and its chimney damper, *D*, shut off, (thus stopping direct escape up chimney) he turns the draft through duct, *J*, into another furnace, and its adjoining chamber and chimney flue, to dry in advance the contents of the next room to be burned.

To illustrate the utilizing process, we again refer to Fig. 2, where we will imagine the process, just above described, as having taken place in chamber, *G*, instead of *A*; therefore, the right hand chamber is now filled with a glowing mass of hot material. The left hand chamber, *A*, is filled with green material. The damper, *D*, to chamber *G*, is closed, thus closing the outlet from the under floor into the chimney. The damper, *D*, of the chamber, *A*, is opened, the dampers controlling the communication between the ash pits, *I*, of the furnaces are opened, the direct draft dampers are shut (see *K. K.* Fig. 1), and the dampers at *E*, for the cold air inlet under the floor of the hot oven, are opened.

By the course of the arrows, it may be seen, the inventor takes all his draft in at *E*, and converts the incandescent mass contained in the oven, *G*, into an enormous furnace, passing this heated air over into the chamber, *A*, and thus using it at the proper stage for a hot blast, and under the furnace, *B*, and at the same time cooling rapidly and safely the contents of *G*. In cases where it becomes necessary to continue the exposure of the lowermost courses to white heat, an equal length of time with the top courses, the inventor, instead of utilizing by reversing the current from *E* backward, and thus cooling bottom courses first, shuts opening *E*, and damper, *D*, and continues direct draft, as at first through *K*, *K*, moving the currents in a continuous spiral direction, from the furnace through, oven and across duct, *J*, into the next furnace and oven, to be burned, and from thence into its appropriate chimney escape.

By means of the sub-duct, *J*, connecting all the ash pits, the heated air may be transferred to either of the burning chambers at discretion; or by a prolongation of the sub-duct, *J*, outward, any desirable amount of heated air may be conveyed to the outside structures for drying or other purposes.

Taking into consideration the value of the improved quality of stock turned out and the saving in fuel effected, it is claimed that the Hawley kiln makes a difference of at least two dollars per M. in the production of common brick, and the difference is still more evident in making the finer grade of "front" brick.

The kiln is in operation upon the works of the Adamantine Brick Press Co., Rochester, N. Y., and at the yard of Messrs. Cocks & Barlow, Croton Landing, N. Y.

For further information address A. R. Morgan, 103 Fulton St., N. Y.

Fig. 2.

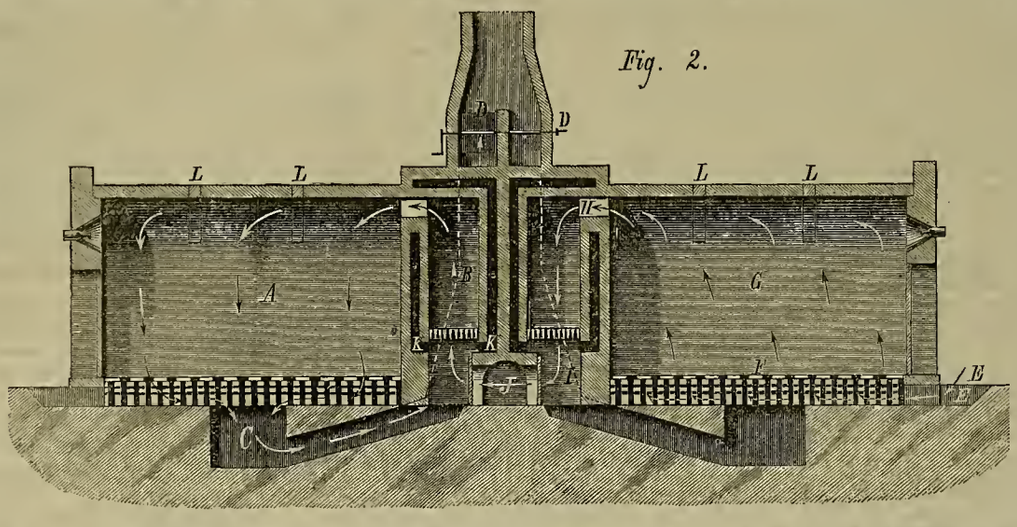


Fig. 3

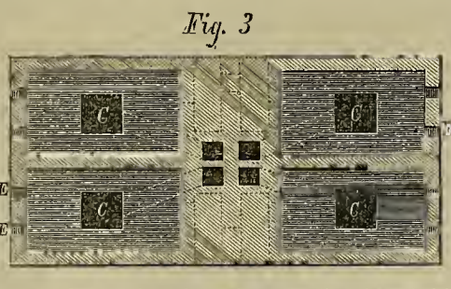
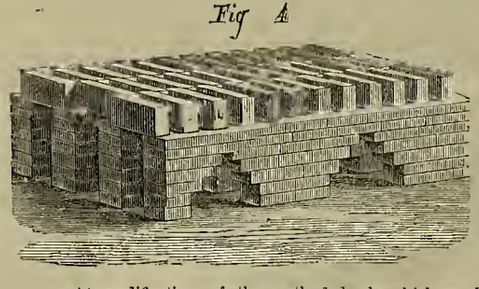


Fig 4



Dr. Payne's Scientific Lectures.—Dr. Payne, of St. Louis is giving an interesting course of lectures on medical and social topics at Platt's Hall. He will lecture on Monday evening next to ladies and gentlemen on "Self-made Men and Women." The Doctor is the author of a number of books which may be had at the Russ House.

Redington Quicksilver Mine.—A fire which occurred in the Redington mine on the 4th inst, destroyed the timbers in the shaft, (which was 150 feet deep,) two engines and the hoisting works. It is said there is sufficient ore on hand to keep the reduction works busy until the damages are repaired. The loss is estimated at between $20,000 and $30,000.

DOMESTIC ECONOMY.

How to Give Dinners.

The size of the party is a matter of consequence. Party is a nonn of most indefinite multitude. Some numbers arrange well a table—some ill. Six, ten, fourteen are favorite numbers. They balance symmetrically and give a proper alternation of sex. But as a general rule it should he set down that the "little dinner party" shall not comprise more than ten. But given six or ten well selected, judiciously grouped people, a round table, a moderate temperature, sufficient light, and a good dinner, and what further provocatiou does mortal man need to make him agreeable?—if agreeability within him lies.

The dinner need hy no meaus be elaborate. Soup, fish, a joint of poultry, and a pretty dessert, with hright conversatiou hy the way of sauce, is sufficient for any small party. And a dozen such in the course of a year do more toward cementing friendliness and extending our hospitable influence than any number of "swell" repasts from a confectioner's, or eveu than a hiennial jam of the most recherche kind, presided over by Brown or furnished hy Iauch.

Every table should have a center—and that center should not stand too high. Be it fruit, flowers, or confectiouery, its top should he helow the level of the eye. Nothing interferes with talk to much as to be forced to dodge this way and that to catch a glimpse of one's opposite neighhor. There should not he too much on the table at a' time. A crowded look destroys elegance. The eye demands space as well as the elhow. Two vegetables with each course are sufficient.

Hot plates, iced water. Blessed duo! Temperature should be studied by every housekeeper. It is all-important and within the reach of all. A cold plate makes a good dinner bad, and a had one horrible. A hot plate (which costs nothing) improves everything. A hot room dulls and stupefies. Conversation wilts with the flowers.

If the dinner service be white it can be enlivened hy various little touches. The napkins may hoast a scarlet initial or monogram. Folded napkins with similar letters in the center may be laid to receive the dishes in lieu of table-mats. Fiuger-howls may he arranged to form groups of prettily contrasted tints. Flowers in the center, or heside the plate of each guest, are prettiest of all. Nothing leuds such grace to food as flowers.

A delicate finish should characterize each detail, and a certaiu amount of ornament. Every dish is susceptible of heing made pretty as well as eatahle. A bunch of parsley, a circle of sliced lemon, vegetables cut into pretty forms, potato, rice, hread-crumbs, quilled paper, adjuncts neither troublesome nor expensive, may be made to give a look of elegance to simple fare. Above all things, perfect and dainty neatness, hest ornament of all, and that cordial home-atmosphere which confers savor even upon a dry crust.—*Scribner's Monthly.*

YELLOW PICKLE—WILL KEEP FOR YEARS.—One pound race ginger—lay in water over night—in the morning scrape and cut it in thin slices, rub it thoroughly with salt and let it stand in the sun to dry. Take two ounces of long hlack pepper and prepare in the same way; one pouud of garlic cut in thin slices and salted; let it stand three days; then wash it well, ealt it again, and let it etand three days longer. Then wash, drain, and put in the sun to dry. Take a quarter of a pound mustard seed, brüised, and two ounces of tumeric; put all these ingredients, when prepared, into a large stone jar with a gallon of good cider vinegar; stir it daily for ten or twelve days; keep it closely tied; into this pickle you may put cabbage, cauliflower, small cucumbers, melons, heans (snaps), and very young ears of corn. The cabbage must be firm, white heads, small, quartered, and laid in salt and water for three days; then boil fresh salt aud water and scald the cahhage; press out the water aud lay it in the sun to dry. The other fruits and vegetahles must be prepared in the same manner. Care must be taken that the iugredients are well dried before they are added to the viuegar. The jar need never he emptied. You can add the fruits and vegetablee from year to year as they come in season and supply the vinegar as it is required.

TO BOTTLE GREEN GOOSEBERRIES.—Remove the steme and blows, aud allow about a half pound of sugar to a pound of herries. If you wish them whole, you will need a little water. Put a layer of sugar and goosherries, and so on, and then water nearly to cover them, hut not quite. Put the fruit into the bottles hy the teacupful. Take them from from the kettle solid iu the cup, hut allow some of the hoiling juice, or they will chill. Have the hottle full of the berries, and then cover with whatever quantity of the boiling juice is necessary. If you want them made into jam, let them stew until a pulp is formed, and use no water. Ripe gooseherries are hetter made into a jam; a httle less sugar tban for the green ones is required.

TO DRY CITRON OR WATERMELON RIND.—After preserving place in the sun and dry. They answer well in puddings and cakes as a substitute for the imported citron.

MISCELLANEOUS.

Observations of a Practical Miner.

ENS. PRESS:—If two mineral veins of the same composition dip toward each other so as to form a junction at a ccrtain depth, the intersectiou usually causes a great change for better or worse. The vein and surrounding strata, for many feet, are sure to present a disturbed and contorted appearance, after which the two may continue iu their own course; or one, heing strouger, may take the other along with its course, afterward forming one vein; or perchance hoth may be destroyed. Also if two veins intersect each other at right angles the stronger is certain to pass through the weaker; sometimes a total destructiou is the resnlt, or the lode may he displaced—"heaved,"—and geuerally at right angles.

I visited a mine in Great Britian where a rich and massive vein of copper ore, at the intersection of another vein or cross course, was thrown to the right, at a right augle, 600 feet. This disturbance perplexed the managers, and caused a vexatious delay; but when discovered it was not an iota decreased in size or value.

Wherever there is a vein dipping parallel or with the hill wherein it is emhedded, near the surface, so that a cross-cut can intersect it at the depth of one, two or five hundred feet, and iu nearly the same number of feet, such a vein will be found almost without an exception unproductive, and will continue so until it arrives at the foot of the hill, so that it can be covered hy a greater amount of the surrounding formation. When, if it continues in depth, it will generally be found profitahle.

Some veins dip many hundred feet without a variation, and all of a sudden turn in a contrary direction, owing to some freak or convulsion of Nature, or perhaps to a sudden hardeniug of the stratification. When such an event occurs, the vein will generally be a champion one, otherwise it would he ohliterated, for such a change is too great for a weak or diminutive one, which would split up aud scatter in every direction.

Frequently veins are pinched as it were into a space of a few inches, or even to only a mere line of division of the rock hy a sudden change of the strata; hut they usually widen out again to their former size, in depth or distance. Such veins have strength and when expanding, favorable results may be looked for.

When it is desired to prospect for other veins or deposits, at a considerahle depth in a miue, cross-cutting hy drifting is the only alternative, and should he prosecuted more frequently. In doing so, wheu iu proximity to a veiu which has streugth or indication of permanency, the strata always dips with the vein, uotwithstanding prior to the approximation the strata may dip contrawise. If the whole appear as if disturbed, and the divisions or interstices of the rock dip in every direction, and contiuue so until it assumes the parallel declination of the vein, the rocks will be thiuly disseminated throughout with particles of mineral characteristic of the vein. With such symptoms no doubt need be entertained; whereas, if none of those signs are present, no true vein or large deposit of mineral is near. T. S.

Mining in Central Asia.

Peculiar Iron Smelting.

Mr. Shaw, British Commissioner in Ladak, says *Van Nostrand*, in his "Visits to High Tartary, Yarkand and Kashgar (formerly Chinese Tartary), gives an interesting account of the primitive metallurgical processes in a country undouhtedly rich in underground wealth. From him we learn that the iron-smelting furnace is just like a dice-box, four or five feet high, with a roof over it, leaving an exit in the middle for the smoke. Rouud the dice-box, under the roof, sit six hoys and girls hlowing skin-bellows with each haud, 12 hellows in all. Au opening shows the glowing mass, with a stream of molten stuff slowly oozing downwards. A pit, two feet deep, showe the bricked-up door of the furnaces through which the metal is extracted daily. The ore is broken up hy a man with a hammer, who keepe throwing it in at the chimney, while another supplies coal through the same opening. No third subetance. Sixteeu pounds of ore aud the same quantity of charcoal are used in the twenty-four hours, and the produce is a little over three ponnds of iron. The metal is very good and fine grained, looking almost like steel when made up into tools. The molten metal is allowed to cool for a whole uight before the furnace is opeued. The ore is a hlack-looking stone, got by diggiug from the mountains 15 miles off

Mineral Products of Turkistan.

In Turkistan the most valuable production is Jade. The quarries are in lat. 36° 18′ N., and long. 78° 15′ E. The other mineral productions are copper, iron, lead and gold. The copper is said to be got uear Oksooi. The iron is got from the Kizil Tagh (Red Mts.) to the west of Yarkand, and is worked in the villages of Tohlok Kizil. Lead is got in some of the valleys near Sarikol. Koten is famous for its gold, of which there are several mines uuder the mountains uear Kashagar. At Kiria shafts are sunk to some depth to reach the auriferous beds, of which the earth is brought up to the surface and washed in cradles. Coal is reported found in the jungles east of Yarkand and douhtless exists in the mountaius of Andijan uear the town of Oosh.

The Silver Mines of Georgetown, Colorado.

This flourishing town is situated in an outspread cañon—about 8,500 feet above the level of the sea—the mountains that surround it are from 2,000 to 4,000 feet higher. The silver lodes are found in these lofty mountains. It is a well-established fact that the richest silver mines are those on high mouutains. Thus the famous miues of Potosi, in Mexico, are worked at an elevation of 13,000 feet. This miue has produced over one thousand millions of dollars worth of silver. Our best mines are at an elevation of from 9,000 to 10,000 feet.

There is no sign of our silver mines running out, as it is well kuown that many of the Mexican mines have been worked for over 500 years and are still productive—there is no evidence on record that any silver mine has yet been exhausted in a downward direction. The silver bearing rock is supposed to be 12,000 feet thick—a depth that will never be reached by the skill and energy of man. We are sometimes asked the question—"How many mines are there in Clear Creek county? We cannot answer this question now, but we will be able to answer it after some time. In the Rocky Mountain Directory for 1871, we find the names of 318 mines in Clear Creek county. But that is scarcely the half of our mines that are now either fully or partly opened. Then there are hundreds that are yet unopened, so we may put dowu the number at perhaps 1,000, and perhaps another 1,000 to be discovered. An old citizen of Clear Creek county has informed us that there are between 10,000 and 11,000 mines recorded in the County Records. This of course exceeds all our ideas of the number of mines in our county. Many of those mines are no doubt worthless, and will never be worked. But what are these mines worth? That is a question too, that cannot be answered now in a satisfactory manner, as only a few of our mines have beeu so far opened as to show what they are worth.

The Pelican, the Maine, the Laura Dale, the Snow Drift, the Silver Plume and the Terrible have been so far opened as to show immense stores of wealth. And hundreds of others would no doubt turn out as well if opened to the same extent. But silver mines, no matter how rich they are, will not open themselves—brains, muscle and money are needed to develop them. The last census gives the whole valuation of Colorado at $24,000,000. Our impression from what we have seen is that the silver mines of Clear Creek county alone are worth twice that amount.

In order to encourage the miners aud operators in Clear Creek county to press on with their work, we give a few well authenticated facts as to the yield of silver in othes places. The Veta Madre vein in Mexico, has already yielded upward of $235,000,000; and the Veta Grande vein of Zacatecas, has in about 300 years produced the enormous amount of $950,000,000! One mine in Mexico, called Paulleon, is said for a long time to have produced $20,000 worth of silver a day. It is said the Comstock lode, in Nevada, yielded in thirteen years, over $60,000,000, and in 1866, there were taken from that lode $16,500,000 worth of silver!

If our mines come any where near those now mentioued, we may form some idea of what our thousands of mines may produce when they are fully opened and worked with wisdom and energy.—*Colorado Miner.*

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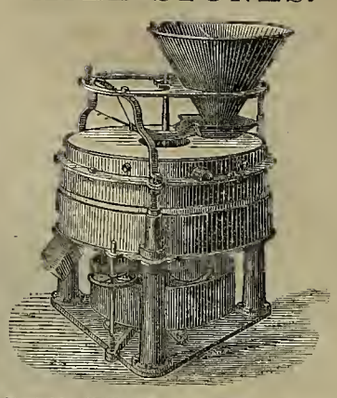

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FOR THE WEEK ENDING JULY 16TH.

STAGE MACHINERY.—Geo. Washington Hinckley, San Francisco, Cal.

SHOE-FASTENING.—Ira J. Saunders, Davisville, Cal.

REVOLVING FIRE-ARM.—John Gordon, San Francisco, Cal.

MEDICAL COMPOUND FOR SMALL-POX.—Alber Haws, Battle Mountain Station, Nevada.

MEDICAL COMPOUND FOR CHOLERA-INFANTUM, ETC.—Alhert Haws, Battle Mountain Station, Nevada.

DIRECT-ACTING STEAM-ENGINE.—William Davis Hooker, San Francisco, Cal.

PROPELLING MECHANISM FOR BOATS.—Patrick Rippingham, Virginia City, Nev.

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New Incorporations.

THE KEYSTONE ANN BOSTON CONSOLIDATED M. Co.—Aug. 9. Location: Castle Peak District, Mono county. Capital $3,000,000, in 30,000 shares. Trustees —W. A. Searles, O. H. Bogart, G. K. Porter, and A. F. Bryant.

CALIFORNIA COLLEGE OF PHARMACY.—Aug. 8. Objects: To promote, advance, acquire and disseminate knowledge in pharmaceutical science to thoroughly educate all persons who may embrace it as a profession, and to develop and foster such other and kindred knowledge and acquirements in the arts and sciences as may be conducive to the success of said institution. Capital stock, $100,000, in 1,000 shares. Trustees—John Calvert, James G. Steele, Wm. T. Wenzel, J. W. Forbea, William E. Mayhew and William Simpson.

GREAT WESTERN QUICKSILVER M. Co.—Aug. 8. Location: Lake county. Capital stock $5,000,000. Trustees — Josiah Belden, Dexter Taft, G. T. Lawton, P. H. Kraner, and Edmund Green.

TREASURE HILL S. M. Co.—Aug. 10. Location Wallapai District, Mojave county, Arizona. Capital stock, $2,000,000, in 20,000 shares. Trustees — George Scott, F. R. Lewis, W. S. Schofield, Mark Zellerhack and William H. Sears.

CARSON CONSOLIDATEN M. Co.—Aug. 12. Location: Ormshy county, Nevada. Capital stock $10,000,000, in 100,000 shares. Truseees — R. F. Knox, J.F. Nesmith, J. S. Jameson, A. D. Carpenter, and E. J. Hutchinson.

PACIFIC FISHING CO.—Aug. 12. Object: Fishing in the Pacific Ocean, and its bays and tributariea, and for the purpose of selling fish in the markets of the Pacific States and elsewhere if desirahle. Capital stock, $50,000, in 1,000 shares. Trustees—John Mullen, Tyler Curtis, Charlei A. Cushing, George D. Carter, and R. F. Mann.

SIERRA S. M. Co.—Aug. 14. Location: Humboldt county, Nevada. Capital stock, $1,000,000, in 10,000 sharea. Trustees—John C. Fall, S. D. Stewart, P. H. Kraner, J. M. Goewey, H. L. Coye.

MOUNTAIN VIEW CONSOLIDATEN S. M. Co.—Aug. 14. Location: Eureka M. district, Nevada. Capital stock, $2,200,000, in 22,000 sharea. Trustees—M. McDonald, J. Lincoln, J. Pritchard, J. M. Case, and J. A. Albertson.

THE CALIFORNIA PAPER MANUFACTURING Co. Aug. 14. Object: the manufacture and purchase and sale of all kinda of papers and paper materials, and the purchase and operating of paper mills, macninery and appurtenances. Capital stock, $200,000, in 2,000 shares. Trustees—J. C. Merrill, Henry Dutton, L. H. Bonestill, R. A. Swain, J. S. Doe, W. W. Montague and J. Tyler, Jr.

Meetings and Elections.

The following Trustees of the Sutro Tunnel Co. were elected on the 2d inst.: J. Aaron, (President); C. W. Brush, (Vice-President); T. C. Wedderspoon, A. Seligman, J. B. Felton, E. N. Hooper and S. Heydenfeldt. A. Sutro was elected Superintendent.

The Consolidated Gold Hill Quartz Mining Company have elected the following Trustees: G. W. Beaver (President), R. J. Morrow, M. Lewis, H. H. Flagg, Charles Forman. R. Wegener was continued as Secretary.

At the annual election of the Mohave Consolidated Gold and Silver Mining Company, (located in Wallapai District, Arizona), held on the 9th inst., the following officera were elected: Trustees—T. G. Phelps, Henry Raymond, Judge C. P. Hall, H. W. Smith, and T. G. Bery. Judge C. P. Hall, President, T. J. Jewell, Secretary.

At the annual meeting of the Pacific Rolling Mill Company, the following stockholders were elected Trustees for the ensuing year: L. B. Beuchley, D. O. Mills, Wm. Alvord, B. P. Bruner, and Bensley. Subsequently at a meeting of the Trustees, the following officers were elected, Wm. Alvord, President; L. B. Benchley, Vice-President and Manager; R. P. Bruner, Superintendent, and S. J. O. Sweezey, Secretary.

At the election of officera of the Southern Pacific Railroad Company, held on the 13th inst., C. P. Huntington was elected Preaident, Mark Hopkins Treasurer, and J. L. Willcutt Secretary. All of the Board of Directora were re-elected.

The Bismark S. M. Co. elected the following officere on the 8th inst.: D. L. McDonald, (President); Milo Hoadley, P. J. White, C. L. Place and W. J. Cady, Trustees; Joseph S. Cohn, Superintendent; Frank Swift, Secretary.

The Woodville M. Co. elected the following Trustees on the 8th inst.; J. A. Pritchard, M. D. Townsend, W. H. Sears, W. F. Meyera, and W. Ayer, A. Noel was elected Secretary, and L. W. Wood Superintendent.

The Ida Elmore M. Co. haa elected the following Trustees: J. S. Robertson, (President); Thos. Williams, G. W. Grayson, H. McPherson and M. J. McDonald. W. Willis Secretary.

The Tintic Eureka M. Co. have elected the following Trusteea: J. F. Woodman (President); D. L. McDonald, M. S. Hurd and J. M. Carter. Jos. L. King was elected Secretary.

The California Silk Manfacturing Company, have elected the following Trustese: J. T. Dean, and P. B. Cornwall. F. B. Wilde was chosen Secretary.

The Monitor-Belmont M. Co. have elected as Trustees: J. B. Haggin, (Preaident), C. J. Brenham, C. H. Burton, J. Clark and B. B. Minor (Secretary).

The Mohave Consolidated M. Co. have elected the following Trustees: C. P. Hall, (Presidut); T. G. Phelps, Henry Raymond, T. G. Berry and H. W. Smith. T. J. Jewell was elected Secretary.

The National M. Co. have elected as Trustees: J. B. Haggin, (President), B. B. Minor (Secretary), J. Dolbeer, W. J. Richardson and Julius Ordway (Superintendent).

UTAH ITEMS.—A number of miners are leaving Salt Lake for Montana, in consequence of the reported discoveries of rich mines near Granite rock and Dugway District. Expeditions are heing organized to hunt for diamonds in Arizona. Receipts of ore from Little Cottonwood have greatly diminished. No ore is coming to Salt Lake from the Emma mine, owing to the cave. Memhers of the Imperial Society of Mineralogy and the Imperial Geographical Society of Russia, under the auspices of the Russian Government, arrived in Salt Lake City on the 12th inat, to examine the mineral reaourcea of the country. Mining operations and business generally are unusually dull, the new discoveries in the desert and the Parley's Park mines abaorbing the particular attention of capitalists.

San Francisco Metal Market.

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, Augnet 15, 1872.

IRON.—			
Scotch Pig Iron, ₱ ton	$65 00	@	— —
White Pig, ₱ ton	50 00	@	55 00
Refined Bar, bad assortment, ₱ lb	— 04½	@	— 5
Refined Bar, good assortment, ₱ lb	— 05	@	— 5½
Boiler, No. 1 to 4	— 05½	@	— 06
Plate, No. 5 to 9	— 06½	@	— 07
Sheet, No. 10 to 13	— 07½	@	— —
Sheet, No. 14 to 20	— 07½	@	— —
Sheet, No. 24 to 27	— 08	@	— —
Horse Shoe	8 00	@	
Nail Rod	10		
Norway Iron	8		
Rolled Iron	11		
Other Irons for Blaokemiths, Miners, etc.	5½	@	5½
COPPER.—			
Sheathing, ₱ lb	— 40	@	— 45
Sheathing, Yellow	— 28	@	— 30
Sheathing, Old Yellow	— 12	@	— 12½
Composition Nails	— 28		— 30
Composition Bolts	— 28		— 30
TIN PLATES.—			
Plates, Charcoal, IX ₱ box	17 50	@	— —
Plates, I C Charcoal	15 50		— —
Roofing Plates	15 50		16 —
Banca Tin, Slabs, ₱ lb	— 50		— 55
STEEL.—Englieh Cast, ₱ lb	— 15		— 16
Drill	15		16
Flat Bar	17		18
Plough Points	3 75		
Russia (for mould boarde)	12½		
QUICKSILVER.—₱ lb	— 85		— 87½
LEAD.—Pig, ₱ lb	— 03¾		— 06
Sheet	— 10		— —
Pipe	— 9		— 10
Bar	06½		— 07
ZINC.—Sheets, ₱ lb	— 11		— 11½
BORAX.—Refined	— 28		— 30
Borax, orude	— 5		— —

Leather Market Report.

[Corrected weekly by Dolliver & Bro., No. 109 Post st.]

SAN FRANCISCO, Thursday, Augnet 15, 1872.

SOLE LEATHER.—The Eastern market is higher, and some tanners have advanced their prices here. We quote as below:

City Tanned Leather, ₱ lb	26@29
Santa Cruz Leather, ₱ lb	26@29
Country Leather, ₱ lb	25@28
Stockton Leather, ₱ lb	26@29

French skins continue firm. All California skins are scarce and bring full prices.

Jodot, 8 Kil., per doz	$60 00@
Jodot, 11 to 19 Kil., per doz	68 00@ 88 00
Jodot, second choice, 11 to 15 Kil. ₱ doz	56 00@ 75 00
Lemoine, 16 to 18 Kil., ₱ doz	75 00@ 77 50
Levin, 12 and 13 Kil., per doz	68 00@ 70 00
Cornellian, 16 to 19 Kil., per doz	63 00@ 65 00
Cornellian, 12 to 14 Kil., per doz	60 00@ 68 00
Ogerau Calf, ₱ doz	54 00@
Simon, 18 Kil., ₱ doz	65 00
Simon, 20 Kil. ₱ doz	68 00
Simon, 24 Kil. ₱ doz	72 00
Robert Calf, 7 and 8 Kil	35 00@ 40 00
French Kips, ₱ lb	1 10@ 1 30
California Calf, ₱ doz	60 00 to 80 00
French Sheep, all colors, ₱ doz	15 00
Eastern Calf for Backs, ₱ lb	1 15@ 1 25
Sheep Roans for Topping, all colors, ₱ doz	9 00@ 13 00
Sheep Roans for Linings, ₱ doz	5 50@ 10 50
California Russett Sheep Linings	1 75@ 5 50
Best Jodot Ca f Boot Legs, ₱ pair	5 25
Good French Calf Boot Legs, ₱ pair	4 50@ 5 00
French Calf Boot Legs, ₱ pair	4 00
Harness Leather, ₱ lb	30@ 37½
Fair Bridle Leather, ₱ doz	48 00@ 72 00
Skirting Leather, ₱ lb	34@ 37½
Welt Leather, ₱ doz	30 00@ 50 00
Buff Leather, ₱ foot	18@ 21
Wax Side Leather, ₱ foot	20@ 22

Mining and Other Companies.

Owing to the time necessary to mail the present large edition of the M. & S. Press, we are obliged to go to press on Thursday evening—which is the very latest hour we can receive advertisements.

Corona Consolidated Mining Company—

Location of works, Eureka District, Lander County, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 25th day of June, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Charles Hanson	229	100	$10 00
Charles Hanson	230	100	10 00
Charles Hanson	233	50	5 00
Charles Hanson	234	20	2 00
Charles Hanson	238	50	5 00
Charles Hanson	239	50	5 00
Charles Hanson	240	50	5 00
Charles Hanson	241	50	5 00
Charles Hanson	242	50	5 00
Charles Hanson	272	50	5 00
Charles Hanson	274	50	5 00
Charles Hanson	275	25	2 50
Charles Hanson	276	25	2 50
Charles Hanson	277	25	2 50
J M Foley	151	4000	400 00
D H Hall	324	500	5 00
D H Hall	325	500	50 00
D H Hall	326	500	50 00
D H Hall	327	500	50 00
D H Hall	328	200	20 00
D H Hall	329	200	20 00
D H Hall	330	100	10 00
D H Hall	331	100	10 00
D H Hall	332	100	10 00
D H Hall	333	50	5 00
D H Hall	334	50	5 00
D H Hall	335	50	5 00
D H Hall	336	50	5 00
D H Hall	337	25	2 50
D H Hall	338	25	2 50
D H Hall	339	25	2 50
D H Hall	340	25	2 50
H P Coon, President	160	4000	400 00
H P Coon, President	161	4000	400 00
H P Coon, President	206	3000	300 00
E A Richardson, Trustee	163	200	20 00
E A Richardson, Trustee	164	200	20 00
E A Richardson, Trustee	165	400	40 00
E A Richardson, Trustee	166	500	50 00
E A Richardson, Trustee	167	500	50 00
E A Richardson, Trustee	169	500	50 00
E A Richardson, Trustee	170	500	50 00
E A Richardson, Trustee	171	500	50 00
E A Richardson, Trustee	172	500	50 00
E A Richardson, Trustee	173	200	20 00
E A Richardson, Trustee	175	200	20 00
E A Richardson, Trustee	177	200	20 00
E A Richardson, Trustee	179	100	10 00
E A Richardson, Trustee	180	100	10 00
E A Richardson, Trustee	181	100	10 00
E A Richardson, Trustee	182	100	10 00
E A Richardson, Trustee	183	50	5 00
E A Richardson, Trustee	184	50	5 00
E A Richardson, Trustee	185	50	5 00
E A Richardson, Trustee	186	50	5 00
E A Richardson, Trustee	187	50	5 00
E A Richardson, Trustee	188	250	25 00
E A Richardson, Trustee	190	50	5 00
E A Richardson, Trustee	191	50	5 00
E A Richardson, Trustee	192	50	5 00
E A Richardson, Trustee	193	50	5 00
E A Richardson, Trustee	194	50	5 00
E A Richardson, Trustee	195	50	5 00
E A Richardson, Trustee	196	50	5 00
E A Richardson, Trustee	197	50	5 00
E A Richardson, Trustee	198	100	10 00
E A Richardson, Trustee	199	100	10 00
E A Richardson, Trustee	200	100	10 00
E A Richardson, Trustee	201	100	10 00
E A Richardson, Trustee	202	100	10 00
E A Richardson, Trustee	203	20	2 00
E A Richardson, Trustee	204	20	2 00
E A Richardson, Trustee	210	1000	100 00
E A Richardson, Trustee	211	500	50 00
E A Richardson, Trustee	212	500	50 00
E A Richardson, Trustee	213	250	25 00
E A Richardson, Trustee	214	250	25 00
E A Richardson, Trustee	215	100	10 00
E A Richardson, Trustee	216	100	10 00
E A Richardson, Trustee	217	100	10 00
E A Richardson, Trustee	218	100	10 00
E A Richardson, Trustee	219	100	10 00
E A Richardson, Trustee	220	100	10 00
E A Richardson, Trustee	221	50	5 00
E A Richardson, Trustee	222	50	5 00
E A Richardson, Trustee	223	50	5 00
E A Richardson, Trustee	224	50	5 00
E A Richardson, Trustee	225	50	5 00
E A Richardson, Trustee	226	50	5 00
E A Richardson, Trustee	268	25	2 50
E A Richardson, Trustee	269	25	2 50
E A Richardson, Trustee	270	25	2 50
E A Richardson, Trustee	271	25	2 50
W H Adams	205	10	1 00
W H Adams	267	20	2 00
L S Adams	207	200	20 00
H Dutton	208	200	20 00
C J Collins	227	100	10 00
C J Collins	311	1000	100 00
C J Collins	314	250	25 00
C J Collins	315	250	25 00
C J Collins	317	150	15 00
C J Collins	318	100	10 00
C J Collins	319	100	10 00
C J Collins	320	100	10 00
C J Collins	343	25	2 50
C J Collins	344	10	1 00
C J Collins	345	5	50
C J Collins	346	5	50
C J Collins	347	5	50
H A Cheever	244	500	50 00
H A Cheever	245	500	50 00
H A Cheever	246	500	50 00
H A Cheever	247	200	20 00
H A Cheever	248	200	20 00
H A Cheever	250	200	20 00
H A Cheever	251	200	20 00
H A Cheever	252	100	10 00
H A Cheever	253	100	10 00
H A Cheever	254	100	10 00
H A Cheever	255	100	10 00
H A Cheever	256	100	10 00
H A Cheever	257	50	5 00
H A Cheever	258	50	5 00
H A Cheever	259	50	5 00
H A Cheever	260	50	5 00
H A Cheever	261	50	5 00
H A Cheever	262	50	5 00
H A Cheever	263	50	5 00
H A Cheever	264	55	5 00
H A Cheever	265	50	5 00
H A Cheever	266	50	5 00
J Clem Uhler, Trustee	279	500	50 00
J Clem Uhler, Trustee	280	500	50 00
J Clem Uhler, Trustee	281	250	25 00
J Clem Uhler, Trustee	282	250	25 00
J Clem Uhler, Trustee	283	250	25 00
J Clem Uhler, Trustee	284	250	25 00
J Clem Uhler, Trustee	285	100	10 00
J Clem Uhler, Trustee	286	100	10 00
J Clem Uhler, Trustee	287	100	10 00
J Clem Uhler, Trustee	288	100	10 00
J Clem Uhler, Trustee	289	100	10 00
J Clem Uhler, Trustee	290	100	10 00
J Clem Uhler, Trustee	291	100	10 00
J Clem Uhler, Trustee	292	100	10 00
J Clem Uhler, Trustee	293	100	10 00
J Clem Uhler, Trustee	294	100	10 00
J Clem Uhler, Trustee	295	100	10 00
J Clem Uhler, Trustee	296	100	10 00
J Clem Uhler, Trustee	297	100	10 00
J Clem Uhler, Trustee	298	100	10 00
J Clem Uhler, Trustee	299	100	10 00
J Clem Uhler, Trustee	300	100	10 00
J Clem Uhler, Trustee	301	100	10 00
J Clem Uhler, Trustee	302	100	10 00
J Clem Uhler, Trustee	303	200	20 00
J Clem Uhler, Trustee	305	100	10 00
J Clem Uhler, Trustee	306	20	2 00
J Clem Uhler, Trustee	307	20	2 00
J Clem Uhler, Trustee	308	20	2 00
J Clem Uhler, Trustee	309	20	2 00
J Clem Uhler, Trustee	310	20	2 00
P H Sullivan	304	25	2 50
T F Cronise, Trustee	323	1000	100 00
J Cassell, Trustee	341	100	10 00
J Cassell, Trustee	342	100	10 00
W J Ranken	350	100	10 00
W J Ranken	351	100	10 00
W J Ranken	352	100	10 00
W J Ranken	353	100	10 00
Amasa Clark	349	100	10 00
H P Coon	168	2000	200 00

And in accordance with law, and an order of the Board of Trustees, made on the 25th day of June, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction at the office of the Company, 409 California street, San Francisco, Cal., on the 23d day of August, 1872, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale. T. F. CRONISE, Secretary.

Office, 409 California street, San Francisco, California.

Hudson Gold Mining Company—Location

of works, Cherokee Mining District, Plumas county, State of California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment (No. 1) levied on the Eighteenth (18th) day of June, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Fassett, H H	9	100	$10 00
Hausen, Geo	36	100	10 00
Ives, G I	7	100	10 00
Kenney, Chas A, Trustee	27	275	27 50
McClellan, H H	14	500	50 00
McClellan, H H	28	500	50 00
McClellan, H H	30	100	10 00
McClellan, H H	32	100	10 00
Mack, Julius	39	100	10 00
Olmsted, S E	40	375	37 50
Olmsted, S E	42	800	80 00
Rowe, Robert	35	250	25 00
Recklefisen, J Greggory	38	100	10 00
Uhler, J Clem, Trustee	26	200	20 00
Warner, Chas H	34	250	25 50

And in accordance with law and an order of the Board of Trustees, made on the eighteenth (18th) day of June, A. D., 1872, so many shares of each parcel of said stock as may be necessary will be sold at the office of the Company, No. 411 California street, San Francisco, California, on Saturday, the seventeenth (17th) day of August, A. D. 1872, at the hour of one (1) o'clock P. M., of said day, to pay said delinquent assessments thereon, together with costs of advertising and expenses of sale.

JOS. L. KING, Secretary.

Office, 411 California street, San Francisco, Cal.

NOTICE.—At a meeting of the Board of Trustees, held on the twenty-seventh (27) day of July, A. D., 1872, the above sale was postponed till Saturday, the twenty-fourth (24) day of August, A. D., 1872, at the hour of one o'clock P. M. of said day. JOS. L. KING, Secretary.

San Francisco, July 27th, 1872. aug-3t

Kincaid Flat Mining Company—Location

of Works, Tuolumne County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 17th day of July, 1872, an assessment of Three Dollars per share was levied upon the capital stock of said company, payable immediately, in United States gold coin, to the Secretary, at his office, No. 220 Clay street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 23d day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Saturday, the 14th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. H. CORNELL, Secretary.

Office, 220 Clay street, San Francisco. jul20-4t

Louise Mining Company—Location of

works, Ely Mining District, Pioche, Lincoln County, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the third (3d) day of July, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Adams, Q L	162	10	$1 00
Adams, Q L	153	10	1 00
Burke, John	213	50	5 00
Burke, John	215	50	5 00
Burke, John	217	100	10 00
Burke, John	218	100	10 00
Burke, John	223	200	20 00
Coburn, S A	85	100	10 00
Coburn, S A	89	100	10 00
Coburn, S A	90	100	10 00
Chase, A K, Trustee	110	25	2 50
Chase, A K, Trustee	111	50	5 00
Chase, A K, Trustee	113	50	5 00
Chase, A K, Trustee	154	10	1 00
Chase, A K, Trustee	155	10	1 00
Englander, L	298	50	5 00
Fischer, A	259	100	10 00
Fischer, A	260	100	10 00
Fischer, A	261	100	10 00
Fischer, A	262	100	10 00
Fischer, A	263	100	10 00
Geleich, V	158	50	5 00
Geleich, V	159	50	5 00
Golding, J	148	10	1 00
Golding, J	149	10	1 00
Golding, J	150	10	1 00
Golding, J	151	10	1 00
Grattan, O M	227	50	5 00
Grattan, O M	231	200	20 00
Ingerson, A W	245	50	5 00
Ingerson, A W	247	100	10 00
Raymond, S A	126	100	10 00
Raymond, S A	130	100	10 00
Winter, T P, Trustee	171	10	1 00
Wakelee, C H, Trustee	290	100	10 00
Wakelee, C H, Trustee	291	200	20 00
Watson, Geo P J, Trustee	294	50	500 00
Wilson, Wm M	306	100	10 00
Wilson, Wm M	311	55	6 60

And in accordance with law, and an order of the Board of Trustees, made on the 3d day of July, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, Room 5, No. 302 Montgomery street, San Francisco, Cal., on Saturday, the 7th day of September, 1872, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

WM. H. WATSON, Secretary.

Office, room 5, No. 302 Montgomery street, San Francisco. jul6.

Marcelina Silver Mining Company—Location of works, Eureka Mining District, Lander County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 24th day of July, 1872, an assessment of Thirty (30) Cents per share was levied upon the capital stock of said Company payable immediately in United States gold coin, to the Secretary, at the office of the Company, 419 California street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 9th day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 30th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees. CHAS. E. ELLIOT, Secretary.

Office, 419 California street, San Francisco, Cal.

Mina Rica Mining Company—Location of works, Auburn Mining District, Placer county, State of Nevada.

Notice is hereby given that at a meeting of the Trustees of said Company, held on the 6th day of August, 1872, an assessment (No. 7) of Twenty (20) cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, 320 California street, Room 5, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 10th day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on the 24th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees. GEO. K. SPINNEY Secretary.

Office, No. 320 California street, Room No. 5, San Francisco, Cal. Aug 9-4t

Morning Star Gold and Silver Mining Company—Location of works, Orcut Mogul District, Alpine County, state of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 12th day of July, 1872, an assessment of One Dollar per share was levied upon the capital stock of said company, payable immediately in United States gold and silver coin, to the Secretary, at the office of the Company, Room No. 43, New Merchants' Exchange, (3rd floor,) California street, in the City and County of San Francisco, State of California. Any stock upon which said assessment shall remain unpaid on the 20th day of August, A. D., 1872, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Saturday, the 14th day of September, A. D., 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

O. H. BUGART, Secretary.

Office, Room No. 43, Merchants' Exchange, California street, San Francisco. jul20-4t

Mount Jefferson Milling and Mining Company.—Location of works, First Garotte, Tuolumne county, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 25th day of July, A. D., 1872, an assessment of Ten Cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary, at the office of said Company. Any stock upon which said assessment shall remain unpaid on Monday, the 26th day of August, A. D., 1872, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Monday, the 16th day of September, A. D., 1872, at the hour of 2 o'clock, P. M., at the office of the Company, to pay the delinquent assessment together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. W. CLARK, Secretary.

Office, 418 California street, Room No. 2. aug3-4w

Nevada Land and Mining Company—Locations, Spruce Mountain, Clifton, and Antelope Mining Districts, Elko County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 15th day of July, 1872, an assessment of Eight Cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office. Any stock upon which said assessment shall remain unpaid on Saturday, the 31st day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the 19th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees. WM. H. WATSON, Secretary.

Office Room 5, No. 302 Montgomery street, San Francisco, California. jul20-4t

Norman Gold Mining Company---Location of works, Aqueduct Mining District, Amador County, California.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 27th day of June, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Eldridge, G C	17	100	$5 00
Eldridge, G C	18	100	6 00
Hosmer, D M, Trustee	43	300	15 00
Hosmer, D M, Trustee	44	500	25 00
Hallet, G. H	19	100	5 00
Humphreys, W. P	26	100	5 00
Humphreys, W. P	27	100	5 00
Hynemann, S	55	100	5 00
Levingston, J	7	100	5 00
Owens, Thurston C, Trus.	155	500	25 00
Owens, Thurston C, Trus.	156	500	25 00
Plummer, M D, Trustee	2	500	25 00
Plummer, M D, Trustee	34	300	15 00
Plummer, M D, Trustee	33	80	4 00
Plummer, M D, Trustee	153	100	5 00
Sheppard, J	54	100	5 00
Stewart, G W	86	200	10 00
Sewall, G, Trustee	131	100	5 00
Sewall, G, Trustee	132	400	20 00
Thompsom, J M, Trustee	14	500	26 00
Thompsou, J M, Trustee	49	500	25 00
Thompson, J M, Trustee	50	300	15 00
Thompson, J M, Trustee	107	3000	150 00
Thompson, J M, Trustee	109	200	10 00
Thompson, J M, Trustee	111	75	3 75
Teewilliger, N B	16	100	5 00
Weyman, W G	21	500	25 00
Wayman, W G	22	300	15 00
Wayman, W G	47	300	15 00
Wade, Rufus	24	100	5 00
Watson, Wm H, Trustee	63	1167	58 35
Watson, Wm H, Trustee	64	1000	50 00
Watson, Wm H, Trustee	67	100	5 00
Watson, Wm H, Trustee	68	100	5 00
Watson, Wm H, Trustee	69	100	5 00
Watson, Wm H, Trustee	70	100	5 00
Watson, Wm H, Trustee	71	100	5 00
Watson, Wm H, Trustee	72	100	5 00
Watson, Wm H, Trustee	73	100	5 00
Watson, Wm H, Trustee	74	100	5 00
Watson, Wm H, Trustee	75	100	5 00
Watson, Wm H, Trustee	76	100	6 00
Watson, Wm H, Trustee	77	50	2 50
Watson, Wm H, Trustee	78	60	2 50
Watson, Wm H, Trustee	79	60	2 50
Watson, Wm H, Trustee	80	60	2 50
Watson, Wm H, Trustee	81	50	2 50
Watson, Wm H, Trustee	82	50	2 50
Watson, Wm H, Trustee	83	50	2 50
Watson, Wm H, Trustee	84	50	2 50
Watson, Wm H, Trustee	86	60	2 50
Watson, Wm H, Trustee	87	20	1 00
Watson, Wm H, Trustee	88	20	1 00
Watson, Wm H, Trustee	89	20	1 00
Watson, Wm H, Trustee	90	20	1 00
Watson, Wm H, Trustee	91	20	1 00
Watson, Wm H, Trustee	92	20	1 00
Watson, Wm H, Trustee	93	20	1 00
Watson, Wm H, Trustee	96	20	1 00
Watson, Wm H, Trustee	97	30	1 50
Watson, Wm H, Trustee	98	30	1 50
Watson, Wm H, Trustee	99	30	1 50
Watson, Wm H, Trustee	100	30	1 50
Watson, Wm H, Trustee	101	30	1 50
Watson, Wm H, Trustee	102	30	1 50
Watson, Wm H, Trustee	103	30	1 50
Watson, Wm H, Trustee	104	30	1 50
Watson, Wm H, Trustee	105	30	1 50
Watson, Wm H, Trustee	106	30	1 50
Watson, Wm H, Trustee	108	666	33 30
Watson, Wm H, Trustee	130	100	5 00
Wurkheim M	110	25	1 25

And in accordance with law, and an order of the Board of Trustees, made on the 27th day of June, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, Room 5, No. 302 Montgomery street, San Francisco, Cal., on Thursday, the 22d day of August, 1872, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

WM. H WATSON, Secretary.

Office—Room 5, No. 302 Montgomery street, San Francisco. aug3-3t

Piermont Milling and Mining Company—Location of works, Piermont Mining District, White Pine County, Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the Tenth (10th) day of July, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Briggs, Charles A	16	583⅓	$360 00
Briggs, Charles A	47	101	66 60
McClure, R A	26	583⅓	350 00
McClure, R A	48	111	66 60
Perkins, J E, Trustee	21	1000	600 00
Perkins, J E, Trustee	23	1000	600 00
Perkins, J E, Trustee	41	381	228 60

And in accordance with law, and an order of the Board of Trustees, made on the 10th day of July, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of said company, on Tuesday, the 10th day of September, 1872, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

su17-4t J. W. CLARK, Secretary.

Office, Room No. 2, 418 California street, San Francisco, Cal.

Spring Mountain Tunnel Company—Location of works, Lincoln County, Nevada.

Notice.—There are delinquent upon the followlng described Stock, on account of assessment, No. 3, levied on the 9th day of July, 1872, the several amounts set opposite the names of the respective Shareholders as follows:

Names.	No. Certificate.	No Shares.	Amount.
J T Pomeroy	82	4	$1.20
J M Buffington, balance	6	955	286 50
David Leahy	132	1233	369.90
J T Dean	9	1000	300.00
J T Denn	126	180	54.00
A B Hoyt	90	640	192.00
J M Keeler	24	666	199.80
F A Munroe	29	50	15.00
F A Munroe	31	25	7.50
F A Munroe	33	25	7.50
H Lowenberg	75	80	24.00
Ann O'Neill	93	1333	399.90
W J Jeffards	96	20	6 00
I D Lewis	98	16	4.80
C W Lawler	102	8	2.40
Geo E Rogers, Trustee	120	1333	399.90
J T Pomeroy, Trustee	151	100	30.00
J T Pomeroy, Trustee	152	300	90.00
J M Buffington, Trustee	78	50	15.00
J M Buffington, Trustee	91	360	108.00
G H Hallett, Trustee	79	10	3.00
Ford H Rogers	124	1333	399.90
H T Wheeler	125	100	30.00
A G Prince, Trustee	128	80	24.00
James Meadowcroft	138	40	12.00
W H Preble	140	500	150.00
A G Prince, Trustee	168	100	30.00
A G Prince, Trustee	169	100	30.00
A G Prince, Trustee	170	50	15.00
M Tubbs, Trustee, bal	164	233	69.90

And in accordance with law and an order of the Board of Trustees, made on the 9th day of July, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction on the 9th day of September, 1872, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. M. BUFFINGTON, Secretary.

Office, room 37, Merchants' Exchange, California St., San Francisco, Cal.

Victoria and Imperial Tunnel and Mining Company.—Location of works, Little Cottonwood Mining District, Utah Territory.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 14th day of August, 1872, an assessment of Ten Cents (10c) per share was levied upon the capital stock of said Company, payable immediately in United States gold coin to the Secretary, at the office of the Company, Room 5, No. 302 Montgomery street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Wednesday, the 18th day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 12th day of October, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery street. nul4 4t

William Penn Consolidated Gold and Silver Mining Company—Location of works, Devil's Gate District, Storey County, State of Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment (No. 2) levied on the third day of July, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Thomas Finn	Unissued.	630	$63 00
D Murphy	Unissued.	40	4 00
H Toomy	Unissued.	1700	170 00
Thos McNamara	Unissued.	500	50 00
H F Cutter	Unissued.	1060	106 00
B M Hertshorne	Unissued.	600	60 00
John Hewston, Jr	Unissued.	250	25 00
Chas Minturn	Unissued.	500	50 00

And in accordance with law, and an order of the Board of Trustees, made on the third day of July, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, No. 6 Montgomery street, San Francisco, California, on Monday, the 2d day of September, at the hour of 12 M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of salo.

JNO. F. POPE, Secretary.

Office, No. 6 Montgomery street, San Francisco, California. aug10-4t

Winnemucca Chief Silver Mining Company—Location of Works, Humboldt County, State of Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 19th day of June, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
John Robins	159	100	$15 00
John Robins	160	100	15 00
John Robins	161	100	15 00
John Robins	162	100	15 00
John Robins	163	100	15 00
John Robins	164	100	15 00
John Robins	165	100	15 00
John Robins	166	100	15 00
John Robins	167	100	15 00
John Robins	168	100	15 00
John Robins	176	100	15 00
John Robins	177	100	15 00
John Robins	178	100	15 00
John Robins	179	50	7 50
John Robins	209	500	75 00
John Robins, Trustee	9	500	75 00
John Robins, Trustee	19	500	75 00
John Robins, Trustee	20	500	75 00
John Robins, Trustee	21	100	15 00
John Robins, Trustee	22	100	15 00
John Robins, Trustee	23	100	15 00
John Robins, Trustee	24	100	15 00
John Robins, Trustee	25	50	7 50
John Robins, Trustee	26	50	7 50
John Robins, Trustee	27	50	7 50
T F Cronise, Trustee	111	500	75 00
T F Cronise, Trustee	112	500	75 00
T F Cronise, Trustee	113	200	30 00
T F Cronise, Trustee	114	200	30 00
T F Cronise, Trustee	115	200	30 00
T F Cronise, Trustee	116	200	30 00
T F Cronise, Trustee	117	200	30 00
T F Cronise, Trustee	118	100	15 00
T F Cronise, Trustee	119	100	15 00
T F Cronise, Trustee	120	100	15 00
T F Cronise, Trustee	121	100	15 00
T F Cronise, Trustee	122	100	15 00
T F Cronise, Trustee	123	100	15 00
T F Cronise, Trustee	124	100	15 00
T F Cronise, Trustee	125	100	15 00
T F Cronise, Trustee	126	100	15 00
T F Cronise, Trustee	127	100	15 00
T F Cronise, Trustee	128	100	15 00
T F Cronise, Trustee	129	100	15 00
T F Cronise, Trustee	130	100	15 00
T F Cronise, Trustee	131	100	15 00
T F Cronise, Trustee	132	100	16 00
T F Cronise, Trustee	133	100	15 00
T F Cronise, Trustee	134	100	15 00
T F Cronise, Trustee	135	100	15 00
T F Cronise, Trustee	136	100	15 00
T F Cronise, Trustee	137	100	15 00
T F Cronise, Trustee	138	60	7 50
T F Cronise, Trustee	139	60	7 60
T F Cronise, Trustee	140	50	7 50
T F Cronise, Trustee	141	50	7 50
T F Cronise, Trustee	142	50	7 50
T F Cronise, Trustee	143	50	7 50
T F Cronise, Trustee	144	50	7 50
T F Cronise, Trustee	145	50	7 50
T F Cronise, Trustee	146	50	7 50
T F Cronise, Trustee	147	50	7 50
T F Cronise, Trustee	148	50	7 60
T F Cronise, Trustee	149	50	7 50
T F Cronise, Trustee	150	50	7 50
T F Cronise, Trustee	151	60	7 50
T F Cronise, Trustee	152	50	7 60
T F Cronise, Trustee	163	50	7 50
T F Cronise, Trustee	154	50	7 50
T F Cronise, Trustee	155	50	7 60
T F Cronise, Trustee	166	50	7 50
T F Cronise, Trustee	167	50	7 50
T F Cronise, Trustee	172	100	15 00
T F Cronise, Trustee	173	100	15 00
A C Peachy	52	3000	450 00
A C Peachy	63	1000	150 00
J H Crossman	74	200	30 00
J D Minor	11	100	15 00
M S Thompson	12	100	15 00
J J Lynn	13	100	15 00
C W Carter	14	100	15 00
M S Bonnifield	16	50	7 60
M S Bonnifield	17	50	7 60
T J Poulterer, Trustee	28	500	75 00
T J Poulterer, Trustee	29	500	75 00
T J Poulterer, Trustee	30	600	76 00
T J Poulterer, Trustee	32	500	75 00
T J Poulterer, Trustee	33	500	75 00
T J Poulterer, Trustee	34	500	75 00
T J Poulterer, Trustee	35	500	75 00
T J Poulterer, Trustee	36	600	75 00
T J Poulterer, Trustee	37	500	75 00
T J Poulterer, Trustee	38	500	75 00
T J Poulterer, Trustee	39	500	75 00
T J Poulterer, Trustee	40	500	75 00
T J Poulterer, Trustee	41	500	75 00
T J Poulterer, Trustee	42	500	75 00
T J Poulterer, Trustee	43	500	75 00
T J Poulterer, Trustee	44	500	75 00
T J Poulterer, Trustee	46	500	76 00
T J Poulterer, Trustee	47	600	75 00
T J Poulterer, Trustee	48	600	75 00
T J Poulterer, Trustee	49	500	75 00
T J Poulterer, Trustee	50	500	75 00
T J Poulterer, Trustee	51	500	75 00
T J Poulterer, Trustee	75	500	75 00
T J Poulterer, Trustee	76	200	30 00
T J Poulterer, Trustee	77	200	30 00
T J Poulterer, Trustee	78	100	15 00
T J Poulterer, Trustee	79	100	15 00
T J Poulterer, Trustee	80	100	15 00
T J Poulterer, Trustee	81	100	15 00
T J Poulterer, Trustee	82	100	15 00
T J Poulterer, Trustee	83	100	15 00
T J Poulterer, Trustee	84	50	7 50
T J Poulterer, Trustee	86	50	7 50
T J Poulterer, Trustee	87	50	7 50
T J Poulterer, Trustee	88	60	7 50
T J Poulterer, Trustee	89	60	7 50
T J Poulterer, Trustee	91	50	7 50
T J Poulterer, Trustee	93	35	5 25
T J Poulterer, Trustee	95	25	3 75
T J Poulterer, Trustee	96	25	3 75
T J Poulterer, Trustee	109	25	3 75
T J Poulterer, Trustee	110	25	3 75
T J Poulterer, Trustee	169	100	15 00
T J Poulterer, Trustee	170	100	15 00
T J Poulterer, Trustee	171	100	15 00
J Clem Uhler, Trustee	54	500	75 00
J Clem Uhler, Trustee	66	500	75 00
J Clem Uhler, Trustee	57	500	75 00
J Clem Uhler, Trustee	58	500	75 00
J Clem Uhler, Trustee	59	200	30 00
J Clem Uhler, Trustee	60	100	15 00
J Clem Uhler, Trustee	61	100	15 00
J Clem Uhler, Trustee	62	100	15 00
J Clem Uhler, Trustee	63	100	15 00
J Clem Uhler, Trustee	64	100	15 00
J Clem Uhler, Trustee	65	100	15 00
J Clem Uhler, Trustee	66	100	15 00
J Clem Uhler, Trustee	67	100	15 00
J Clem Uhler, Trustee	68	50	7 50
J Clem Uhler, Trustee	69	50	7 50
J Clem Uhler, Trustee	70	50	7 60
J Clem Uhler, Trustee	71	50	7 50
J Clem Uhler, Trustee	72	50	7 50
J Clem Uhler, Trustee	73	50	7 50
J Clem Uhler, Trustee	180	500	75 00
J Clem Uhler, Trustee	181	500	75 00
J Clem Uhler, Trustee	182	500	75 00
J Clem Uhler, Trustee	183	500	75 00
J Clem Uhler, Trustee	184	100	15 00
J Clem Uhler, Trustee	185	100	15 00
J Clem Uhler, Trustee	186	100	15 00
J Clem Uhler, Trustee	187	100	15 00
J Clem Uhler, Trustee	188	100	16 00
J Clem Uhler, Trustee	189	100	15 00
J Clem Uhler, Trustee	190	100	15 00
J Clem Uhler, Trustee	191	100	15 00
J Clem Uhler, Trustee	192	100	15 00
J Clem Uhler, Trustee	193	100	15 00
J Clem Uhler, Trustee	194	100	15 00
J Clem Uhler, Trustee	195	100	15 00
J Clem Uhler, Trustee	196	100	15 00
J Clem Uhler, Trustee	197	100	15 00
J Clem Uhler, Trustee	198	100	15 00
J Clem Uhler, Trustee	199	50	7 50
J Clem Uhler, Trustee	200	50	7 50
J Clem Uhler, Trustee	201	50	7 50
J Clem Uhler, Trustee	202	50	7 50
J Clem Uhler, Trustee	203	50	7 50
J Clem Uhler, Trustee	204	50	7 50
J Clem Uhler, Trustee	205	50	7 50
J Clem Uhler, Trustee	206	50	7 50
J Clem Uhler, Trustee	207	50	7 50
J Clem Uhler, Trustee	208	50	7 50
L L Robinsou	210	500	75 00

And in accordance with law, and an order of the Board of Trustees, made on the 19th day of June, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, No. 409 California street, San Francisco, California, on the 26th day of August, 1872, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale. T. F. CRONISE, Secretary.

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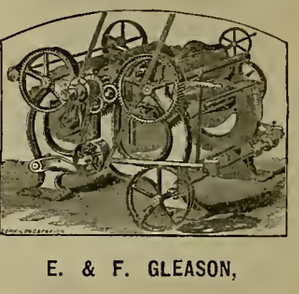

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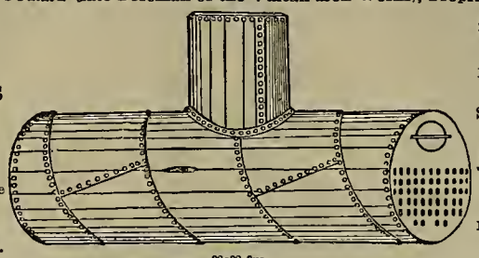

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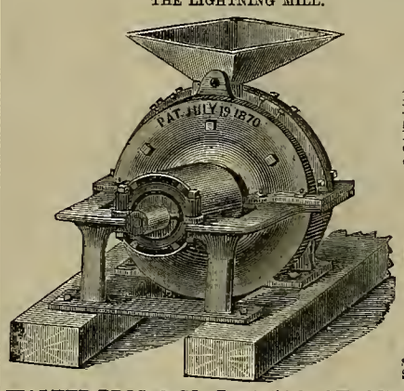

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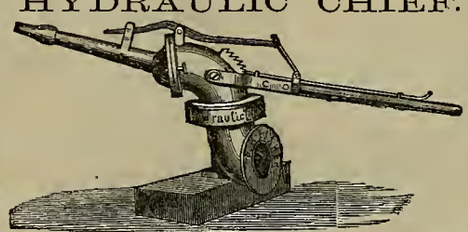

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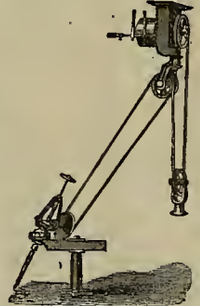

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The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the apperture and between the grinding surfaces.—Thence it is thrown to the periphory into the quicksilver. The cnrved plates again draw it to the center, whore it passes down, and to the circumference as before. Thus it is constantly passing a regular flow between the grinding surfaces and into the quicksilver, nntil the ore is reduced to an impalpahle powder, and the metal amalgamated.

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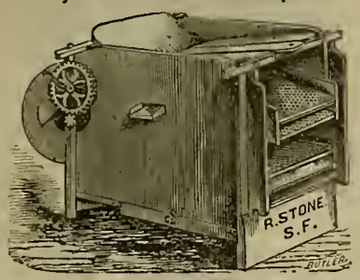

one of the greatest improvements of the age for cleaning and separating Grain, while it combines all the essential qualities of a first-class Fanning Mill. It also far excels anything that has been invented for the separation of Grain. It has been thoroughly tested on all the different kinds of mixed Grain. It takes out Mustard, Grass Seeds, Barley and Oats, and makes two distinct qualities of wheat if desired.

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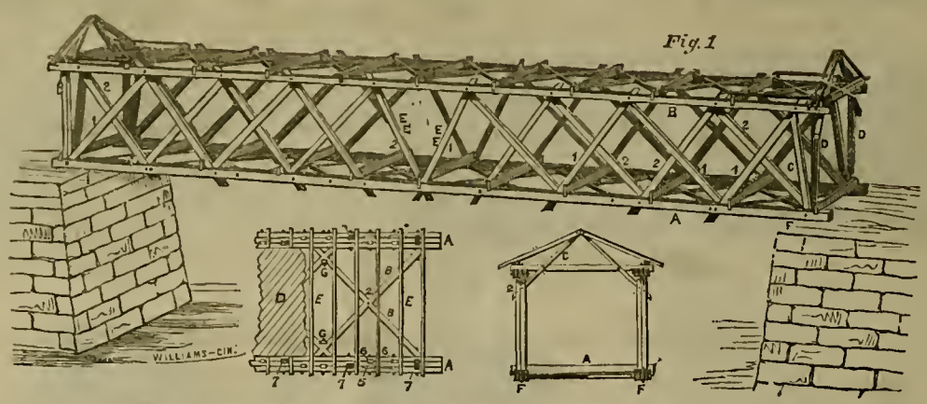

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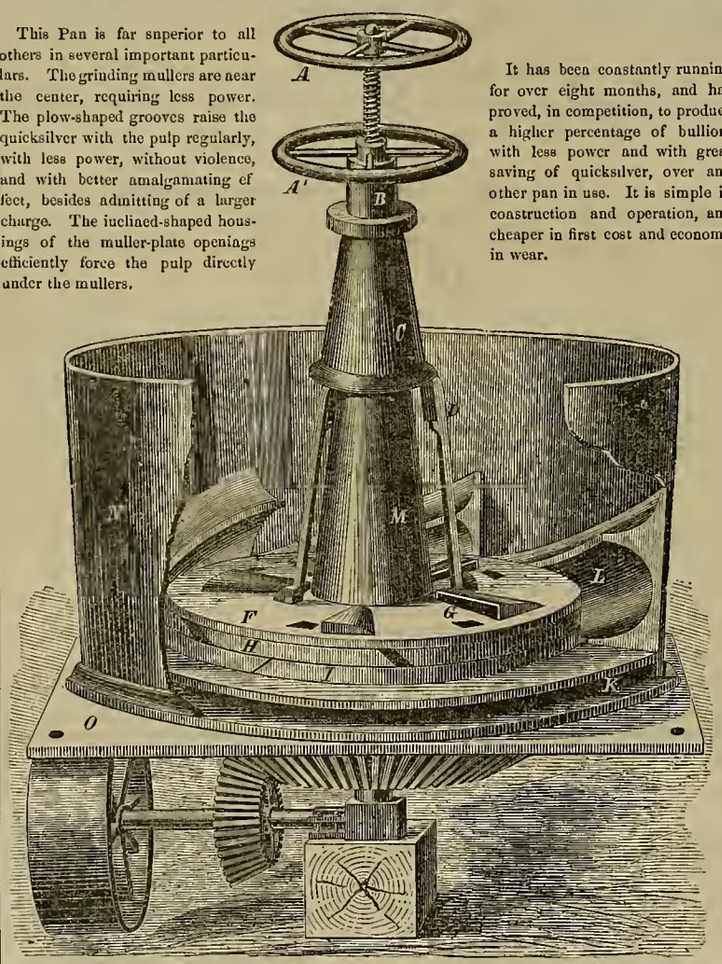

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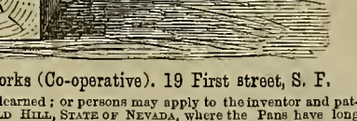

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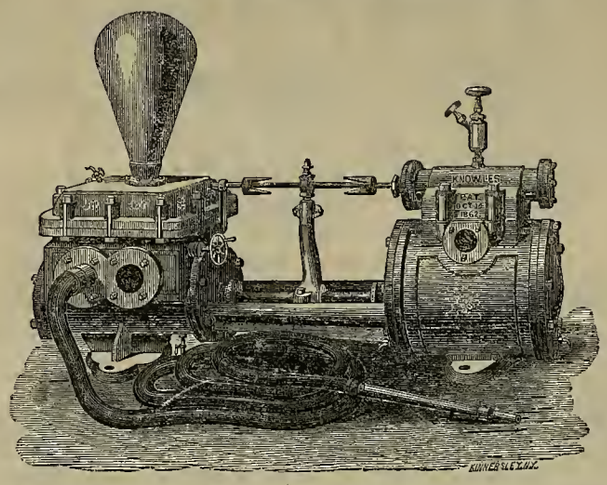

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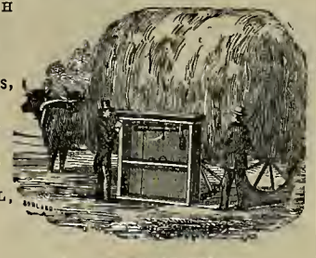

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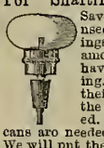

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SAN FRANCISCO, SATURDAY, AUGUST 24, 1872.

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The Diamond.—No. 3.

The Diamond Fields of South Africa.

The recent discovery of diamonds in Arizona very naturally leads to a desire for information with regard to other diamond fields, and in response to snch desire we append a brief sketch of the late discoveriea in this direction in Southern Africa.

The First Discovery of African Diamonds.

The region of the African diamond fields has for many years heen occupied hy several small colonies of agriculturists, who were entirely ignorant of the existence of precious stoues on or near their settlements, until some time in the early part of 1867, wheu an Euglish trader on the coast obtained from a farmer in the interior a stone, which upon examiuation, proved to be a valuable diamond, worth over $3,000. This discovery naturally led to further researches in the same neighhorhood, which resulted in the discovery of numerous other diamonds, of greater or less value, among which was a very large oue which, since heing cut, has hecome famous among celehrated diamonds and is known as the "Star of South Africa." It was sold in its rough state for $56,000. Discoveries were thus continned, and new and distant diamond placers were rapidly opened np, and it soon became evident that a new and vast aonrce of wealth was ahout to be developed in thia previoualy but little known portion of the world.

The opening np of this new field of enterprise was speedily followed by the influx of persons, not only from other and less favored portions of South Africa, but from almost all other qnarters of the globe. Nothing like it qad ever before heen witnessed except the rush to California, in the early days of the gold excitement here.

In September 1870, the nnmher of diamond seekers, independent of the native population, was estimated at ahout 5,000 persona. Within leaa than one year from that date that number had increased, by eatimate, to ahout 30,000—uot including aome 4,000 natives.

The Geography of the Diamond-Fields.

Referriug to any ordinary achool atlas, and marking out a section thereon which would be included hetween the 27th and 31st parallela of latitude, and the 95th and 105th degrees of lougitude, the ohserver will have enclosed a parallelogram of about 240 hy 300 milea in extent, which will include all the African diamond fields which have been discovered to date. If the map is a full one there will he observed nearly parallel with the eastern and uorthern liuea of this area, a chain of mountains, enclosing, aa in a semi-circle, a series of rivers flowing down from said mountains and forming the head watera of the Orange river, a magnificent stream, one of the largest on the globe, and uavigable for a distance of several hundred miles from ita mouth. The best portion of the diamond field is found along the valley of the Vaal, the principal northern tributary of the main river.

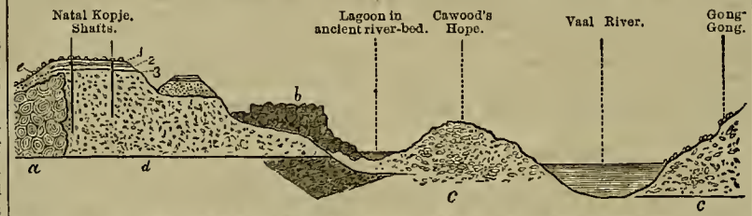
Diamonds have also heen found as far down as the main Orange river, and also on the lower portions of all the trihutaries of the Vaal.

The Geology of the Diamond Region.

On the geological questions with reference to this diamond field, there are various opinions, mainly, however, with regard to the origin of the vast drift deposit, which overlays almost the entire country under consideratiou, and in which the diamonds are found. Some consider thia drift the result of early glacial action or of a water agency—not oceanic, because of the absence of oceanic remains—involving a much larger flow of water than the present configuratiou of the country would admit of. Others think that agencies now at work may have brought down this debris from the mountains to which we have alluded. A careful geological examinatiou of the mountains near the aource of the rivers would prohably very easily decide this question.

In order to give the reader some idea of the geology of the diamond fields, we have appended hereto a sectional diagram of a portion of the field through which the Vaal river flows, and which has been pretty thoroughly explored. The section, as will he seen, extends from Natal Kopje on the oue side of the river to Goug Gong on the other. Both localities have become quite noted for their yield of the precious stoues, and are located iu a central portion of the diamond field. The term "Kopje" is general and applied in that country to a small hill or elevation. This section may be considered a very fair general view of all the country where diamonds are found.

With the exception of the fine straight inclined lines showu hetweeu the letters, *d* and *c*, the eugraving represents an actual representation, as disclosed by shafts, etc., sunk upou the grouud, and has heen copied from an article in the last quarterly issue of the Londou Geological Society. We have added these lines to show, what, from observations in other localities is supposed to he the general character of the rock forming the floor of this great valley. It is often found cropping out on the banks of the river, and in a uumber of places extends quite across the Vaal, forming rapids in the stream. The rock consists of a metamorphous (carhoniferoua?) ahale, inclined at a very small angle. The other geological characteristica in the aection ahown are fully described in the explanation of the aection given in immediate connection with the diagram, and should he carefully studied hy the reader, in order to fully understand what foltowa.



SECTION OF THE DIMANTIFEROUS DEPOSITS FROM NATAL KOPJE TO GONG-GONG, SOUTH AFRICA.

1. Dark Blue, slate-colored, gravelly clay, with boulders.
2. Yellowish clay, with patches of calcareous tufa.
3. Bright red gravelly clay.
a. "Rotten-stone." [Decomposed felspathic smygdaloid?—T. R. J.]
b. Metamorphic (?) rocks, covered with immense boulders.
c. Red, unstratified, clayey gravel, with many houlders, and containing numerous worn fragments of fossil wood
d. Unstratified gravel, containing "kidney-stones."
e. Gravel, ahout 2 feet; no diamonds found.

The couutry for aome distance from the river, and wherever the diamonds are found, ia covered with the gravelly debria shown at *d* and c, and varying hut little in their general characteristics. A most noticeable peculiarity of the valley is its show of numerous small conical elevations, with flat, table-like aummits. Near the river these elevationa are from 20 to 30 feet ahove the general surface, increasing in hight, until at the distance of a few miles they reach aometimes to one or more hundred of feet in elevation. The general contour of these hills (Kopje'a) may be inferred from Natal Kopje, into which two exploring shafta have heeu sunk to 25 and 30 feet in depth. Another similar mound ia aeen near by, at a little diatance heyond. The cause of the flat aurfaces of these mounds is explained by the different stratas of gravelly clay, as shown at Figs. 1, 2 and 3. The aidea of these mounds sometimea slope off iuto small tabular aurfaces, aa shown just to the right of Natal Kopje, and over the letter *d*. These "tables" are sometimes crowued with the clay atratificationa already deacribed, but in this instance they are wantiug.

These mounda are sometimes composed entirely of the gravel, *d* and *c*; at other times the "rotten stone," *a*, reaches almost to the surface. In such cases the little indentationa upon its aurface afford convenient nestling places or "pockets" for the diamonds.

Where the Diamonds are Found.

In the intervening spaces between the mounds, very singular depressions are often found, called "Braak Pans" in colonial phraseology—probably from the salt or hrackish water which accumulate in them during the rainy seasons, aud which passes off only hy evaporation. Some of these "pans" are a mile in exteut.

Du Toit's pan, one of the most famous diamoud deposits is over two miles in extent. Diamonds are sought for in these "pans," and on the flat summits aud benches which surround them. They are seldom found on the slopes leading into them, for evident reasons.

The largest diamonds found up to the present time, according to a paper before us, and which was recently read before the London Geographical Society—as communicated hy Geo. W. Stow, Esq., of Queenstown, Cape Colouy, have been taken from strata similar to that shown at figs. 1, 2 and 3, and which also, as a general thing forms the floor of the pans. They are seldom found in the unstratified gravel and houlder drift which underlies the strata. Very few have heen fouud at a greater depth thsn five or six feet, and by far the largest portion has been taken out within two fect of the surface. All the diamond-producing gravels coutain large quantities of water-worn fossilized wood.

Diamonds in the Rivers.

There is often a terrace-like ridge along the river banks, in which diamonds are found, aud which finally slopes gradually down to the water, hut no diamouds are found on the "slope." We have seen no statement aa to whether the rivera have as yet heen prospected, hut infer that they have not, and that any operations like "turning the rivers," as for gold mining, would require a large outlay. But we read in the paper before us that there are evidences that the Vaal, which is a very crooked river, has frequently changed its bed, and that its former beds, which are distinctly marked hy linea of trees along such depresaions, have been found very prolific in diamonds.

One of the old river beds is shown in our engraving, and which has not yet been filled up by the wash from the adjacent hanka, so as to exclude the water. The small elevation hetween that and the main river, called Cawood's Hope proved a fallacious "hope," indeed, for no diamonds were found in it. It is described as quite a recent river deposit, without the usual clay capping and diamond-bearing drift, which usually accompanies the "Kopjes." It is stated that no shafta have heen sunk in the gravel deposits, *d* and *c*, either at the locality showu or any similar locality to a depth exceeding some 30 feet, probahly for the reason that the influx of water permitting such a loose gravelly deposit rendera snch a work impossible without a drain tunnel, which may he impracticable. Hence nothing is known of what might be found on the "bed rock," except where it rises above the general water level of the country. In auch localities diamonds are almost invariably found. There is probahly much yet to be done iu the way of heavy mining operations in the African diamond fields.

When we go back some distance from the river courses toward the dividing ridgea, the aurface presents quite a different appearance from that near the river. Inatead of being a ferruginous loam it ia decidedly calcareous, while the pebbles are less water-worn and fewer in number.

Diamontiferous Indications.

To the prospector for diamonds, the diamontiferons iudications are of the highest importance. Dr. John Shaw states, in a communication to the Londou Geological Society, that the garnet and tourmaline are invariably associated with the diamond iu South Africa. The diamond appears also to be accompanied by a peculiar substance, called "semmels" from its resemblsnce to brau. It is of a greenish color and looks something like burned brick when impregnated with iron. It consists of a fine clayey detritus, glistcuing with talc, and ahounding with garnets, tourmaline and corundam.

Many think it is derived from the breaking down of the fundamentsl rock, shown betweeu *d* and *e*, and which by such ia called a kind of greenstone—and that that rock, which is supposed to correspond to that which forms the neighboring mountaiu ranges, is the true matrix of the Africau diamond. No scientific examinations have, as yet, heen made to determiue the identity, or otherwise, of the two.

This theory hss been put forth hy Mr. John Peterson, who claims that it is founded ou a minute aud careful examination of the appearances which presented themselves to him on a visit to the diamond fields. He discredits the theories which would refer the presence of diamonds to any distant sources, thinks the evidence incontestable that the "marl soil," as he calls the diamoud drift which we have described, and in which the gems are now found, is the matrix soil of the diamond. This marl soil, he considera to be the metamorphosed shalea (itacolumite?) of the country, and the change which has worked upon these shales, by which they have heen transformed from the hlack carhoniferous shale into the whitish ashy marl in which the diamonds are found, he attributea to intrusiona of greenstone trap, which traverses from N. E. to S. W. in continually recurring dykes.

Mr. Peterson gives some very interesting detaila of the extent and richness of the diamond diggings in South Africa, and in his picture of the Gong-Gong and Belport Diggings at "Great Rushes," in diggera' phraae, resembling in extent and richness Colesberg Kopje, hnt now nearly worked out, not by the hand of man in a few yeara, hut hy the angry waters of the Vaal river through many ages. He found mnch ground-work of hope that the diamond discoveries of Sonth Africa are to be no fleeting, passing industry, but a continuous employment, not only for many years, hut for many ages.

Personal.—Hon. R. W. Raymond, United Statea Commissioner of Mining Statistics, is now in Salt Lake City and will probably be iu San Francisco shortly. Mr. Raymond is now making hia annual tour of inspection in the miniug States and Territories. He will visit Pioche, White Pine, Schell Creek, Reese River, Eureka District and Virginia City and will arrive in this city about the 15th, proximo.

Mr. J. Livingstone Stone is now in thia city for the purpose of obtaining salmon roe for the rivers of the Atlantic Coast. He comea from the United States Commissionera of Fish and Fisheries and takes great interest in the science of breeding fish.

Col. Thomaa Scott, the "railroad king," and Col. J. W. Forney, of the Philadelphia *Press*, are both in this city.

International Patent System.—Prominent English gentlemen who know the need of a change, are atill pushing this matter. A deputation recently waited on Earl Granville to urge npon him the importance of allowing patents only to actual iuventors or their repreaentatives, and of taking steps to aasimilate the patent laws of all conntriea, in order to remove the obstructions under which inventors labor at present. He has taken the matter under advisement.

Microscopical observation haa determined the brown apots upon the peach this year, to be a fungus vegetable growth, the result of some peculiar atmospherical condition.

CORRESPONDENCE.

Notes of Travel in White Pine Co., Nevada—Concluded.

[By our Traveling Correspondent.]

EDS. PRESS:—In my letter from Hamilton, I neglected to mention the fine smelting works of Messrs. Everts & Co., merchants at that place. Theso works are now lying idle, but will soon start up again on ore from the Oro, Eliza D., Caroline and West Point mines, belonging to the same parties, and located about six or seven miles southwest of Hamilton. This smelting furnace is built of stone, and is 30x180 feet square, engine and blower complete; they have also refining works nearly completed, adjoining the same.

Caroline Mine.

This mine is located at Mount Ophir, in Monte Christo District, fifteen miles west of Hamilton. It is owned and superintended by L. Elles, and is being worked through a tunnel, now in 400 feet on a ledge that is quite narrow, but very rich. This ore is said to mill $500 per ton. It is hauled to Reno for reduction, a distance of 400 miles. Mr. Elles is working regularly six men, and his mine is not for sale.

Piermont District—Piermont M. & M. Co.

This property is located about thirty miles south of Schellburn, and ten miles east of Duck Creek (a station on the route between Schellburn and Hamilton). This company is an incorporation of $3,000,000 capital stock, with 30,000 shares; J. E. Perkins is Pres. and J. W. Clark, Sec.; E. B. Dickinson, Supt.; office 418 Cal. St., S. F. This company own two ledges, one 1,200 and the other 1,500 feet in length; their developments consist of five shafts, varying from 75 to 150 feet deep, and two tunnels, one in 200 feet and the other 300 feet. The former is on the ledge and the latter is running to it. The ledge averages about seven feet, running from five to ten feet on a true fissure vein of free milling ore (silver) carrying a trace of gold. Working thirty men on their mine, taking out twenty tons daily, which averages from $40 to $50 per ton. This company also own a ten-stamp mill, run by steam power (with additional power for twenty stamps); the mill is situated in close proximity to the mine, running the ore from the tunnel by truck to the mill; running the mill night and day on their own ore, crushing twenty tons daily, and working ten men regularly at mill. This mill has been in operation since May, 1871; is now a paying institution, and considered a dividend paying mine from this on.

Robinson District.

Mineral City, White Pine Co. Nevada, is located midway between Schellburn, and Hamilton; or about 45 miles from either place, reached by stage from Hamilton or Schellburn, in 6 hours; fare $5. This place contains about 100 inhabitants, and is situated in Robinson Valley, which is about 1½ miles in length, and from 20 to 60 rods in width, watered by two very fine flowing springs, and the hills on each side furnish them with plenty of wood. It is in and upon these hills that the mineral is found in this celebrated district, which are carbonates or base ores, carrying gold, silver, and lead. The principal company here, the only one in fact that is reducing ores, is

Ths Canton Mining Co.

This is an incorporation of $150,000 capital stock, in 1,500 shares, incorporated at Canton, Ohio. G. M. Ogdon Superintendent and resident manager. This company own 41 different sites or ledges, and a fine large furnace and smelting works, located ¼ mile east of Mineral City. The smelting works are run by steam; they have but one furnace; its reducing capacity oree is, 25 to 30 tons per day. It is not running at present but undergoing repairs. The last run on thie Company'e ores yielded about $500 in gold and $175 in silver to the ton of base bullion, the balance lead; from 7 to 10 tons of the rock in this district gives one tou of bullion. This Company are employing in coal-burning, mining and emelting, about 60 men regularly. The titles to all this company's claims have been completed, and U. S. Patents, for the same has been applied for. In the course of another 30 days, at least 100 men will be employed. Among the prominent property owners here are Mr. Samuel Brannan of Napa Co. Cal., and Mr. G. W. Lamb, resident here; they own

The Town Site

and 360 acres of fine valley land just below, including a fine stream of water, known as Murray Creek; also 360 acres of fine timber land, and some 25 mines or ledges. The principal oues that they have developed to any extent are the Calistoga, Manhattan, Silver Star, National, Bowden, Silver Bar, Hidden Treasure, and Badlam. At present only 8 men are employed, but very shortly a large force will be put upon the above mentioned claims. Assays from the latter mentioned mines run from $60 to $100 per ton, in gold and silver.

Copper Miaes.

Some very important copper mines, or locations are located about 5 miles west of Mineral city. The ores are of the red oxide and carbonate order; the principal mines are known as the Osborn and Mineral city No. 1, and No. 2. They assay from 30 to 80 per cent in copper; the best ores of which also contain about $45 per ton in silver. Another feature of the locality is a

Garnet Mine,

located about 1½ miles north of this place. These garnets are found in a belt of volcanic porphyry. They are fonnd in large quantities, from the size of a pin's head to an inch in diameter, numbers of which are not only perfect but very fine. One company shipped over 6,000 of these precious stones to France last year. The Hilp Bros., merchants, are interested in one of the principal locations.

Othsr Claims.

There are some fifty other locations in this District, a large majority of which have been developed sufficient to prove their value. Among which are the Leinhain and May Flower, situated on Union Hill, about one mile west of the town, and owned by Bennefice, Leinhain, Jones & Co. Developments on the former, expose the ledge for a distance of 40 feet, showing a defined ledge 5 feet, thick, running N. E. by S. W., assaying from $60 to $130 in gold, and from $50 to $803 in silver, and about 15 per cent. lead. The May Flowers shows an 8-foot ledge, crops out for about 250 feet, and assays $250 per ton in gold and silver. One-half mile further west is located the Morning Star, belonging to Bennefice & Leinhain. It is exposed so as to show a ledge 40 feet wide, crops out the entire length of the claim, and is traceable for three miles beyond; assays from $60 to $300 per ton in silver. Another quite important claim, and pretty well developed, is the

Mattie Mins

Owned by Bennefice Hendricks & Watson; it is located adjoining the town on the north; they have about 60 tons of ore on the dumps—assaying from $62 to $250 in gold and silver, and about 34 per cent. lead. The parties owning a majority of the locations in this district are poor men, and for their benefit a mill and two or three smelting furnaces additional are needed, and it wonld, in my opinion, be a good investment to parties having the capital.

On the same ledge as the Mattie is the Bullion, owned by the same parties; they have about 15 tons of $130 ore on the dump, working 10 men regularly on the Mattie and Bullion mines; G. S. Hendricks, Supt. Still another important location is the

Hayes Mins

Which is developed to a depth of 80 feet. It is located about two miles west of Mineral City, and is owned by Messrs. Bell, Ludlum & Freeborn. At present it is bonded to other parties and is considered a valuable property; it pays in gold and silver, from $140 to $700 per ton, and carries about 15 per cent. lead. From Pioche, Ely District, in my next. L. P. MC.

Cherry Creek Mines—Montana.

EDITORS PRESS:—It has been about twelve years since I left the extensive gold fields of California, and have since been working and prospecting in nearly all the mining camps of Montana. I have, by aseistance of M. M. Young, my associate, discovered what I consider to be a new El Dorado, on Cherry creek, one of the tributariee of the Madison river. I notice in your issue of the 20th ultimo, that we are said to have solid silver mines, but that ie a mistake of your correspondent; but our surface indications are second to none in California or Nevada. We discovered the

Havana Lode,

The first ledge in the district, about the 20th of May, 1872. Being acquainted with the nature of silver rock, having been engaged as amalgamator in several mills, and having had practical knowledge of ores, I must say, that I never saw rock so rich in silver, and lodes that can be traced as far as these in the vicinity of Cherry creek.

The Ensleman mine, discovered by Henry Ensleman, at a depth of 12 feet, shows a vein of about 40 inches, and can be easily traced for 3,000 feet on the surface, showing native silver, horn silver and the different kinds of chlorides to a greater extent than any ore I ever saw. The extension shows equally as good as the original discovery. Prospectors are commencing to move rapidly through the mountains in the vicinity of the mines, and men with capital are anxiously waiting for the development of the mines. L. P. Sargey, an enterprising business man of Montana has purchased one-half interest in the extension of the Ensleman mine, and is rapidly sinking a shaft under the supervision of George Hurst for the development of the mine. G. W. Rea, Bro. and Bowen purchased 200 feet from Young, on the Ensleman extension. F. R. Merk has purchased 250 feet, undeveloped as it is, for $3,500, from Henry Ensleman, and is running a tunnel in the side of the mountain on the ledge 50 feet. Ensleman also is driving a tunnel in on the ledge following the vein.

Rea, Bro. and Bowen have purchased 200 feet on the Havana lode from Young. The Eberhardt mine, junior in age, but not in richness, about 200 feet down the monntain from the Ensleman, running parallel with it, shows both native silver, horn silver and chlorides; it is a mine of vast richness. The Eberhardt has a vein abont 3 feet wide. Rea, Bro. and Bowen purchased 200 feet on the extension of the Eberhardt, F. R. Merk 200 feet, Wm. Reese 200 feet, John Manihen 200 feet, Rea Bros. also purchased 200 feet on the discovery of the Eberhardt.

Other Mines.

The Wm. Davis lode, discovered by Davis & Rea, showing a vein of abont 4 feet, is a rich mine, showing native silver, black sulphurets and chloride. Jed Daniels is sinking a shaft on the Davis lode for feet. The G. W. Rea lode discovered by Davis and Rea, is a good ledge. Daniels is sinking on the same for feet. The Clagget lode is a valuable one; it was discovered by Goodwin and Hapgood. The Ætna, discovered by Searborough and Reel, is a valuable ledge, and I think it will prove to be the same as the Ensleman. The Mewhaver owned by Wm. Aubery and Bradley, shows rich ore, and will prove a good ledge. The Humboldt ledge has a vein of about 3 feet, showing good quartz that will run about one half silver and gold.

The Wm. Davis lode has four extensions that shows good ore—the Mary, Maud Rea, Silver Crown, Anna A. White and the Monitor. There are about 100 locations in the district that show mineral. M. P. Davis, Houser & Co., have located a tunnel, which they intend driving 3,000 feet into the mountain. They have also established a trading post in the new camp. Rea and Harper, have also located a water right to the water from Cherry creek for milling purposes. They will proseoute their ditch as fast as practicable. There are several rich locations made on the opposite side of the Madison river, about six miles distant from Cherry creek. Charles Dorr and Baldwin have a rich ledge, the Silver Shower; also Terry Payne & Co., have a valuable ledge the "Stonewall." D. M. Johnes and Ghelenberger have an extension on the same.

The mines are situated in low rolling mountains, one of the finest grazing connties in Montana, plenty of wood and water accessible. These mines are bnt in their infancy but they are rich, as far as developed. H. E.

RAPID MANUFACTURE OF VINEGAR.—The *Artisan* describee a new process lately invented by R. D. Turner, of New York city. In this process the agent employed in acetification is ozone, the active element of oxygen or allotropic oxygen, which is eliminated from atmospheric air in the required quantities, and applied directly to the material to be treated. This material is snbjected to conditions, by a system of spraying and re-spraying, in which each infinitesimal atom is surrondded and embraced by the ozone, while at the same time the temperature is kept to the point most favorable to the chemical results to be produced. The effects of ozone are instantaneous. It not only sours, bnt purifies and clarifies at the same time. In all previously known processes for making vinegar there is a large percentage of waste, from loss of quantity and proof by evaporation. This loss is claimed to be entirely prevented in this new process, and this saving alone is estimated by the inventor to be sufficient to cover the expenses of working the machine.

The Production of Gold.

Gold, the most valuable of all metals, is used by all nations as a standard of valne. Besides entering largely into tbe arts, it forms tbe coin most generally in use in Europe and the United States, and is an article of production and export from the latter country. Gold is preferable to silver for coin, as the expense of coining a given sum is only ahout one-tenth tbat of silver, while it is much more conveniently carried; aud in large sums it is more easily and rapidly paid out. It is exported in hars and in coin.

A great impetus was given to commerce about the middle of the present century, by the astonishiug increase in tbe production of gold whicb took place at tbat period. The immediate effect was an advance in the prices of certain necessary articlee required in the then remote mining regions of California and Australia, and in a demand for vessels to transport these articles, together with tbousands of adventurous miners and traders, to the mining districts. Tbe next effect was to disturb the relative values of prodncte; gold heing tbe standard of value. Tbis gave higber prices; stimulated production, and increaeed production demanded of commerce new markets for exchanges, and new and large facilities for effecting them. This demand npon American commerce was promptly met. It immediately established steam communication betweeu New York and New Grenada; founded a new city on the coast of tbe latter country for tbe accommodation of general commerce; built a railroad acrose the Isthmus of Darien; organized steamers on the Pacific to connect New York with San Francisco; constructed a telegraph across or under the Atlantic ocean; made and equipped a railroad over and tbrough tbe bitberto comparatively impaseable Rocky Mountains; and finally eetabliehed direct steam communication between our owu country and Japan, China, and tbe East Indies; all theee wonderful acbievements baving beeu accomplished within the space of about twenty years after the uew discoveries of gold.

The continued production of gold from the sources alluded to, as well ae from other parte of the world, would seem to preclude the poseibility of a return to tbe general scale of prices whicb existed prior to the year 1850.

The annual production of gold throughout tbe world is now pretty uniform; the amount varying in each country more or less each year, but in the aggregate is probably uot far from $200,000,000; some estimates are below and otbers above that amount. Iu a report made to Congress recently, it was put down at $150,000,000; furnished by different countriee as follows:

United States	$60,000,000
Mexico and South America	5,000,000
Australia	60,000,000
British America	5,000,000
Siberia	15,000,000
Elsewhere	5,000,000
Total	$150,000,000

A PHENOMENON IN OIL REGIONS.—The Titusville *Courier* recently published the following interesting particulars of the Newton well on the Nelson Farm, six miles north of that city: It has been down about twenty days—has continuously poured forth such a volume of gas that it was found impossible to pump it, as the valves would not work. The tuding was pulled Wednesday and the well was cased in order to let the gas blow off, so that it might be pumped. After the casing was put in, the sand pump was lowered for the purpose of agitating the well, and the gas raised a column of water, throwing a solid stream into the air a hundred feet. The noise was terrific, and could be heard for a distance of more than two miles. The noise was something like the loud roar of thunder, and when the column burst at the top it threw the water each way for fifteen rods from the well. The water was exhausted in about twenty-five minutes, and then a column of gas followed, rising with tremendous force fifty feet above the derrick. The outpouring of the gas makes a roaring noise that can be distinctly heard for two miles from the well. The noise around sounds like the rushing of the whirlwind. The colnmn can be seen a mile from the well. No tools can be put into the well. As soon as the attempt is made, with euch force does the gas come out that the tools are carried into the air. From description of eye-witnesses this is probably the greatest gas well ever struck in the oil region. Up to last evening the gas showed no signs of being exhausted. The people in the vicinity were very much alarmed, and the cattle run about the fields perfecly wild with fright.

MECHANICAL PROGRESS.

Something New in Pile Driving—Shooting the Piles into the Ground.

F. C. Prindle, Civil Engineer, has made a report of the marvelous success of the new method of shooting piles into the ground with cannon now in use in the Government construction of the new landing wharf on League Island, in the Deleware. More than 800 heavy yellow pine piles, averaging ten inches middle diameter, have now been driven through mud and clay to a very hard bottom, twenty-one feet below mean low water. The machine is secured to a large scow, in the usual manner, assisted by a small engine to hoist the piles into position.

The gun, weighing 1,800 lbs., has 6¼ inch bore, 24 inches deep, pointing upwards, and is recessed at the lower end to receive the head of the pile, upon which it rests.

The ram, weighing, 1,300 lbs., moves in the same guides as the gun, and is provided with a piston, projecting from its lower end, and neatly fitting into the bore of the gun, its upper end having a bore of greater diameter, to receive a fixed piston secured to the top of the frame, and thus form an air cushion to prevent its escape from the guides when the light of its rebound is limited, as during the first blow with very long piles. The ram is caught and held at its highest ascent, and also released for the succeeding blow by the operation of a friction brake at one side pressing it against the opposite guide—all at the will of the operator on deck.

The operation of driving is as follows: The engine hoists the ram, gun, and pile into position simultaneously, with one movement; the brake is then applied, holding the ram in place uppermost, and the gun and pile are then lowered together until the pile rests in the mud; the gun is then lowered on the top of the pile, the recess securely holding the pile-head in place directly underneath.

A cartridge is then dropped in the gun, the operator releases the brake, and the ram falls with its piston entering the bore of the gun (which is made slightly funnel-shaped at the muzzle), and by compressing the air exerts a gradually increasing downward presenre upon gun and pile, till the inertia of both is more or less entirely overcome, the cartridge is crushed by the piston, and ignited by the heat evolved by the sudden and severe compression of the confined air. An explosion immediately ensues, the result of which is to violently force the pile downward, and this ie measured by the reactionary effort upon the ram—the light to which it is thus thrown, and from a state of rest, practically. The force due to the fall of the ram, and the explosive force exerted to throw it up and again in position, are thus at once combined and applied to the pile.

The principal difference of effect between this method and the ordinary hammer, appears to be just here: in the one case the pile is already in motion when a tremendous force is suddenly brought to bear upon it in the same direction, and in the other case it receives a violent blow when at rest, and a considerable portion of the force is expended uselessly in the destruction of the pile-head itself, before its enertia is overcome and motion produced. Hence the necessity of strongly banding the pile-heads in the latter case, and the utter absence of any necessity for their protection in the former.

The ram, on its rebound, is caught and held by the brake, and the operation repeated at pleasure. On January 13th, twelve piles were driven in a single hour. The piles were all driven without the slightest injury, and none of them showed any marks of violence.—*American Builder.*

PRECISION IN STONE CUTTING.—It is a curious fact, that the six hundred men who are employed in cutting granite at Dix Island, Maine, for the New York Post-Office, cannot prepare material fast enough for the two men who are employed to set the blocks. Each block of granite is cut, trimmed, faced, and accurately numbered according to the working plans. When it arrives at the site of the building, only two men are required to set it, aided as they are by steam hoisting-apparatus. Every stone is made to fit exactly in the space intended for it. So accurate are the plans of the supervising architect, that it is stated that the superintendent of the Post-Office building has only been obliged to order one stone during the entire work thus far, and the foreman at Dix Island insists that the missing one was sent, but lost in transportation.

SCREWS VS. NAILS.—Most mechanics who work in wood do not appear to understand the eminent superiority of wood screws over brads and nails. In many places, one screw is worth three or four nails. When one is securing cleats to batten doors, or cleats to a wagon box, nails are very unsuitable when compared with the efficiency of gimlet-pointed screws. Screws will hold two pieces of wood more rigidly than nails; and, if the timber should shrink a trifle, the screws can be turned up tight; whereas it is difficult, in most instances, to tighten up loose work with nails in all places where there is an unusual strain on the parts to be held together.

Mechanical Architecture.

The idea is gaining ground that an architect should aspire to be also an artist—that he should confine himself less closely to his box of instruments—his square and dividers—and draw with a free hand, like an artist. Architecture has its constructive and its decorative aspect, and the architect should be artist enough to combine both.

"There is, perhaps," says the London *Architect*, "no quality more conspicuous by its absence than this [artistic design] in the actual practice of what we agree to call the architectural profession. The regulation 'office' education of an architectural student has become so far removed as possible from 'studio' work, and this fact is significantly illustrated by the habit, confirmed and accepted, which even our leading architects cultivate when they speak and write of their assistants and pupils as 'clerks.'

At no time in the history of the art has either of these junior members been so much regarded as a mere clerical machine for the use of the square and compasses. If he can deftly manipulate his box of instruments, he seems to reach the summit of the professional skill required of him. Granted a little knowledge of the historical styles, with a certain or uncertain amount of ideality in using them, and your complete article is ready to hand in the shape of an architect, as we consent to accept it.

The canvas-painter, however, when he desires to deal with the representation of building designs, is happily ignorant in great part of the compasses and bow-pencil. His instinct is to draw with free hand, and not with any mechanical appliance, the forms which he desires to delineate. He regards and treats a building from general conception down to detail. The office-trained architect, on the contrary, begins with notions of detail and tries to work up the complete result.

It is as idle to blind ourselves to this distinction as to deny the difference of the result. In the one case we have pictures of architectural interest which in skilled hands will charm the eye, while the other gives us but a scholarly elaboration of 'correct' shapes and details, worked out, it may be, with more or less artistic feeling, but which continually remind one that our contemporary practice of architecture smacks more of the *office* than the *studio*.

No great architect ever depended on mechanical instruments of brass or steel for the realization of his conceptions."

A NEW SILVER STEEL—PYRO-SILVER.—The question has more than once been asked, why was not the steel knife banished with the steel fork? We believe the true answer to this to lie in the fact that no one had discovered a silver knife with a cutting blade that would continue sharp and wear as steel does. But the discovery has now been made, and in the pyro-silver of Mr. J. Neal, of 48 Edgeware-road, we have a material which combines the above qualities in an eminent degree. This compound, as applied to knives, consists of a blade of the finest steel as a basis, and which is chemically cleaned by a special process. It is then treated with silver in the purest possible state, and the two together are passed through certain processes known only to the inventor, after which they are treated in combination under atmospheric pressure. By this means the silver is said to to be driven into the pores of the steel, and heat afterwards has no perceptible effect on the metals. The result is a knife which will not rust, is not stained by acids, and only requires washing after use. When blunt it is simply sharpened on a steel in the same way as any other knife to keep an edge, and it does not partake of the flavor of anything it may have to cut. In short, it possesses the combined advantages of both steel and silver, besides others peculiar only to itself, as we have found on a fair trial of the metal.

PROSPECTIVE ABOLITION OF STEAMER FUNNELS.—According to the *Swiss Times*, two Austrian marine officers and a marine engineer have discovered by united experiments a method of conveying away under water the smoke from the steam engine, instead of through a funnel into the air. They make use of double ventilators, which compress the smoke and force it overboard. For propelling these ventilators they employ, according to circumstances, either water power—that is the pressure of the water between the surface of the water and the place where this apparatus is fixed; or, for smaller vessels, steam-power. A chief advantage of this discovery will be the greater security of ships of war, as, in armour-plated ships, the only vulnerable part, the funnel, will be taken away. For submarine and torpedo ships and monitors this discovery, it is said, will be of great value.

MEASURING FURNACE HEAT.—An instrument has been invented in Germany which will measure with perfect accuracy the heat of the hottest furnace. It is based on the principle that the resistance of pure metals to the electric current increases with the temperature in a very simple ratio. A platinum wire of known resistance is coiled around a cylinder of fine clay, and covered with a tube of the same material. The test is a Daniells battery, of two cells, and with a resistance measurer, and placed in the furnace whose temperature is to be ascertained. It is then only necessary to read off the indications of temperature on the graduated resistance measure.

GALVANIZED IRON is coming more and more into use as a building material. Almost every considerable town in the Eastern and Middle States, now has its iron roofs, and what with iron joists, iron girders, iron lath, etc., the American people bid fair to soon rival Europeans in the use of this cheap, substantial and enduring material for building purposes.

SCIENTIFIC PROGRESS.

Gases Occluded in Meteoric Iron.

We take from the *Am. Artisan* the result of the experiments of Prof. J. W. Mallet, of the University of Virginia, on these gases. The piece of meteoric iron experimented with had a volume of 15.87 c. c. and weighed 124,589 grms. It was determined to analyze separately that collected at the beginning, middle and end of the process, in order to see whether the different constituent gases were given off at the same or at different rates. The total amount obtained was 36·33 c. c., and reduced to 0° C., and 1 metre pressure. This was divided into three portions for analysis, as follows:

		H.	M.
A.	52·02 per cent. of the whole was collected in	2	30
B.	24·11 " " "	2	20
C.	23·87 " " "	9	40
	100·00	14	30

It will be seen that the greater part came off within the first two hours and a half; but the process lasted fourteen hours and a half, and was not over at the end even of this time. The heat had been gradually raised from dull redness to something nearly approaching whiteness at the end of the time; and when the experiment was stopped, very small but still perceptible traces of gas were still coming off, though their appearance was immediately arrested whenever the temperature was allowed to fall but a little below the high point which had been reached. The piece of iron taken out from the tube when it had become quite cold was found glazed by a thin film of fused phosphide of iron and nickel (Schreibersite), thickest on the edge which had been lowest, this phosphide having oozed out from the mass at the very high temperature used. The tubes used to collect the gas during the first portion of the time occupied in the experiment were found slightly moistened on the inside, and the moisture, which had a distinctly acid reaction, was proved to contain hydrochloric acid, this having no doubt been derived from the chlorine existing in the iron in combination with that metal and nickel. Careful analysis of the gas yielded the following results by volume for the three portions separately collected; the fourth column of figures, obtained by summing up the three which preceded it, gives the percentage composition of the whole of the gaseous matter extracted from the iron:

	Port'n A.	Port'n B.	Port'n C.	Total gas.
Hydrogen	22·12	10·52	3·19	35·83
Carbonic oxyd	15·99	11·12	11·22	38·33
Carbonic anhydride	7·85	1·02	0·88	9·75
Nitrogen	6·06	1·45	8 58	16·09
	55·02	24·11	23·87	100·00

Other gases were tested for, but none could be found; no free oxygen could be detected, nor any compound of carbon and hydrogen.

A DESIRABLE AND POSSIBLE DISCOVERY.—The greatest difficulty in the way of treating iron from ores by the Bessemer process is the presence of phosphorus in most of the ores. Hence only iron from certain ores, comparatively free from phosphorus, can be practicably subjected to that process. It may be difficult; but it would not excite surprise in the minds of chemists, says an exchange, if a simple and inexpensive process for separating iron and phosphorus were made known at an early day, so that only one of the latter should be found in 5,000 of the former; and now that there is such a margin to stimulate exertion, we may be sure the minds of properly qualified persons will be directed towards the solution of a question of such national importance. That such a thorough elimination of phosphorus *may* be made will readily be conceived when the fact is considered that the Pattinson process does not leave one part of silver in 100,000 parts of lead.

SUDDEN RISE IN LAKE ONTARIO.—On the 13th of June, at 3 P. M., the water in Lakes Ontario and Oswego rose two feet, remaining at that elevation sixty-four minutes. From that time until 7 o'clock the water alternately rose and fell, subsiding to the ordinary level at 7 o'clock, where it remained. Previous to the rise a white squall on the lake gathered a high water-spout, which swept rapidly to the east, a rumbling sound was heard coming from the water, fish came to the surface of the water in great numbers, and bubbles of air rose rapidly and exploded. The symptoms seemed to indicate a submarine earthquake. Many such fluctuations in the level of water in the North American lakes are well authenticated. They have usually been ascribed to winds, and this was probably the cause in the present instance.

ACTION OF OZONE UPON VULCANIZED CAOUTCHOUC.—Prof. A. W. Wright (*Am. Jour. Sci.* for July) finds that the ebonite insulators on the Holtz electro-machine are slowly decomposed by the ozone produced, the issuing sulphur, meanwhile, combining with the oxygen to form sulphurous oxide which with the atmospheric moisture produces sulphurous acid, this in turn being converted into sulphuric acid by the further action of the ozone. The deleterious effect upon the insulators can be remedied by neutralizing the acid with some substance which will not form a hygroscopic compound or essentially lessen the insulating power of the ebonite. Oxide and carbonite of magnesium have been used with good effect. A little of these, in fine powder is rubbed over the insulators with a piece of soft cloth; the excess is removed with a wet cloth and the surface, after drying, cleaned and polished with a soft woolen cloth slightly dampened with carbonic disulphide. The last is used very carefully, as it attacks the ebonite. Should the ebonite be discolored by these operations, the color can be restored by rubbing with a little oil, or it will return of itself after a time.

PHOSPHORUS IN COAL.—On this subject the following discussion, at the late session of the American Institute of Mining Engineers, has interest: "Mr. Coxe thought that new analyses of the anthracites are necessary to determine whether they have phosphorus. Our analyses are all old; and were made by old methods of analysis, and before the questions of the present day had acquired their importance.

"Dr. Hunt.—There is probably no phosphorus in antbracite or bituminous coals, because there is nothing to retain the phosphorus. The white ash coals have had their iron eliminated by solution, and as iron phosphide is very soluble, these coals at least bid fair to be free from this impurity.

"Mr. Britton said that phosphorus had been found in the ashes of Ohio coal."

PROCESS FOR ADVANCING OR RETARDING THE HATCHING OF SILKWORMS.—M. E. Declanx gives the following as the results of his experiments: 1st. To prevent an egg from hatching at the ordinary time, it must be kept from the time of deposit at a temperature between 15° and 20° C., exposed to cold for a fortnight about three months previous to the time at which it is desired to hatch it, and then treated in the ordinary way. 2d. To cause an egg to hatch before the ordinary time, it should be exposed to cold twenty days before deposition, and left so for two months. Six weeks after, it is in the same condition as the normal egg, and may be treated in the same manner.

IRON DEPOSITED BY ELECTRICITY.—The following conclusions have been reached in the course of investigations into the characteristics of iron deposited by electricity. First, iron and copper when deposited absorb a certain amount of gas, especially hydrogen; second, the volume of the gas absorbed by iron varies between widely extended limits—this, in the case of iron, being sometimes as much as 185 times its volume; third, absorption of gas takes place principally in the layers which are deposited first; fourth, when such iron is heated the disengagement of the gas commences below the temperature of 212°. At this temperature it is principally hydrogen that is separated.

A NEW VOLATILE AND SACCHARINE SUBSTANCE FROM CAOUTCHOUC.—Aimé Girard calls attention, in *Comptes Rendus*, to a new substance which has been extracted from the caoutchouc of Borneo, and hence called *Bornesite*. It is obtained in transparent crystals, monoclinic, very soluble in water, less so in alcohol, melting at 175°, subliming with slight decomposition, at 205°. Bornesite is not fermentable, does not reduce the copper-test, and is converted by boiling with sulphuric acid into a sugar which reduces this test. Analysis gives the formula $C_{14}H_{14}O_{12}$.

VELOCITY OF ELECTRIC WAVES.—The velocity of electric waves through the Atlantic cable has been ascertained by Professor Gould to be from 7,000 to 8,000 miles per second. Telegraph wires upon poles in the air conduct the electric waves with a velocity more than double, the rapidity of the transmission increasing with the light. Wires slightly elevated transmit signals with a velocity of 12,000 miles per second, and those at a considerable light give a velocity of 16,000 or 20,000.

NEW PROCESS FOR MOULDING SILICA.—M. Muller, in *Revue Chemie* proposes the following new method for utilizing silica:—The silica is reduced to an impalpable powder, which is mixed with water to form a paste, when it may be moulded. Then on being heated to bright red, it fuses together giving a form of pure silica. Even larger grains may be introduced into the mass as they will be fused on the surfaces and agglomerate with the silicious powder.

POTASH SALTS are essential to the assimilation of plants; without them starch is not formed in the chlorophyll granules, and the weight of the plant remains constant as in pure water.

TEST FOR WOOD FIBRE IN PAPER.—The muriate of naphthylamin is said to be a far more delicate test than sulphate of aniline. Wood fibre is colored bright yellow.

OUR MINING SHAREHOLDERS' DIRECTORY.

[Compiled Weekly from Advertisements in Mining and Scientific Press and other S. F. Journals.]

ASSESSMENTS.

Name of Co.	Location.	Secretary.	S.F. Office.	Assm't.	Levied.	Delinq't.	Sale.
Adams Hill C. M. Co.	Eureka D2st.	W. W. Traylor.	419 Cal. St.	25.	Aug. 9.	Sept.12.	Oct. 2.
Arizona & Utah M. Co.	Washoe.	C. H. Fish.	419 Cal. St.	$1 00.	Aug. 14.	Sept. 17.	Oct. 7.
Arkansas M. Co.	Ely Dist. Nev.	Geo. Davidson.	734 Mont'gry St.	25.	July 23.	Aug. 30.	Sept. 23.
Baltimore American.	Gold Hill, Nev.	J. L. King.	411 Cal. St.	$1 00.	July 13.	Sept. 2.	Sept. 20.
Beach & Paxton.	Storey Co., Nev.	Ed. Landers.	507 Mont'g St.	50.	Aug. 6.	Sept. 10.	Sept. 30.
BECKWITH M. CO.	Ely Distrlct.	Wm. H. Watson.	302 Montg'ry St.	20.	Aug. 19.	Sept. 23.	Oct. 23*
Bowery Cons.	Ely Dist., Nev.	Chas. E. Elliot.	419 Cal. St.	75	July 9.	Aug. 15.	Sept. 9.
Con. Antrim M. Co.	California.	H. Voorman.	411 Cal. St.	$5 00.	Aug. 9.	Sept. 24.	Oct. 16.
COTTONW'D CR'K M. CO.	California.	Jos. L. King.	411 Cal. St.	7.	Aug. 19.	Sept 25.	Oct. 15*
Dunes M. Co.	Lyon Co., Nev.	Geo. R. Spinney.	320 Cal. St.	75.	July 3.	Aug. 6.	Aug. 26.
El Dorado M. Co.	Amador Co. Cal.	E. McFadden.	Cal. & Mont'gry St.	25.	Aug. 5.	Sept. 10.	Sept. 30
Empire M. Co.	Grass Valley.	S. Pinkham.	401 Cal. St.	$10.	July 22.	Aug. 24.	Sept. 17
Empire M. Co.	I. T.	C. F Balcom.	426 Mont'gry St.	50.	Aug. 5.	Sept 6.	Sept. 20.
Empire M. Co.	Gold Hill, Nev.	W. E. Dean.	419 Cal. St.	50.	July 10.	Aug. 13.	Sept. 2.
Frances M. Co.	Mariposa Co.	T. F. Cronise.	409 Cal. St.	75.	Aug. 20.	Sept. 20.	Oct. 15.
Gillis G. M Co.	Tuolumne Co.,	Daniel Buck.	331 Mont'gry St.	10.	July 20	Aug. 19.	Sept. 20.
Gould & Curry S. M.Co.	Washoe.	A. K. Dnrhrow.	Merchants' Ex.	$15	Aug. 8.	Sept. 12.	Oct. 2.
Greenhorn G M. Co.	Grass Valley.	J. F Lightner.	438 Cal. St.	$1 50	Aug. 9.	Sept. 11.	Sept. 30.
Hermes M. CC.	Ely Dist.	B. B. Minor.	411½ Cal. St	$1 00.	July 13.	Aug. 19.	Sep.. 14.
HUDSON G. M. CO.	Plumas Co., Cal.	J. L. King.	411 Cal. St.	10.	June 19.	July 27.	Aug. 24.*
Ingomar S. M. Co.	Ely Dist.	C. S. Neal.	419 Cal. St.	50.	Aug. 12.	Sept.18.	Oct. 10.
Ivanhoe S. M. Co.	Ely Dist.	Daniel Buck.	331 Mont. St.	50.	Aug 10.	Sept. 10.	Oct. 8.
KINCAID FLAT M. CO.	Tuolumne Co.	W. H. Cornell.	220 Clay St.	$3 00.	July 15	Aug. 22.	Sept. 14.*
Kentucky M. Co.	Ely Dist., Nev.	J. P. Cavallier.	509 Cal. St.	50.	July 2.	Aug. 10.	Aug. 31.
Lane & Kurtz M. Co.	Brit. Columbia.	B. B. Minor.	411½ Cal. St.	$5 00.	July 23.	Aug. 26	Sept. 14.
Lemon M. & M. Co.	Eureka Dist.	I. T. Millikin.	608 Merchant.	$1 50.	Aug. 14.	Sept. 17.	Oct. 21.
Mammoth S. M. Co.	White Pine.	J. L. King.	411 Cal. St.	10	June 27.	Aug. 1.	Aug. 27.
MARCELLINA S. M. CO.	Ely Dist.	Chas. E. Elliot.	419 Cal. St.	30.	July 24.	Sept. 5.	Sept. 30*
Monitor Belmont M. Co.	Nye Co., Nev.	B. B. Minor.	411½ Cal. St.	$1 00.	Aug. 20.	Sept. 23.	Oct 14.
MORNING STAR M. CO.	Alpine Co., Cal.	O. H. Bogart.	Merchants' Ex.	$1 00.	July 12.	Aug. 20.	Sept. 14.
MINA RICA M. CO.	Placer Co.	Geo. R. Spinney.	320 Cal. St.	20.	Aug. 6.	Sept. 10.	Sept. 30.*
MT. JEFFERSON M. CO.	Tuolumne Co.	J. W. Clark.	418 Cal. St.	10.	July 25.	Aug. 25.	Sept. 16.*
National M. Co.	Nye Co., Nev.	B. B. Minor.	411½ Cal. St.	50.	July 4.	Aug. 19.	Sept. 14.
National M. Co.	Nye Co., Nev.	B. B. Minor.	411½ Cal. St.	50.	Aug. 21.	Sept. 23.	Oct. 14.
Nevada L. and M. Co.	Elko Co., Nev.	Wm. H. Watson.	302 Montgomery.	8.	July 18.	Aug. 31.	Sept. 19
Noonday S. M. Co.	White Pine.	Chas. H. Fish.	419 Cal. St.	25.	July 2.	Aug. 5.	Aug. 26.
NORMAN G. M. CO.	Amador Co. Cal.	Wm. H. Watson.	302 Montgomery.	25.	June 27.	Aug. 1.	Sept. 17.
Ophir S. M. Co.	Virginia, Nev.	Jos. Marks.	Merchants' Ex.	$5 00.	July 17.	Aug. 21.	Sept. 11.
O. H. Treas.	White Pine.	D. A Jennings.	401 Cal. St.	$1 50.	Aug. 9.	Sept. 16,	Oct. 8.
Pacific Borax Co.	Nevada.	R. B. Noyes.	Merchants' Ex.	15.	July 5.	Aug. 6.	Aug. 30
Page & Panaca S.M. Co.	Ely Dist.	L. Kaplan.	Merchants' Ex.	$5 00.	Aug. 14.	Sept. 19.	Oct. 11.
Pennsylvania.	White Pine.	Daniel Buck.	331 Montgry.	$1 00.	Aug. 9.	Sept. 9.	Oct. 5.
Phoenix M. M. Co.	Eureka, Nev.	Chas. H. Fish.	419 Cal. St.	$1 00.	July 6.	Aug. 12.	Sept. 2.
PIERMONT M. & M. CO.	White Pine.	J. W. Clark.	418 Cal. St.	60.	July 10.	Aug. 12.	Sept. 10.*
Pioche W. Ex. Co.	Ely District.	T. W. Colburn.	419 Cal. St.	30.	July 12.	Aug. 22.	Sept. 16.
Rising Star M. C o	Idaho.	Wm. Willis.	419 Cal. St.	$1 00.	Aug. 10.	Sept. 13.	Oct. 8.
Sapphire S. M. Co.	Gold Hill, Nev.	J. F. Lightner.	438 Cal. St.	30.	July 16.	Aug. 17.	Sept. 6.
Senator S. M. Co.	Nevada.	T. B. Wingard.	3 8 Cal. St.	25.	July 6.	Aug. 10.	Aug. 30.
Southern Gold Hill.	Gold Hill, Nev.	David Wilder.	Merchants' Ex.	25.	June 28.	Aug. 3.	Aug. 26.
SPRING MT. TUNNEL.	Ely Dist., Nev.	J. M. Buffington.	419 Cal. St.	30.	July 9.	Aug. 16	Sept. 7.
Sterling M. Co.	Ely Dist. Nev.	H. C. Kibbe.	418 Cal. St.	50.	July 15.	Aug. 21.	Sept. 12.
St. Louis M. Co.	Placer Co., Cal.	T. F. Cronise.	409 Cal. St.	$1 00.	July 1.	Aug. 6.,	Aug. 27.
Tecumsch G. S. &M.Co.	Calaveras Co.	F. J. Hermann.	634 Wash'n St.	15.	Aug. 9.	Sept. 12.	Oct. 7.
Tellurium G. & S. M.	Amador Co, Cal.	Wm. H Socry.	K'ny & Clay.	$1 00.	July 22.	Aug. 23.	Sept. 16.
Tehama Cons.	Shelloi Creek.	W. W. Stetson.	414 Cal. St.	$2.00.	Aug. 2.	Sept. 15.	Oct. 10.
Union Cons. S. M. Co.	Virginia, Nev.	B. M. Gunn.	Merchants' Ex.	50.	Aug. 5.	Sept. 10.	Sept. 30.
VICTORIA & IMP. M. CO.	Utah T.	Wm. H. Watson.	302 Montg'ry St.	10,	Aug. 14.	Sept. 18.	Oct. 12*
WINNEMUCCA CHIEF.	Nevada.	T. F. Cronise.	409 Cal. St.	15.	June 19.	July 30	Sept. 16.*
WM. PENN CONS.	Nevada.	J. F. Pope.	6 Montg'ry St.	10.	July 3.	Aug. 5.	Sept. 2.*
Yule Gravel M. Co.	Placer Co. Cal.	W. H. Watson.	302 Mont'gry St.	25.	Aug. 3.	Sept. 5.	Sept. 15.

MEETINGS TO BE HELD.

Name of Co.	Location.	Secretary.	Office in S. F.	An'l or Sp'l.	Date.
Admiral Nelson T. & M. Co.		R. H. Sinton.	Montg'ry St.	Annual.	Sept. 2
Dauphin M. Co.		C. F. Balcom.	426 Montgomery St.	Annual.	Aug. 24.
Home Ticket S. M. Co.	Nevada.	O. F. Baloom.	426 Montgomery St.	Annual,	Aug. 19.
Howard Hill M. Co.		R. Shoemaker.	411 Cal. St.	Annual.	Aug. 26.
Impertrice Engenia		G. Berson	712 Market St.	Special.	Aug. 26
Lander Con. M. Co.		J. W. Clark.	418 Cal. St.	Annual.	Aug. 23.
Oakville Quicksilver M. Co.	Napa Co.	W. H. Mott.	432 Montg'y St.	Annual.	Aug. 31.
Pacific Mining Tunnel Co.		R. H. Sinton.	Montg'ry Block.	Annual.	Sept. 2.
Peter Walter M. Co.	Placer County.	T. J. Owen.	Express Building.	Annual.	Aug. 29.
Providence M. Co.	Nevada County.	W. H. Knight.	341 Montgomery St.	Annual.	Aug. 24.
Segregated Osledonia		A. C. Ryce.	308 Cal. St.	Annual.	Aug. 29.
Senator S. M. Co.	Nevada.	T. B. Wingard.	318 Cal. St.	Annual.	Aug. 28.
Succor M. & M. Co.	Washoe.	W. H. Watson.	302 Montg'ry St.	Annual.	Sept. 2.
Virtue G. M. Co.		C. F. Balcom.	426 Montg'ry St.	Annual.	Sept. 2.

LATEST DIVIDENDS—Within Three Months.

Name of Co.	Location.	Secretary.	Office in S. F.	Amount.	Payable.
Belcher M. Co.	Washoe.	H. C. Kibbe.	419 California St.	$3.00	Aug. 10.
Black Diamond Coal Co.	California.			½ per cent,	June 28.
Crown Point G. & S. M. Co.	Washoe.	C. E. Elliot.	419 California St.	$3 00.	July 5.
Eastport Coos Bay Coal.	Oregon.	L. L. Pool.	Merchants' Ex.	$5 00.	Aug. 12.
Keystone Quartz M. Co.	California.	L Vesaria.		60.	July 10.
Mahogany G. & S. M. Co.	Idaho.	T. J. Owens.	402 Mont'gry. St.	$1 50.	Aug. 7.
Meadow Valley M. Co.	Ely Dist., Nev.	T. W. Colburn.	419 California St.	$1 00.	Juno 20.
Raymond & Ely M. Co.	Ely Dist., Nev.	A. J Moulder.	419 California St.	$7 00.	Aug. 10.
Pioche S. M. Co.	Ely Dist., Nev.	C. E. Elliot.	419 California St.	$1 00.	Aug. 10.

—* Advertised in this journal.

Stock Sales for Week ending Aug. 22—S. F. Stock & Ex. Board.

[Entered according to Act of Congress, in the Office of the Librarian of Congress, Washington, D. C., 1872.]

NAMES OF COM'S.	Post.	Shs. in ft.	FRIDAY. Shs	Prices.	SATURDAY. Shs	Prices.	MONDAY. Shs	Prices.	TUESDAY. Shs	Prices.	WEDNESD'Y Shs	Prices.	THURSDAY. Shs	Prices.	Total Sold.	Aver.	Advn.	Dec.
Alpha	300	20					25	3¾	10	58	150	48 @50	265	35 @37½	425	45 87½		
Alps	800	37½	50	3¾									300	4 @ 4¼	373	4 05 1		
Am. Flag	2600	11½	200	19¾@20	260	19¾@20	400	20	570	19 @20	280	18¾@19	495	18¼@19	2605	19 42		1
Ariz&Utah	1900	19½	50	1⅞					150	1	55	1	55	1	259	1 04		½
Belcher	1010	19	250	129 @133	175	130	360	124 @132	645	119 @122	880	114 @118	785	117 @120	3095	123 24		13
Baltimore	1200	20	1025	4 @ 4¼	310	4 @ 4¼			450	3¾@ 3¾	425	3¾@ 3¾	110	3¾@ 3¾	2320	3 87½		1⅛
Bowery	1000	30	120	2¾			135	2¾@ 2⅞					105	3	360	2 81⅝		
Bacon			10	75			10	74 @75							20	74 66		
Buckeye					100	3			100	3¼					200	3 23		
Chollar	2800	10	175	88 @88½	270	86 @88	580	85 @89	360	80 @84½	185	75 @77	600	72 @75	2170	81 91	11½	
Caledonia	5000	4	1205	58 @64	815	61 @64	720	56 @60	815	54 @54	870	40½@48	245	44 @46	4769	53 26		18
Cs Virginia	1160	20⅜	220	35 @37	1140	34 @35	772	31 @32	840	29½@31	505	25 @26½	665	22 @25	4152	30 25		12
Confidence	130	192	70	13	315	12¾@13½	150	12¾	200	11¾@12	185	10¾@11	510	8 @10	1430	11 43		3
Crown Pt.	600	166⅔	40	141	65	144	517	140 @146	60	137 @140	330	133 @140	340	129 @131	1352	138 15		10
Central	70	357																
Calaveras	3200	6¾																
Condor			670	2¾@ 2¾	300	2 @ 2⅛	1000	2¼@ 2⅜	1980	2⅛@ 2¾	300	2½	750	2½@ 2¾	5010	2 40		⅛
Dauey	2000	12	50	2¼	235	2¼@ 2¼	10	2⅛	50	2⅜					345	2 13		
Eureka Cs.			480	22¼@23½	410	22½@23	315	22¾@22⅞	840	22¼@23	690	22 @22½	535	21 @22	3330	22 52		1½
Eureka	1650	12	20	16½									10	16	30	16 45		⅛
Exchequ'r.	400	20	25	20					120	19 @20	100	16	30	14	275	17 80		⅝
Eclipse	70	357			120	17	330	15 @16	265	14 @14¼	360	10½@13	790	10 @11½	1865	13 50		
Empire M.	75	16	50	15	200	15½@15⅝	220	15½@16	1070	14¼@15½	1665	10 @13	1385	9½@10⅝	4590	13		4½
Excelsior	4500	22⅝			350	13½@13⅝	100	13½	1750	11¾@13¾	400	11			2600	12 80		
Gould & C	1000	4	30	170	60	175 @180	52	169 @187	75	165 @180	52	170 @172	40	160 @161	214	172 54		10
Golden C.	750	14¾	40	10 @10⅜			80	12	50	12	35	10 @11	40	10 @10½	245	10 75		
Globe	1600	12½	360	2			200	17¾@ 2	150	1⅝					710	1 87		
H & Norc.	400	40	165	81½@82	220	82 @84	130	82 @84	120	78 @80	140	72 @75	215	61 @65	990	72 45		17
H & Hunt.	3000	8¾	25	3			1850	3¼@ 3⅜	1900	3⅜@ 3⅝	420	4¾	1870	4⅞@ 5	6080	4 08		
Ida Elm're	1300	17½	60	14¾@15			225	14¾@15	115	15½@15¾	200	15 @15⅛	100	15	500	15 11		
Imperial	184	543⅞	780	13¾@13¾	550	13¾@13¾	1150	13¾@14	1510	12¾@13¾	1510	11 @12	2985	9½@10¾	7675	12 56		2¾
Ingonar	1000	40	150	1⅜	100	1¼	610	1⅛			200	1¼@ 1⅜	300	1¼	1350	1 27		1⅛
Julia	2000	15	370	5¼	660	5¼@ 5⅝	340	5½@ 5⅝	300	5¼@ 5½	550	5⅛@ 5¼	200	4¾	2420	5 44		⅛
Justice	3600	10	105	14	80	13¾@14⅛	130	13¾	265	12¾@13			210	9 @ 9½	790	12 50		4½
Kentuck	85	21					26	295 @300	5	305	10	28	50	285 @300	20	260	111	290		
Knicker'r	1200	20	665	8½@ 9⅛	630	8½@ 9⅛	580	8¾@ 9⅛	285	8¼@ 8⅝	480	7¼@ 7⅝			2655	8 42		
Mammoth	1800	20																
Mexic'n		12½	1505	15⅜@19¾	4165	20½@22	2865	21½@26	2490	21⅞@22½	2525	21¼@22	1910	22¾@24½	16390	22 28		4¾
Mahogany	720	13⅞	110	13½@14		20 13	150	14 @15	200	14¾@15½	75	14¾@15⅝	680	14½@15⅝	1235	14 51		1½
Ophir	1400	12	200	40 @41	95	45 @46	219	44 @46	110	41 @41½	153	39½@41	255	34 @38	1034	41 41		3
O. H. Treas	800	26⅜	25	5	50	5¼	80	5¾@ 5½	50	6			30	5½	235	5 43		
Overman	12 00	16	1065	88 @103	230	95 @98	362	86 @92	130	86 @88	155	73 @79	305	65 @75	2247	84		28
Occident	800	12½																
Pioche	1000	20	560	26 @26¾	320	26¾@27	335	27½@28¼	770	30 @31	525	33 @34	795	34 @36	3365	29 97		9¼
Page&Pan.	240	16⅔	50	2¼			25	2¼	35	2¼	100	2	215	1½	425	2 65		¼
Phœnix			175	4¾			150	4¾@ 4⅞	725	4¾@ 4⅞	200	4¾	200	2¾	1450	4 42		2½
Ray & Ely	4000	7¼	435	166 @170	175	163 @170	130	175 @177	290	169 @175	40	163 @170	280	165@175	1705	170		
Savage	800	20	85	136 @138	120	140@142½	141	141 @142	125	134 @139	75	121 @132	100	102 @107	666	130 62		30½
Seg. Bel	160	40	30	120	75	118 @122	35	118 @119	170	112	240	100 @107	400	75 @91	950	109 31		39
Sierra Nev	3000	7½	70	15⅝@15¾	25	15⅞	50	15⅝	95	15 @15⅛	200	14½@14⅝	61	11 @13	601	146 37		2¾
Succor	7600	3			15	4⅞	90	4¾@ 5	150	4¾@ 4¾	360	4½@ 4¾	40	4⅝	655	4 73		
St. Patrick	1800	12¾																
S. Chariot	660	30⅜	250	2 @ 2⅛							300	1¾@ 4	50	2	600	106		⅛
Trench	20	250	230	19 @21		20 21									250	20 33		
Wash&Or	1200	130	455	5 @ 5¼	150	5	575	5⅛@ 5⅜	80	5⅛@ 5¼	200	5 @ 5⅛	90	5	1645	5 14		⅛
Yel Jacket	200	20	120	144¾@148	95	148	139	146 @148	100	141 @144	365	132 @137	85	127 @129	994	139 51		19
Yule Grav.	400	25							40	1					40	1		

S. F. Stock and Exchange Board.

Thursday, August 22, 1872.

The Stock Market generally has been dull this week, and aa will be seen by our table of sales, etc., nearly the whole list shows a decline from highest prices of last week. Tbe operations in the Board this morning amounted almost to a panic, and the decline from yesterday's sales are very marked. Comparing this morniug's prices with the highest paid previously this montb, Alpha shows a decline of $31; Belcher, $17; Chollar Potosi, $37; Caledouia, $26; Cous. Virginia, $22; Confidence, $5; Crown Point, $21; Gould & Curry, $42; Hale & Norcross, $31; Overman, $22; Savage, $83; Segregated Belcher, $50; Yellow Jacket, $21; Sierra Nevada, $5.50; Empire Mill, $8; Imperial, $5.50; Kentuck, $45; and Ophir, $18.

The Market on the 16th inst. was stronger than on the previous day, some descriptions advancing, Caledonia and Overman particularly, tbe latter rising $15. On the 17th prices were generally better, Caledonia advanced $4; Cbollar $2; Crown Point, $3; Overman, $4; Raymond & Ely, $5; Savage, $2; and Hale & Norcross and Yellow Jacket, each, $1. On the 19th prices were regular and market strong. Comstock mines were generally lower in the afternoon board, while the Ely District mines were better snstained. Belcher declined $6; Crown Point, $4; Caledonia, $9; Overman, $7; Chollar, $2; Cons. Virginia, $2.50; Kentuck went up $10; Savage $2; Raymond & Ely advanced $5; Pioche $1.50, and Meadow Valley, $3. On Tuesday, the 20th, the market was weak and prices generally lower excepting Pioche which advanced. Belcher declined $5 from previous days' sales. Caledonia, $5; Gould & Curry, $7; Hale & Norcross, $3; Ophir and Overman, each, $3; Imperial, Eclipse and Empire Mill, each, $1; Savage, $8; Yellow Jacket, $6; Cons. Virginia, $2; Meadow Valley, $4 and Raymond & Ely, $8. On Wednesday stocks were dull again at much lower rates than tbe day previous. Belcher fell from $121 to $118, Crown Point was down to $135, Empire Mill declined $4; Imperial, $3; Eclipse, $4; Yellow Jacket, $4; Overman, 14; Segregated Belcher, $12 and Raymoud & Ely $7. Pioche advanced $3 on the strength of new strikes.

Belcher.—The sum of $24,408.98 was sent down on the 14th inst. aud $28,000 on the 15th. The regular weekly letter shows continued progress. The air in the mine has improved. Nothing is being done below the 1,100-foot level. The usual amount of ore was not hoisted because the Yellow Jacket cages were being used by that company for hoisting water a considerable part of the time.

Crown Point.—Bullion shipped on the 14th inst. $17,521 aud on the 16th, $25,061. The ore production last month was 11,000 tons yielding $35 per tou or $385,000. The amount now being extracted is about 400 tons per day, and is iucreasing since the water ie overcome and the machinery in good order. Work has begun in the thirteenth level.

The ore matter is richer than above and thicker as it descends. The south winze in the thirteenth level, near the Belcher liue, has yielded ore worth from $500 to $5,300 per ton at a depth of 80 feet. The ore body shows signs of indefinite extenaion. The progresa of work in the lowest level is much retarded by heat at present, hut this will be remedied by a connectiou with the east winze. The average ore production last month was 370 tons per day, and last week 400 tons.

Chollar Potosi.—Ore extracted on the 15th, 160 tons. For the week euding Aug. 17th, 1,715 tons were extracted, assaying $34.55 per ton. Bullion shipped on the 17th, $13,446.73.

Raymonn & Ely.—Bullion shipped on the 15th inst. $34,164, and on the 18th $34,625, on the 21st $34,333—making a total thus far for August of $240,502, an average of $11,452.47 per day.

Pioche.—On tbe 16th the ore iu stopea of the first level were two feet wide, assaying $175 per ton; on the 17th ore was two-and-a-half feet wide, assaying $186; on the 20th—the same width but assaying $198: on the 22d it assayed $210. The Bowery mill which is crushing Pioche ore has been changed to a double discharge, and the American Flag mill is also crushing for the Pioche. Hoisting the usual quantity of first class ore.

Savage.—Ore extracted for week ending August 10th, 1,126 tons; ore delivered, 1,171 tons, leaving 100 toua on hand; average assay $22.76.

Imperial.—Work is progressing satisfactorily and the ore in the winze shows signs of increasing in width.

Phœnix.—Ten tons of bullion were shipped, August 14th, assaying $300.75 per ton, total value $3,975. On the 17th, six bars were shipped, assaying $279.55 per ton; total value $2,217.

Sierra Nevada.—For week ending August 17th, 350 were produced.

The clean up of the Eureka (Grass Valley) mine on the 17tb, with 15 stamps was 950 ounces of amalgam. The sum of $1,575.30 was sent down from the Buckeye mine on the 17th. The Ida Elmore mine shipped $4,043.20 on the 13th. The North Star report of tbe 17th gives 188 tons received at furnaces, 158 tons reduced, aud 65 tons on hand. The hoisting works on the American Flag are running finely. Shipmenta from the Piermont up to the 17th inst., amount to $5,777. Bullion shipped from Kentuck on the 14th, 5,286.31 Ore extracted last week from Eureka Cona. 915 tons, reduced 744 tons, ore on dump 1,572 tons. A rich body of ore is reported struck in the Mahogany mine.

Mining Summary.

The following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

California.

ALPINE COUNTY.

I. X. L.—Alpine *Chronicle*, Aug. 10: Preparations are being made for sinking a shaft preparatory to the erection of hoisting works.

M. & N. W.—Monitor *Miner*, Aug. 10: The down shaft on the ore-body of Drift. No. 6 started this week, is already down several ft. and shows good ore.

Hoisting Works for 2 claims up Scandinavian Cañon are in process of coustruction.

BUTTE COUNTY.

Golden Summit.—Cor. Oroville *Record*, Aug. 17: The most important mines are those located on theMammoth silver lead. It is a fine, well developed ledge, from 6 to 10 ft. wide. The Golden Summit Company are sinking a shaft and taking out some fine looking ore. The Belmout, the first extension north, are striking ore at the depth of 4 ft. The Dexter, the second extension north, are sinking a shaft and taking out some very fine ore.

CALAVERAS COUNTY.

State of Maine.—Calaveras *Chronicle*, Aug. 17: The ledge varies in width from 2½ to 4 ft., and has every appearance of a true fissure vein. The rock will probably average $15 per ton; 12 men are employed.

Gwin Mine.—Extraordinarily rich rock has been struck in the soutb shaft, below the 500 ft. level. A contract has been made to sink 100 ft. deeper making 600 ft. in all. Work on the central shaft is progressing finely.

Tecumseh.—The main ehaft 150 ft. deep. At 116 ft. a level bas been run 80 ft. on the ledge which is very wide. At the end of the level a prospect sbaft 50 ft. in depth has been sunk, uncovering quartz that pays from $25 to $40 per ton. The Co. are now putting up a 24 horse power engine for hoisting and pumping purposes. As sinking progresses the rock increases in richnese.

Goon Hope.—The owners have out 100 tons of rock and will soon commence crushiug.

Good Rock.—Eighteen toue from the recently discovered mine of Lewis & Fairchild, Moequito Gulch, yielded $700.

Struck.—The lead in the San Bruno has been struck in the lower tunnel, after running 250 ft. The ledge shows splendidly where the drift cuts it, being fully 3 ft. in widtb and composed of first-grade ore.

Clean Up.—San Andreas *Citizen*, Aug. 17: The Whisky Hill Hydraulic Co. have had a splendid clean up—realizing over $5,000.

EL DORADO COUNTY.

Rich.—Placerville *Democrat*, Aug. 17: Very rich ore has been struck in the Grey mine, Gray's Flat. They are putting up a 10 stamp mill. They have out a large amount of rock, 100 tons of which ia eatimated to he worth $100 per ton. Down on the ledge 150 ft.

FRESNO COUNTY.

Prospecting.— Freano *Expositor*, Aug. 14: Quite a quartz fever has aprung up, and considerable prospecting is done.

INYO COUNTY.

Bullion.—Inyo *Independent*, Aug. 10: July 21st. Hiskey & Walter shipped 4 bars, weighing 1,789 ozs. valued at $1,800. Also August 4tb, 5 bars, weighing 1,850 ounces, valued at $1,900.

KERN COUNTY.

St. John Mine.—Havilah *Miner*, Aug. 10: Tbe Bridger Bros. have a well defined 5 ft. lead, and are extracting ore that averages $40 per ton. The new shaft is down over 300 ft. and levels run over 2,000 ft.

Arastras.—Two arastras were put up at Kernville this week.

Bright Star.—The proprietors have their hoisting works in good running order, and are taking out quartz at 200 ft. that pays $100 per ton. The lead is 6 ft. wide.

The 2 stamp mill at Kernville broke down last week.

MARIPOSA COUNTY.

Pine Tree.—Mariposa *Gazette*, Aug. 16: About 75 men, 50 of whom are Chinamen, are at work taking out good ore. A recent clean up, after a run of 30 days, yielded $8,000.

NAPA COUNTY.

Quicksilver.—Napa *Reporter*, Aug. 17: Tbe quicksilver mines in Pope Valley are doing well. At the Wasbington, a new lode has been struck, which is the richest yet discovered. The amall furuace in operation is soon to be replaced by one of a larger and better pattern. Work will be pushed vigorously.

NEVADA COUNTY.

Clean Up. — Nevada *Transcript*, Aug. 16: The Oriental G. Co., Woolsey's Flat, cleaned up this week $6,300. The expense of the run was $2,000.

Gaston Ridge.—Work is being rapidly pushed on the ledges recently discovered. The farther down they go the richer they are.

North Bloomfield.—The North Bloomfield is employing a large number of men. On Wednesday the first of their 8 or 9 hoisting works on the line of their tunnel was started up at shaft number 8.

PLACER COUNTY.

Ophir.—Cor. Placer *Herald*, Aug. 17: The Greene is taking out extraordinary rich ore, in large quantities. The Eclipse has a second shaft down 60 ft. and finds the ledge from 2¼

to 3 ft. thick, and yielding ore that will pay from $20 to $25 per ton. The Good Easter is east of the Eclipse. Shaft 140 ft. deep, and still being sunk. The steam mill Co. is the first eastern extension of the Bellevue or Buckeye. The shaft down 130 ft. with a ledge of 20 inches thick, yielding good ore. The Bellevue is raising good ore. This Co. has 3 shafts and also running a tunnel from Doty's ravine that will tap and drain all these shafts. The Golden Eagle Co. has erected steam hoisting works on the new shaft which is down 50 ft. This shaft is 4 by 8 ft. in the clear. The ore that is coming out will yield over $30 per ton. The St. Patrick Co. is repairing its mill, and will have it in running order in about 10 days. At the mine, they are taking out very rich ore. Fred Jones has begun work on Crater Hill, on the Crater Hill mine. The ledge is 16 inches thick. Judge Spear had some of the rock from near the surface milled which paid $40 per ton. As the shaft goes down the ore becomes richer, and what is being raised will yield from $80 to $100 per ton. Work has commenced on Shipley, and the ore looks well. At the St. Lawrence they are hoisting good milling rock, with plenty in sight.

Salsig.—The owners had 20 tons crushed this week, which yielded over $65 per ton.

PLUMAS COUNTY.

Rich.—Quincy *National*, Aug. 17: A. C. Light has discovered a ledge on the mountain south of Indian Valley, which is reported fabulously rich.

SAN DIEGO COUNTY.

Golden Chariot.—Cor. San Diego *Union*, Aug. 9: Three shafts have been sunk on the ledge; one 35, one 50 and one 110 ft. deep. Work is being prosecuted only in the 50 ft. shaft. In this shaft a level has been run 150 ft. upon the ledge towards the north and stopes have been started.

The ledge averages about 2 ft. in width.

There is on the dump 150 or 200 tons of rock and at the mill 100 tons which is now being crushed.

The Co. is working 20 men.

Second Ex.—Pat. O'Deou has struck it rich on the second ex. of Golden Chariot.

SANTA CRUZ COUNTY.

Rich.—Santa Cruz *Sentinel*, Aug 17: The Santa Cruz and Brancifort Quicksilver Co. have struck very rich rock in their claim. The cinnabar and pure vermillion being visible in masses and crystals, sulphurets and seams all through the rock.

TUOLUMNE COUNTY.

Rich.—Sonora *Independent*, Aug. 17: Mr. Green, in his claim, above the "Old Tuolumne," has found a number of "pocket lodes," from which he has transferred several hundred dollars.

Old Tuolumne Claim.—This Co. have made an open cut and run a tunnel 100 ft. with a view of tapping their lode 60 ft. from the surface. In this operation they struck a sulphate lode 5 feet in thickness which prospects from $50 to $157.50 to the ton. In their shaft 23 ft. down, they have a quartz lode 2 ft. wide, and increasing as it goes deeper.

Nevada.

ELKO COUNTY.

Railroad.—Elko *Independent*, Aug 17: At 35 ft. in the Snowflake very fine ore, composed of galena, silicate of copper and iron was struck.

A new discovery of silicate of copper ore has been struck just east of the Last Chance, in the Sky Blue.

The Webfoot tunnel is being pushed forward with vigor.

Norton is pushing two tunnels on the Shoo Fly.

The shipments of ore from the Ella are 25 tons per week.

EUREKA DISTRICT.

Phenix.—Eureka *Sentinel*, Aug. 16: Phenix smelting works yesterday shut down permanently. A new furnace of 66 tons capacity is to be immediately erected.

Louisville Con.—The property is on Adams Hill, and there are 10 claims included in the consolidation. On each, shafts have been put down from 40 to 100 ft. There is a world of ore in sight, most of which is exceedingly high grade, going on an average of $150 per ton. Seventeen men are engaged day and night in carrying down shafts at 3 different points. In the Louisville shaft proper a fine body of ore was developed last week at a depth of 90 ft.

Geddes and Bertrand.—On the various dumps are 800 tons of first-class ore, and in the Calico alone there is developed, by actual measurement, 10,000 tons of ore, averaging $92 per ton.

ELY DIST.

Bullion.—Ely *Record*, Aug. 11: During the past week W. F. & Co. have shipped bullion valued at $123,072.49.

Alps Shaft.—The Alps shaft is down 175 ft. and still sinking.

Peavine.—Prospecting at three points; sinking shaft near 95 feet deep and expect to cut the ledge with shaft in 20 ft. Running drift with ledge on 80-ft. level; ore vein improving, and running 30-ft. drift into the hill. Last 50 ft. continues on vein, 15 to 20 inches; average assay, $150 per ton—much of it reaching $300.

Ivanhoe.—Prospecting shaft down 225 ft. Have made a cross-cut in the foot wall, and find the vein five ft. in width, a portion being free milling ore. The new shaft is down 110 ft. with the ledge showing 4 ft. in width. Hoisting machinery has been ordered and steam power will be in operation in a short time.

Shut Down.—On Thursday last the Bowery mill, Bullionville was shut down for repairs and alterations, but will start up again to-morrow.

Kentucky Rifleman.—One shaft is down some 35 ft. on the ledge which is widening and improving fast.

Mocking Bird.—Ledge shows fully 4 ft. in width in bottom of shaft, which has attained a depth of over 70 ft.; 2 feet of the ledge is free solid milling ore.

Condor.—South drift in 20 ft. and shows 2½ ft. of good milling ore in face. A new drift, running north, was started from the bottom of the main shaft during the past week, and at present the ledge shows fully 3 feet in width, half of it being free milling ore.

Maggie.—Commenced work yesterday, a contract having been let to sink the shaft.

Stialing.—Commenced drifting across the ledge at the 175 ft. level during the past week, and as far as opened upon the ore continues to widen in ledge.

Chief Dist.—The Black Hawk is working 2 shifts, and is down about 20 ft; taking out fine ore. The Huber shaft is down 50 ft., with a fine body of ore. The Southern Cross is progressing finely.

HUMBOLDT.

Oreana.—Unionville *Silver State*, Aug. 17: 18 tons were shipped this week from the Chloride, which it is thought will work $150 per ton.

W. H. Baker has commenced work on his Clipper mine.

Dun Glen.—A fine body of ore has been cut in the Tallulah; 8 men are running a drift upon the ledge. Sprague & Co.'s mill has commenced crushing ore from the Laug Syne; 8 men are sinking and drifting upon the Stanford ledge.

REESE RIVER.

Reese River—*Reveille*, Aug. 10: Saybrook.—The 150-ft. east level is being steadily pushed night and day; getting some good ore.

South America.—Getting the old workings cleared of water and dirt, preparatory to doing new work.

Savannah.—Shaft going downward rapidly and steadily.

Freehold.—Shaft going down for the purpose of opening a new level.

Lane & Fuller (Pacific Co).—A large amount of ore will be worked at the Manhattan mill from this mine next week. The mine is steadily improving, and is being vigorously worked.

Morgan & Muncy.—Good ore coming out.

Star of Nevada.—The main tunnel is in nearly 600 ft. and is being driven further.

Lone Star.—Mine looks encouraging.

Piute.—Good ore coming out.

Oregon Shaft.—The mines being worked through this shaft are in splendid condition, looking well and sending up a large amount of first-class ore.

Providential.—Work suspended.

Yankee Blade—Kling & Kelley.—New contracts being let; 20 men employed; force to be increased; donkey engine being erected on air shaft; mine looks good.

Ensign & Southal.—Incline going down on the ledge and exposing good ore.

Sloan & Cooper.—Drifting to the eastward on the ledge, getting ore.

Belmont—El Dorado Co.—Have commenced stoping, and are taking out splendid ore. A new steam pump will be placed in position at the bottom at once.

Monitor Co.—Taking out fine ore; 160 tons in the ore house valued at $250 per ton. Their big tunnel is in 150 ft.; will reach the vein in 150 ft. more; working 30 men.

Belmont Co.—Sinking on Canfield; will soon start off new levels. Also sinking on Highbridge; will soon put up steam hoisting works; working 20 men.

Combination Co.—Working 20 men; taking out fine ore; shipped to Manhattan mill, 25 tons of very rich ore, and lots of the stuff left.

The El Dorado Co. have purchased the Battle Mountain 20-stamp mill, which is being taken down.

Ione—Crown.—Beatty, Sargent & Co., have struck the lode below the break, at a depth of 80 ft., finding five ft. of quartz, carrying from 18 to 20 inches of ore that will mill $200 per ton. They are erecting a whim.

Stonewall.—A force of 8 or 10 men will be put on in a few days.

WASHOE.

Local Summary.—Gold Hill *News*, Aug. 17: Belcher.—Daily yield 360 tons, from the 1,100 and 1,000-ft. levels. The ore breasts are looking well. The main east drift at the 1,000-ft. level, from the incline is in 173 ft., with the face in favorable vein matter. A drift from it, 109 ft. from the incline, is in 37 ft., progressing to meet the drift south from the 1,000-ft. level, which is in fine ore.

Crown Point.—Daily yield 350 tons. The yield last month was 11,000 tons, averaging $25 to the ton; total $385,000. The opening out of the 1,300-ft. level is progressing energetically.

Gold & Curry.—The incline is down 122 ft. below the 1,500-ft. level, making a total perpendicular depth reached of 1,600 ft. The north drift from the 8th station is in 421 ft. and shows some little quartz. The east drift at the 10th station is in 227 ft., cutting some small seams of quartz during the week. The north drift at the 10th station is in 160 ft. and the south drift in 150 ft., the face of both in porphyry.

Julia.—Owing to a breakage in some of the hoisting machinery, work has been suspended in both the shaft and drift.

Woodville.—All the ore-producing sections are looking well, and yielding ore enough to keep the mill steadily running.

Overman.—The shaft is down 45 ft. below the 1,100 ft. level. The main west drift on the 1,000-ft. level has made but little progress during the week having to re-timber a portion of the drift.

Cons. Virginia. — On the 600-ft level the south drift is being continued; a cross-cut is being run east and west from the south end of this drift. All of these drifts are in solid quartz of a favorable character. On the 1,666-ft. level they are cross-cutting west, and expect to reach the vein within 2 days.

Ophir.—The shaft is down 130 ft. below the 1,300-ft. level, in fair sinking ground. The north drift of the 1,100-ft. level is in 65 ft., passing during the week through a heavy body of black dyke.

Savage.—Daily yield 175 tons, worth $28 per ton. The incline is down 125 ft. below the 1,500-ft. level, making slow progress. The south drift on the 1,500-ft. level is in 70 ft. south of the east cross-cut, making 150 ft. from the incline, and will connect with the winze in about 10 days.

Hale & Norcross.—Daily yield 80 tons, 40 tons of which is taken from the upper levels. The work of exploration in the southern portion of 1,500-ft. level is being continued. The main incline is sunk 145 feet below the 1,500-ft. level.

Yellow Jacket.—Daily yield 20 tons. The drift east, at the 1,500-ft. level, from the incline, is in 56 ft. The drift north, at the 13-ft. level, is being driven ahead at a satisfactory rate.

Knickerbocker.—New shaft down 70 ft. below the 400-ft. level. On Wednesday it is proposed to commence drifting at the 400-ft. level for the ledge.

Chollar-Potosi. — Work on the new machinery is pushed steadily. The shaft is repaired to the top of the incline 800 ft. below the surface.

Silver Hill.—Good progress is being made in sinking the main shaft. To-day they have commenced to cut out for the first station, and will commence to drift for the ore vein within 2 days.

Caledonia.—The west drift, at the 400 ft. level is in about 420 ft. in the east casing. The west drift from the 700 ft. level is in 92 ft. in hard blasting ground.

Imperial-Empire. —Prospecting in both the 1,500 and 1,600 ft. levels is being pushed ahead with vigor. The ore in the winze on the 1,600 ft. level is improving in quality as depth is attained.

Buckeye.—The incline is sunk 362 ft. The face of the south drift is in fine ore; the various ore breasts are looking splendidly and the bullion yield satisfactory $1,850 having been shipped day before yesterday.

Phil Sheridan is worked by means of a tunnel about 300 ft. in length, and a shaft is being sunk from it to develop the ledge below.

Utah.—Sinking of the main shaft is continued day and night with 3 shift of men.

Kentuck.—Daily yield 45 tons from the old levels.

Ben Jacket.—The main ledge continues to show better as deeper developed, and some excellent ore is being extracted for milling.

Sutro Tunnel.—Total length 3,000 ft. Work in both the tunnel and shafts along its line progressing energetically.

Justice.—The old Waller Defeat section yielding considerable good paying ore.

WHITE PINE COUNTY.

Review.—White Pine *News*, Aug. 17: Bullion.—The shipment during the past week, was $33,930.49.

Treasure Hill Mines—Eberhardt & Aurora Co.'s Mines.—In the Eberhardt, connecting the Keystone and Blue Belle shafts, for ventilation, in order to sink the Blue Belle deeper; but there is still remaining a drift of about 60 ft. to be completed, for this purpose. Working a force of men night and day. In the North Aurora, south end, the Ridsdale and De Pass chambers show no material change. In the north end work in the Lady's chamber is being prosecuted to the southeast. At present breaking down ore in the Ward Beecher. The International Mill is steadily running.

Beecher Con. Co.—In the North Beecher shaft, a small body of good-grade ore, about 2 ft. thick, has been struck, widening as the drift progresses. Shipping about 35 tons of first-class ore from the Beecher and Edgar mines, daily, to the Co.'s mill.

Silver Wave.—The Boswell works seem to improve as they are being developed. Shipping about 13 tons of ore per day to the Swansea Mill.

Noonday.—The new shaft sunk on croppings is down 175 ft., and about 10 ft. through a body of bigh-grade ore.

Pennsylvania.—In the Jackson shaft, down 25 ft. a body of ore has been struck.

San Juan del Rio.—Ore is being taken out and will be shipped this week to the mill.

Treasure.—The Wheeler tunnel is in about 335 ft. and running on a spar vein of 28 ft.

East Shenoyoan.—Good ore continues to be extracted from the Exchange and Regent drifts; also from the South drift. The ore chamber continues to yield good ore.

Copper Glance. —The North shaft and Northwest drift are in good ore.

Pogonip & Othello.—Running east in a body of ore in the tunnel.

Outside Districts—Schell Creek. —The 5-stamp mill at Rubyville has started up on ores from the Birch mine; but having a small supply of quicksilver was forced to shut down.

Mocking Bird.—New contract to sink 50 ft. has been let during the week. Shaft has been timbered throughout and new and substantial ladders placed in mine. The ledge continues widening as sunk upon, and shows fully 4 ft. in width.

Sterling.—Sinking shaft and making good progress. Ore in bottom has improved greatly during the past week.

Robinson.—The Canton furnace has made a successful run.

Mills—Manhattan.—Running steadily on ore from the Beecher Con. Co.'s mines.

International.—Running on ore from the Eberhardt & Aurora Co.'s mines.

Big Smoky.—Running on O. H. Treasure ore.

Swansea.—Running on rock from the Silver Wave.

Arizona.

Yavapai County.—Prescott *Miner*, Aug. 3: The Tiger people have the new shaft down 104 ft. and the lode is looking remarkably well.

Mohave County.—Work in the Williams Fork copper mines is progressing favorably.

Maricopa County.—Returns from Silver Queen ore shipped to S. F. are, 5¼ tons were sold for $778.62; cost of freight, $440.40, leaving $338.22.

Colorado.

Fairplay County.—Denver *Tribune*, Aug. 14: Dr. Morrison is putting up crushing and sampling machinery at a settlement located at the timber line of Mt. Lincoln.

Mr. Dudley is erecting smelting works at Lincoln, 8 miles from Fairplay.

New discoveries of veins and deposits are frequently being made.

Items—Boulder Co.—Colorado *Miner*, Aug. 8: J. P. Lesher has struck a new and rich lode below the Poor Man, in Grand Island Dist.

On the McFarland mountains, Honten & Co. are sinking on the English Banker with good prospects.

Albright & Co. on Pomeroy mountains have their shaft down 70 ft., and are taking out good ore.

Work will soon be resumed on the North Western.

Above the Caribou W. J. Mann & F. C. Albright are taking out of their discovery as good ore as the Caribou ever yielded at the same depth.

Work has been resumed on the "Sovereign People," at Caribou; Gunn & Co. having taken contracts to sink the discovery shaft 60 ft., and the east shaft 40 ft.

Ed. Fuller has struck a rich lode about a mile west of the Caribou, and about 6 miles further west, Frank McLothin is working a late discovery with profit.

Mr. McBride has sold a third interest in the Isabella to parties in Longmont.

Lake Co.—Capt. Breece is about to commence work on the Berry tunnel.

Summit Co.—Placer mining is in full operation. French Gold Run, Humbug, and other gulches are doing well.

Gilpin Co.—J. B. Chaffee is about to begin work on the Saxon lode.

Work on the Briggs is delayed by the non-arrival of the Co.'s machinery.

The National G. M. Co.'s claim on the Kansas is in good pay.

Mr. Perrin has commenced hoisting water from his mine on the Pewabic lode, preparatory to active mining.

Haskins & Fitzsimmons, working the west drift on the Fiske lode from the Bobtail tunnel, have struck rich ore, 40 ft. from the tunnel. The crevice is 4 ft. wide, with 2 ft. of solid ore.

Park Co.—The Baker is producing largely, and only first-class ore. The Juniata and Musk Ox are developing up admirably.

Prof. Hill, of Black Hawk, has commenced the erection of smelting works at Montgomery, which have a crushing capacity of 15 tons per day. The Moose Co. also intend to erect smelting works at the base of the mountains.

Idaho.

Strike.—Owyhee *Avalanche*, Aug. 10: There has been a rich strike made in the 3d level of the Rising Star, Flint Dist.

Montana.

French Gulch.—Deer Lodge *Independent*, Aug. 10: The miners are doing better than for several years past.

Holcomb, Bell & Roe took out $2,570 from their claim on Pilgrim Bar last week.

Utah.

Bullion.—S. L. *Tribune*, Aug. 12: During July, Dinant & Cutting shipped from Flagstaff, Bullion weighing 328,345 lbs.; from the D. & B. 230,959 lbs., from the Utah 174,518; and from the Saturn 148,118 lbs. Total 882,940 lbs.

Camp Floyd.—Cor. same: Rich strikes are reported in several mines, especially in the Mormon Chief.

Bingham Canon.—A new Co. has been recently organized. They have arranged to develop about 60 claims. They are putting 40 men to work. Capital stock $2,000,000.

American Fork.—The Emma and Flagstaff are the only mines on Emma Hill that are doing any great amount of work. It is reported that the Savage, Montezuma, Hiawatha and and Last Chance mines have been consolidated and sold to an English Company for 1,500,000.

The Sierra is the best mine on Mills hill. Three assays taken at different depths gave $105, $109 and $137 in silver and a good per cent. in lead.

United States Mining Laws and Regulations Thereunder.

[Continued.]

81. All fees or charges under this act, or the acts of which it is amendatory, may he paid in United States cnrrency.

82. The register and receiver will, at the close of each month, forward to this office an abstract of mining applications filed, and a register of receipts, accompanied with au abstract of mineral lands sold.

83. The fees and purchase money received by registers and receivers must he placed to the credit of the United States in the receiver's monthly and quarterly account, charging up in tbe dishursing account the sums to which the register and receiver may be respectively entitled as fees and commissious, with limitations in regard to the legal maximum.

84. The thirteenth section of the said act of May 10, 1872, provides that all affidavits required under said act, or the act of which it is amendatory, may be verified before *any* officer authorized to administer oaths within tbe land district where the claims may be situated, in which case they will have the same force and effect as if taken before the register or receiver, and that in cases of contest as to the mineral or agricultural character of land, the testimony aud proofs may he taken before any such officer on personal notice of at least ten days to tbe opposing party, or if said party cannot he found, then, after publication of notice for at least once a week for thirty days, in a newspaper, to he designated hy the register as puhlished nearest to the location of such land, proof of which uotice must he made to tbe register.

85. The instructions heretofore issued with regard to disproving the mineral character of lands are accordingly modified so as to allow proof upon *that point* to be taken before *any* officer authorized to administer oaths within the land district, and that wbere the resideuce of the parties who claim the laud to he mineral is known, such evidence may he taken without pnblicatiou, ten days after the mineral claimants or affiants shall have heeu personally notified of the time and place of such hearing; hut in cases where such affiants or claimants cannot he served with personal notice, or where the land applied for is returned as mineral upon the townsbip plat, or where the same is now or may hereafter he suspended for non-mineral proof, by order of this office, tben the party who claims the rigbt to enter the land as agricultural will he required, at his own expense, to puhlish a notice once each week for five consecutive weeks in the newspaper of tbe largest circulation puhlished in the county within which said land is situated, or if no newspaper is puhlished within such couuty, then in a newspaper puhlished iu an adjoining county; the newspaper in either case to be designated hy the register; which notice must be clear and specific, embracing the points required in notices under instructions from this office of Marcb 20, 1872, and must name a day after the last day of puhlication of such notice, wbeu testimony as the character of tbe land will he taken, stating before what magistrate or other officer such hearing will be had, and the place of such hearing.

MILL-SITES.

86. The fifteenth section of said act provides, "That where non-mineral land not contiguous to the vein or lode is used or occupied hy the proprietor of such vein or lode for mining or milling purposes, such non-adjacent surface-ground may be embraced and included in an application for a patent for such vein or lode, and the same may be patented therewith, subject to the same preliminary requirements as to survey and uotice as are applicable under this act to veins or lodes: *Provided*, That no location hereafter made of such non-adjacent land shall exceed five acres, and payment for the same must be made at the same rate as fixed hy this act for the superficies of the lode. The owner of a quartz-mill or reduction works, not owning a mine in connection therewith, may also receive a patent for his mill-site as provided in this section."

87. To avail themselves of this provision of law, parties holding the possessory right to a veiu or lode, and to a piece of land not contiguous thereto, for mining or milling purposes, uot exceeding the quantity allowed for such purpose hy the local rules, regulations, or customs, the proprietors of such vein or lode may file in the proper land-office their applicatiou for a patent, under oath, in manner already set forth herein, which application, together with the plat and field-notes, may include, embrace, and describe in addition to tbe vein or lode, such noncontiguous mill-site, and after due proceedings as to notice, etc., a patent will be issued conveying the same as one claim.

88. In making a survey in a case of this kind, the lode-claim should he deserihed in the plat and field-notes as "Lot No. 37, A," aud the mill-site as "Lot No. 37, B," or whatever may he its appropriate numerical designation; the course and distance from a corner of the mill-site to a corner of the lode claim to be invariahly given in such plat and field-uotes, and a copy of the plat and notice of application for patent must be conspicuously posted upon the mill-site as well as upon the vein or lode for the statutory period of sixty days. In making the entry no separate receipt or certificate need be issued for the mill-site, hut the whole area of both lode and mill-site will be embraced in one entry, the price being five dollars for each acre and fractional part of an acre embraced by snch lode and mill-site claim.

89. In case the owner of the qnartz-mill or reduction works is not the owner or claimant of a veiu or lode, the law permits him to make application therefor in the same manner prescribed herein for mining claims, and after due notice and proceedings, in the ahsence of a valid adverse filing, to enter and receive a patent for his mill-site, at said price per acre.

90. In every case there must be a satisfactory proof that the land claimed as a mill-site is not mineral in character, which proof may, where the matter is unquestioned, consist of the sworn statement of the claimant, supported hy that of one or more disiuterested persons capahle from acqnaintance with the land to testify understandingly.

91. The law expressly limits mill-site locations made from and after its passage to *five acres*, hut whether so *much* as that can he located depends upon the local customs, rules, or regulations.

92. The registers and receivers will preserve an unbroken consecutive series of numhers for all mineral entries.

PROOF OF CITIZENSHIP OF MINING CLAIMANTS.

93. The proof necessary to estahlish the citizenship of applicants for mining patents, whether nnder the present or past enactments, it will be seen hy reference to the seventh section of the act under consideration, may consist, iu the case of an individual claimant, of his own affidavit of the fact; in the case of an association of persons *not* incorporated, of the affidavit of their authorized agent, made on his own knowledge or upon information and helief, that the several members of such association are citizens; and in the case of an incorporated company, organized under the laws of the United States, or the laws of any State or Territory of the United States, hy the filing of a certified copy of tbeir character or certificate of incorporation.

94. These affidavits of citizenship may be taken before the register or receiver, or any other officer autborized to admiuister oaths within the district.

95. Copies of the previous mining statutes of Congress, dated respectively July 26, 1866, and July 9, 1870, are hereto attached. Sections one, two, three, four, and six of the former heing expressly repealed hy the ninth section of the act of May 10, 1872, aforesaid, which in its sixteenth section also repeals all acts and parts of acts inconsistent with its provisions.

96. The foregoing will be followed in due time hy such further instructions as actual experience in the admiuistration of the statute may render necessary.

Very respectfully, your obedient servant,

WILLIS DRUMMONN, Commissioner.

To REGISTERS and RECEIVERS, and SURVEYORS GENERAL.

A.—CHAP. CCLXII.

AN ACT GRANTING THE RIGHT OF WAY TO DITCH AND CANAL OWNERS OVER THE PUBLIC LANDS, AND FOR OTHER PURPOSES.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the mineral lands of the public domain, hoth surveyed and unsurveyed, are herehy declared to be free and open to exploration and occupation hy all citizens of the United States, and those who have declared their intention to become citizens, subject to such regulations as may he prescribed by law, and suhject also to the local customs or rules of the miners in the several miniug districts, so far as the same may not he in conflict with the laws of the United States. [Repealed.]

SEC. 2. *And be it further enacted*, Tbat whenever any person, or association of persons, claim a vein or lode of quartz, or other rock in place, bearing gold, silver, cinnebar, or copper, having previously occupied and improved the same according to the local customs or rules of miners in tbe district where the same is situated, and having expeuded in actual labor and improvements thereon an amount of not less than one thousand dollars, and in regard to whose possession there is no coutroversy or opposing claim, it shall and may he lawful for said claimant, or association of claimants, to file in the local land-office a diagram of the same, so extended latterly or otherwise as to conform to the local laws, customs, and rnles of miners, aud to enter such tract and receive a patent therefor, granting such mine, together with the right to follow such vein or lode with its dips, angles, and variations to any depth, although it may enter the land adjoining, which laud adjoining shall be sold subject to this condition. [Repealed.]

SEC. 3. *And be further enacted*, That upon the filing of the diagram as provided in the second section of this act, and posting the same in a conspicuous place on the claim, togetber with a uotice of intention to apply for a pateut, the register of the land-office shall puhlish a notice of the same in a newspaper puhlished nearest to the location of said claim, and shall also post sucb notice in his office for the period of ninety days; and after the expiration of said period, if no adverse claim shall have heeu filed, it sball be the duty of the surveyor general, upon application of the party, to survey the premises and make a plat tbereof, indorsed with his approval, designatiug the number aud description of the location, the value of tbe labor and improvements, and the character of the vein exposed; and upon tbe payment to the proper officer of five dollars per acre, together with the cost of such survey, plat, and notice, and giving satisfactory evidence that the digram and notice have heen posted on the claim during said period of ninety days, the register of the land-office shall transmit to the General Land-Office said plat, survey and description, and a patent shall issue for the same thereupon. But said plat, survey, or description shall in no case cover more than one vein or lode, and no patent shall issue for more than one vein or lode, which shall he expressed in the patent issued. [Repealed.]

[To be Continued.]

Tessie du Motay's Copper Process.

We give below the process of M. du Motay, for treating pyritiferous ores, from the description filed at the Patent Office:

"It is well known that sulphuric and chlorohydric acids employed singly or together dissolve but little or not at all, the or not containing gold, silver, lead, antisulphurets and the double oxysulphurets of copper and iron containing or not contaiuing gold, silver, lead, antimony aud arsenic.

"It has heen impossible, heretofore, to successfully treat these ores in a crude or roasted state, either hy sulphuric, or chlorohydric acid, or by a mixture of these two acids. The solutions of persulphate of iron used alone, cold or warm, to dissolve these ores act very slowly, and for this reason they cannot be successfully employed to melt the copper contained in the complex pyrites, containing this metal alone or mixed with gold, silver, lead, autimony aud arsenic.

"We have discovered a new dissolvent—positive and economical—of the ores of copper, carhonates, oxides, and douhle or multiple sulphurets, and also matts and hlack coppers containing or uot containiug gold, silver, lead, antimony and arsenic.

This dissolvent—which has for its ohject to rapidly dissolve the sulphurets aud oxysulphurets, and all other copper ores, roasted or not—is a mixture of persulphate of iron and chlorohydric acid, or, what amounts to the same, a bath of persulphate of iron, through which passes a continuous current of gaseous chlorohydrio acid.

"The iron, copper, antimony and arsenic rapidly and entirely dissolve in this compound. The iron, oopper aud antimony, dissolved first to a state of chloride, finally return, in yielding their chlorohydric acid, to the state of sulphates, while the arsenic remains in solution, in a state of chloride. The other metals, such as silver and lead, are attacked first hy the chlorohydric acid, and finally precipitated in an insoluble state, in the form of sulphates. The gold, unattacked, follows them into the insoluble residuum. This residuum, separate from the liquid part, is first roasted aud afterward reduced, in the presence of lead, in the cupel. The liquid hath, containing the sulphates of iron, copper and antimony, and the chloride of arsenic in solution, is evaporated to dryness. During the concentration of the hath, a part of the chloride of arsenic volatilizes, while the other part remains in the liquor.

"The salts after evaporation, are recovered hy the water; the sulphate of antimony is precipitated to the state of snhsulphate, nearly insoluhle; and the chloride of arsenic, remaining, passes to the state of arsenious acid, likewise not soluble; while only the copper and iron remain dissolved in the liquor.

When, during the evaporation, all the chlorohydric acid has not heen expelled, and only the antimony and arsenic are left in a chloride state in the liquor, similar reactions to those before described occur—that is to say, the chlorides of arsenic and antimony, recovered by the water after evaporation, pass away, the first in a state of arsenious acid, and the second in a state of oxychloride, insoluhle. The douhle sulphates of copper and iron remaining in solntion are treated hy means of metallic iron, which precipitates the copper by the process of cementation. The protosulphuret of iron remaining is treated, in either a moist or hard state, by the oxygen of the air, or by a mingling of air, chlorine, or nitrous vapors, which brings it to a state of persulphate. The hydrated peroxide of iron remaining insoluble from this operation is separated by decantation and set aside. Suhsequently treated, and dissolved hy sulphurous acid liquid, in conuection with air, it produces sulphate of peroxide of iron, which serves to replace the quantity of sulphate lost in the pre ceding operations. In this manner the chlorohydric acid is displaced by persulphate of iron, which serves the same as the persulphate in the other operation.

It sometimes occurs that in the double liquid of sulphate of copper and iron a small portion of sulphate of silver remains insoluhle. To precipitate to a metallic state the silver contained in this sulphate we cause the reaction of plates of copper or lead, which adhere to the silver, and which we add to the insoluhle residuum before being treated in the cupel.

Claim 1. The mingling of persulphate of iron and chlorohydric acid, which constitute a new and positive dissolvent of the ores of copper, carbonates, oxides, and double or multiple sulphurets, likewise matts and black coppers containing or not containing gold, silver, lead, antimony and arsenic.

2. The reaction above described for obtaining in an insoluble state salts and precious metals contained in copper ores treated by our dissolvent.

3. The separation of the copper in a pure state and the removal of the antimony and arsenic.

4. The incessant regeneration of persulphate of iron and chlorohydric acid, constituting our dissolving liquor.

5. The employment of persulphate of iron with sulphuric acid, in the same manner as we have used ehlorohydric acid.

Separating Silver from Copper.

R. Palm, says the *Scientific American*, prepared the nitrate of silver from small Russian coin, containing a considerable percentage of copper. A rapid separatiou was necessary, and the utensils generally employed in effecting this separatiou of the two metals were wanting. Under these circumstances he resorted to concentrated nitric acid, the different behavior of the two metals to the acid producing the separation.

The solution of the coin is evaporated to the consistency of a thick oily liquid; it is then mixed with concentrated uitric acid (free from hydrochloric acid) when the salt will be precipitated in a crystalline form, while the copper remains in solution. The precipitate, which has still a hluish cast from adhering copper, is easily freed from it by washing it three or fonr times with concentrated nitric acid, it becomes then perfectly white and free from copper. The acid which still adheres to the silver salt evaporates by drying. It is ahsolutely necessary that the solution of the two metals is only evaporated to the oily consisteucy; for when we evaporate to dryness the copper will adhere so firmly to the silver that it can only be separated from it with difficulty. The more concentrated the uitric acid, the more complete will be the precipitation; but even a specific gravity of 1,250 will answer. For every part of solution of the metals three to four parts of nitric acid are necessary.

Mining Machinery.

Coal mining by machinery is likely soon to be a successful fact. The successful working of a coal cutting machine in England is likely to hasten such a consummation and also bring some relief to the threatening fuel famine of that country. The machine referred to is said to do the work of thirty men, with little wasto, and better general results than the old methods of mining. It is run by the help of two men, cutting during the night all that can he removed during the day. It is also represented to work successfully in iron, copper and other mines. It would certainly he a great relief if the most laborious and dangerous part of mining could be accomplished, and thus relieve thousands from underground labor, to say nothing of the great question of strikes among our mining population, which particularly makes sad havoc to the business calculations of our manufacturers, bringing also serious social disturbances in many communities. It is to be hoped, in view of the increasing importance and extent of the mining developments of our conntry, that inventors will not overlook its necessities, and the certainties of a rich reward for any successful efforts to meet the wants and the busiuess requirements of this great field for inventive genius.—*Am. Manufacturer.*

THE NEW ENGLISH MINING LAW.—One of the provisions of the new mining law which has just gone into operation in England creates a system for securing the competency of managers, another lays down certain general rules for the prevention of accidents; a third provides that an amount of ventilation shall be produced in every mine sufficient to dilute the uoxious gases; a fourth establishes a hoard of inspectors to see that the various provisions are carried out. It is further provided that miues shall he inspected at least once in twenty-four hours, and regular reports made.

Useful Information.

Changes of Climate.

Recent upheavals in circumpolar lands are corroborated, in the opinion of Mr. Howorth, in *Nature*, by many evidences of change in climate. An increase of land at the poles, at the expense of the water, will tend to intensify the extremes of temperature in winter and summer, thus making the climate much more less constant and much more severe.

At the present time the name of Greenland is little less than a satire on the country But we have already referred to Mr. Whymper's collections of fossil leaves and fruits from the neighborhood of Disco Island, which indicate a vegetation of southern character and luxuriance for this land above the 7th parallel of latitude in former times. In later times evidence of emigration on the part of Esquimaux from north to south is found in the fact that they were not known as inhabitants of Greenland to the Saga writers; and also in the fact that North American Indians, along their frontier, have a uniform tradition that the Esquimaux were formerly not neighbors of theirs, but that they came across the sea from islands beyond. Moreover, the Esquimanx of both shores of Behring's Straits have been constantly drifting southward, and are only recent occupants of their present areas.

Iceland is well known to have become harsh and untenable in its climate since the days of Norsemen. Ancient Icelandic documents show that on the arrival of the Norwegians, and for centuries afterwards, extensive forests grew in different parts of the island, and furnished the inhabitants with wood both for domestic and nautical purposes. Now these have either wholly disappeared or have dwindled down to mere underwood of birch, willow and mountain ash. Grain, too, was once largely raised there. Now the climate is too severe for the growth of any sort of grain.

The old Norse word for barley still lingers in names in Norway where barley grows no longer. In Scotland many places show signs of the plow for cereal culture where arable farming is unpracticed at the present time. Even in England, as far south as Lancashire, large districts that were once covered with forests are now entirely bare of trees, because trees cannot be made to grow there. "The Romans planted vineyards and made wine in parts of England where the vines will now hardly grow." Beyond the Dwina of Northern Russia there is a large area formerly known as Biarmia, studded with the graves and other remains of a prosperous people, whose wealth and civilization are much dwelt upon by the Saga writers. Others found there these agricultural inhabitants, with their tilled fields. Subsequently they moved westward and southward into Finland.

In Siberia Hedenstrom found on the tundra among steep banks of lakes and rivers large birch trees, complete with bark, branches and roots, apparently perfectly preserved, yet so thoroughly decayed that on being lighted they would glow, but never burst into flame. The first living birch trees appear now quite three degrees to the south, and then only as shrubs. In a cliff beyond the Malaija Kurspataschnaja river birch roots were seen as fresh as if only just torn from the trees, while the nearest woods are seventy miles away. The limit of trees, therefore, in this country, in quite recent times, has been pushed far to the south, without doubt, by increased severity of climate.

How to test Pure Glycerine.—Thomas Koller gives, in a German journal, the methods for detecting the impurities of glycerine. Pure glycerine is neutral, and leaves only a slight residue when evaporated in a porcelain capsule. The adulterated article may leave considerable black residue, and react acid. Pure glycerine, when cautiously mixed with an equal volume of oil of vitriol, is not browned even after the lapse of several hours; the impure often browns immediately. A solution of oxalate of ammonia does not even produce a cloudiness when mixed with pure glycerine, but may give a precipitate with the impure. Pure glycerine, treated with nitric acid and nitrate of silver, yields no precipitate; sulphide of ammonia sometimes gives a black color in adulterated glycerine. Pure glycerine, in large and small quantities, is as clear as water; impure often shows different shades of color, according to the extent of its contamination. Pure glycerine rubbed between the fingers gives no greasy feeling, while the impure resembles fat. The freezing point of pure glycerine is near zero, while the impure may become solid at the same temperature as water. For the purification of glycerine, add ten pounds of iron filings to every 100 pounds of the impure liquid, and occasionally shake. In a few weeks, a black gelatinous sediment will settle and the supernatant liquid will be perfectly clear, and can be condensed by evaporation.

India Rubber.—There are in America and Europe more than 250 manufactories of india rubber articles, employing some 500 operatives each, and consuming more than 20,000,000 lbs. of gum per year.

Why the Sun Makes Round Spots.

Most or all of our readers have probably noticed often, and many doubtless have wondered at the fact that the sun, when shining through the slats of window blinds or other elongated or irregular apertures into a dark or moderately dark room, always falls upon the opposite wall in a series of round spots, instead of taking the form of the opening as artificial light does. The phenomenon has been a puzzle to even many philosophical minds.

We have often noticed the appearance, and admired the elegant and commingling circles of bright light that are pictured upon a white wall when a single opening is left in a blind, just as the sun is setting and have several times sought for an explanation, but never met with a satisfactory one until we found the following in a number of the *Manufacturer and Builder:* When light comes through a small hole into a dark room, it forms on the opposite wall an image of the object from which it proceeds, no matter what the shape of the hole; as, now, the sun is round, the image formed by its light will be round also. If the sun were square or triangular, its light under the above circumstances would form square or triangular spots. As it is, the round spots are real images of the sun of which fact you can convince yourself by watching such images on a day when floating clouds cover up the sun from time to time. You will see the images of the luminous edges of the clouds around your round sun-spots and their dard masses covering the same; and when you use a single hole, these appearances are very striking. The shape of the hole is of no consequence, provided it be small and of a diameter of one quarter of an inch or less.

If there are any of our readers who have never witnessed this phenomenon, it is well worth the while to seek a convenient place and arrange for it. The best impression is made in a bright day, when the sun is about one or two hours high and the room so situated that the suns' rays will pass though the aperture, directly across the room, to the opposite wall. All other avenues of light should be closed.

Paint for Outdoor Work.

A correspondent of the New York *Tribune* says:—Having had a large practical experience in paints of all kinds, I find the best priming for old wood-work, and in fact all wood-work that is exposed much to the weather, is simply Spanish white, or as it is commonly called, whiting mixed in pure, raw linseed oil; let it stand until it is thoroughly mixed, then reduce with oil and add the drier sufficient to dry it. This makes the best, hardest, most durable paint for first coat of anything I have ever tried. Reduce it to the ordinary thickness for priming and apply with an ordinary brush. It must be thoroughly beat together, so as to work out all the lumps of the whiting.

Another correspondent adds:—For weather-worn weather boarding take about one-half common whiting, one-half white lead, throw in small portions of red lead and chrome yellow to overcome the blackness of the wood, or add umber for a drab color. Fresh paint is always best. Hence, where persons wish to do their own painting, it is sometimes best to buy the paint dry. Take a board with a smooth surface, find a muller some three inches in diameter at one end, and conveniently shaped at the other to hold with both hands, and you can mix up your paint to answer your purpose. Flax seed oil is to be used; a little turpentine will make the paint flow more freely from the brush. Small portions of Venetian red and lamp black will do for a dark color. This is the result of thirty-five years' experience.

Insect Motions.—We have probably all wondered at the number of steps a little little child will take to our one when trying to keep up with us. If we could make our legs move as rapidly, we should be able to attain a great speed. It is doubtless owing, in part, to their diminutive size, that insects' wings and legs move so rapidly during locomotion. A scientific observer has made some curious investigations to ascertain the velocity the wings attain during flight. The insect was grasped at the back by a pair of fine nippers, and when it sought to fly one of its wings was directed in such a way that it rubbed its point against the surface of a smoked cylinder which revolved with a known velocity. The wing at each of these revolutions carried away a little of the black smoke which covered the cylinder, and left a trace of its passage. The result of the experiments, allowing in regard to the accuracy for a variety of distracting causes, was to show the following number of beats per second for the wings of each insect: The common fly, 330; the drone, 240; the bee, 190; the wasp, 110; the hawk-moth, 72; the dragon fly, 28; and the cabbage-butterfly which is inaudible, 9. By other variations of the experiments he arrived at similar results.

An Enormous Ruby.—Prof. Shepard, of Amherst College, has recently made a valuable addition to his splendid cabinet of minerals. It is a ruby of enormous size, the largest in the world, weighing 316 pounds. It was discovered somewhere in the South, and was about to be taken to Europe, but Prof. Shepard made a bid of $300, and secured it.

Good Health.

Sweating in Fever.

We make the following extracts from a communication "by a physician" in the *Prairie Farmer:*

There occur many cases of slight ailment, among all enlightened people, which it is not supposed requires the doctor's care, but which the friends of the patient are led to suppose may be cured by a good sweating. Among some people this notion prevails more than among others; some, it is true do not regard it with much favor; some have sweating for the sick, as the saying has it, "on the brain."

The little ills which are believed to so readily succumb to the sweat are cases in which there is more or less fever—there are exceptions, but this is the rule.

There is a certain sort of good sense in this popular belief. What is the office of the function of sweating in the economy of the healthy human body? Surely, by evaporation of the moisture, *to cool the body.* In fever there is increase of temperature, after great heat, and more than ever some cooling is needed, hence the sweating is salutary.

Besides the process is seldom begun in a patient with a fever until that very excitement on which the fever depends is abated—the patient must often become relaxed and tranquil before he perspires. This relaxation is of course highly beneficial, as it is the abatement of the fever, and sweating comes because of it. It don't matter whether the sweat cures the fever, or whether it is simply a sign that it is subsiding; if it never comes except with this consummation it may be proper to do anything to make a man sweat; like the doctor who was sure if his patients could all be made to have fits he could cure them, and so threw them into fits by his medicines first. If a man always recovers from a fever when he sweats—why not then, when he has a fever, make him sweat?

Another good which some conceive to come from the sweat, is the "opening of the pores" of the skin through which various impurities in the body may find exit. How much philosophy there is in this view we will not stop to explain—only to say there isn't much.

We believe many attacks of slight fever have been abated by this measure. Early resorted to, it will not cut short any of the severer types which run a regular course of so many days, by law of their own, and we are positive to have seen cases of this sort that, by the means, and more by the delay it led to, were injured by the stereotyped sweat.

But the acute troubles most likely to receive benefit from the prompt use of this measure are inflamation within the chest—chiefly of the lungs, (lung fever or pneumonia), pleura (pleurisy), and bronchial tubes (bronchitis) in all of which there is more or less fever. We know of certain hospital wards in which patients with these diseases are at once on their admission given a sweat, and we are not certain that the treatment could be bettered.

How to Make One Sweat.

The best way to make a man sweat is to make him warm and fill his blood vessels with water. If his heat, however, is too great he will not perspire and he must be cooled down to the sweating point.

The venerable practice then of putting the children to bed with abundance of clothing and dosing them with pints of mint tea, sage tea and ginger tea is very good. In some cases it is inferior to the so-called rum-sweat, when a patient is a little sick and is not suffering much, so that he can lay in bed with loads of clothes piled on to him and drink all that volume of fluid without complaint, the former measure, if you have determined he must sweat, is to be advised. But if without great heat he is suffering pain, especially if it is in his side, if he is restless and fretful or nauseated, and his head snaps with pain, don't ask him to undergo the torture of his lying in bed. Put him in a chair, with all his outer garments taken off, surround him with several thick bed quilts or "comforters," which shall encircle tightly his neck and fall evenly to the floor, separating the space within and that without the clothing by well-nigh an air-tight wall.

Now place beneath his chair an alcohol lamp, burning high, and have ready an abundance of water for him to drink when he calls for it. In a few minutes he will sweat profusely. After perspiring fifteen or twenty minutes he should be put into a warm bed and covered with enough clothes to keep him from a chill, and he will not unlikely go to sleep and wake up by and by much refreshed

If it is desired to give, in addition to the other measures to induce sweating, some medicine that shall help the process, we have just one drug to recommend, namely, *Dover powder.* This is more to be advised, if coupled with other symptoms referred to, there is much pain. Given in a liberal dose, with warmth and plenty of unstimulating fluid to drink, it is almost sure to cause profuse perspiration.

A liberal dose is ten grains; a medium dose may be five to eight grains for an adult; the dose should be, of course, proportionately less for a child.

One Thousand dollars damages was recovered from a druggist in Jefferson county (Ky.), whose clerk had put up cantharides instead of stramonium in a prescription for piles. Extreme suffering resulted from the application.

The Eucalyptus in Medical Practice.

Dr. Wooster writes to the *Pacific Medical Journal* that he is constantly receiving letters from various sources, both in this and the Atlantic States, asking for information about the medical qualities of the *Eucalyptus Globulus.* In addition to the facts already communicated to that journal, he submits a report of 135 cases treated *exclusively* with fluid extract of Eucalyptus Globulus. The fluid extract used was prepared by Dr. Coleman, Resident Physician at the U. S. Marine Hospital, and he has furnished the following tabular statement, which the *Medical Journal* pronounces "altogether reliable."

The report is certainly a very remarkable one, embracing a wide range of diseases, and so important that we give it in detail as follows:

Remittent Fever,	treated,	5;	Cured,	5;	Improved, —
Chills and Fever,	"	19;	"	19;	" —
Typhoid Fever,	"	9;	"	9;	" —
Nephritis,	"	4;	"	3;	" 1
Diuresis,	"	10;	"	7;	" 3
Incontinence of Urine,	"	3;	"	3;	" —
Vesical Catarrh,	"	27;	"	25;	" 2
Blennorrhagia,	"	13;	"	10;	" 3
Valvular Dis. of Heart,	"	7;	"	0;	" 7
Dysentery,	"	4;	"	3;	" 1
Chronic Diarrhea,	"	13;	"	9;	" 4
Gonorrhea (syphilitic)	"	15;	"	10;	" 5
Dropsy,	"	6;	"	3;	" 3

It appears that out of the whole number of cases (135) 106 were cured and 29 improved.

S. F. Medical Society on the Eucalyplus.

At the recent meeting of the San Francisco Medical Society, Dr. Stout exhibited an ingenious apparatus for the inhalation of medicated vapors. The medicated liquid is kept boiling by a spirit lamp and the vapor conducted through a tube. He had used the eucalyptus in this way, employing the tincture mixed in water. It was preferable to the common atomizer, because of the warm vapor, which is not only medicinal in itself but promotive of absorption. The eucalyptus he had found very beneficial in bronchial and pulmonic affections. Dr. Stout also distributed some *cigarritos* made by enclosing the powder of the leaves in a roll of paper, which were puffed by the members with apparent satisfaction.

Dr. Pigné-Dupuytren testified to the virtues of eucalyptus, which had been fully tested by himself and Dr. D'Oliveira, in the French Hospital. It had been found highly serviceable in affections of the larynx and of mucous membrane in general; also as a tonic. In France it was much used as a febrifuge and by some considered a substitute for cinchona. The leaves growing near the trunk of the tree were the most aromatic. A large number of the trees had been planted around the French Hospital for sanitary and medicinal purposes. The leaves, in drying, emitted a large amount of balsamic exhalations, capable of causing headache in persons much exposed to them, as he had experienced in his own house.

The Salubrity of Napa.—Dr. T. M. Logan, Secretary of the State Board of Health, having been requested by Governor Booth to give his opinion of the Juarez tract near Napa, as a site for a Branch State Asylum, has given a very favorable reply in every respect, except that the Commissioners should have bought more than 200 acres of land. He thinks that no part of the State north of Santa Barbara has a more equable or more salubrious climate than Napa. The winter, it is well-known, is mild, but there was a question about the summer, and he has observations made at 2 P. M. on the first four days of this month, showing that the highest heat in Napa was 80°, and in Sacramento 99°, the average difference of the two places in the four days being 19°. At Suscol, only four miles from Napa, the mean temperature of July is 61°, at Sacramento 71°, and at San Francisco 59°. Typhoid fevers are rare at Napa; intermittent and epidemic diseases have never been observed there; and the proportion of lunatics sent to Stockton has been less, according to statistics, examined by Dr. Stillwagon, than from any other part of the State. We congratulate Napa on its magnificent record.—*Alta.*

Vaccination as a Curative for Small-Pox.—Dr. Furley, in the *London Lancet,* asserts that he is in the habit of vaccinating every case of small-pox that comes under his care, with the effect of arresting the disease in nearly every case. The common method of operating is not efficacious, and it is necessary to inject the lymph into the circulation. For this purpose he uses "a hollow needle with a bore sufficiently large to admit of the introduction of a vaccine tube. The process consists in passing the point of the needle charged with a tube of lymph under the skin, and blowing [forcing? "Blowing" would be a dangerous process.—En. Press.] the lymph directly into the blood."

The Hay Fever.—It is said that this very curious and vexatious disorder, a sort of autumnal catarrh, has never made its appearance in California. This disease makes its annual return in many of the Eastern States with the most remarkable regularity, often attacking the same persons regularly upon the same or nearly the same day of the month, from season to season.

Female Medical Students.—It is said that thirty young women attend the University of Zurich. Somebody who don't believe in womens rights—to study medicine—says that they crowd the young men out of the best seats at the clinics, and smoke, of which the professors complain; while the male students have petitioned the authorities for equal rights.

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Illustrations and Reports of Mining Enterprises Wanted.—Drawings or photographs of mining works that are of general interest to our readers are solicited for publication in this journal. Official reports of Companies, and description of mines of importance, of special interest, are also desired. Sketches of any new method and discoveries will be very acceptable.

San Francisco:

Saturday Morning, Aug. 24, 1872.

Gold and Legal Tender Rates.

San Francisco, Thursday, August 22, 1872.—Legal Tenders buying, 88; selling, 88¼. Gold in New York to-day, 114⅛.

Table of Contents.

ILLUSTRATIONS.—The Diamond, 113. Col. Thomas Scott, 120. Weavers' Improved Boring and Planing Machine, 121.

EDITORIALS.—Waiting for Capital; Academy of Sciences, 120.

CORRESPONDENCE.—Notes of Travel in White Pine County, Nevada—Concluded; Cherry Creek Mines—Montana, 114.

MECHANICAL PROGRESS.—Something New in Pile Driving—Shooting the Piles into the Ground; Precision in Stone Cutting; Screws vs. Nails; Mechanical Architecture; A New Silver Steel; Prospective Abolition of Steamer Funnels; Measuring Furnace Heat, 115.

SCIENTIFIC PROGRESS.—Gases Occluded in Meteoric Iron; A Desirable and Possible Discovery; Sudden Rise in Lake Ontario; Action of Ozone upon Vulcanized Caoutchouc; Phosphorus in Coal; Process for Advancing or Retarding the Hatching of Silkworms; Iron Deposited by Electricity; A New Volatile and Saccharine Substance from Caoutchouc, 115.

MINING SUMMARY from various Counties in California, Nevada, Colorado, Montana and Utah; Mining Shareholders' Directory; Stock Report, 116-17.

USEFUL INFORMATION.—Changes of Climate; Why the Sun Makes Round Spots; How to test Pure Glycerine, 119.

GOOD HEALTH.—Sweating in Fever; The Eucalyptus in Medical Practice; The Salubrity of Napa; Vaccination as a Curative for Small-Pox; The Hay Fever; Female Medical Students, 119.

DOMESTIC ECONOMY.—Washing; To Boil Corned Beef; Apple Pie; Flavoring With Leaves; Kedgeree; Ginseng; A New way to Serve up Peaches; To Put Down Cucumber Pickles; An Excellent Syrup for Soda Water or Other Drinks; Turtle Bean Soup; Blackberry Wine; Newport Fish Pudding; Good Substitute for Chicken Pie; Practical Receipts, 122.

MISCELLANEOUS.—Rapid Manufacture of Vinegar; The Production of Coal; A Phenomenon in Oil Regions, 114. United States Mining Laws and Regulations Thereunder; Tessie du Motay's Copper Process; Separating Silver from Copper; Mining Machinery; The new English Mining Law, 118. The Predicted Comet, 122.

The McMahon Mine.—We saw this week, at the office of the Secretary of the McMahon Mine, Mr. Geo. R. Spinney, some very handsome and peculiar specimens of ore well worth seeing. The surface of the rock is covered with fine wire silver having somewhat the appearance of the wool from a new blanket. It differs from the generality of wire silver in being in such very fine threads. There are little bunches on the ore where it is thicker than in other places, but the threads may be seen all over one side of the rock. The mine from which this ore comes is one of the prominent ones of Schell Creek District, Nevada. The local paper speaks well of its prospects and says the mine bids fair to make a stir in mining circles. It was recently bought by capitalists in this city and is being rapidly and successfully developed by them.

Copper.—The Liverpool metal report of Messrs. James Lewis & Sons, for August, states that the market has been extremely quiet and the prices of Chili bars unsettled, with very limited transactions, prices varying from £100 to £102 for cash, and £102 to £105 for extended prompts. English copper has also fluctuated, and sales have been made at from £5 to £8 per ton below official quotations. At the Swansea sale of July 23d, 2,106 tons of ore were sold at an average of produce of sixteen per cent., an average price of 18s. 8d. per unit. Quotations on Aug. 1st were £100 to £102 for Chili bars on spot; ore and regulus 19s. to 20s. per unit. Chili exports to July 2d amounted to 31,917 tons. Stocks of West Coast produce are estimated at 18,676 tons fine, against 13,920 tons on July 1st.

Opening Address.—Prof. E. S. Carr delivered a very interesting address at the opening of the California Horticultural Society, on Thursday afternoon last. A full report of the same will be found in the Rural Press of this date.

On File.—Communication from L. P. Mc.

Waiting for Capital.

One of the most serious drawbacks to the development of mining industry on this Coast, and to the interests of miners themselves, is the prevalence of the evil of "waiting for capital." This is more particularly noticeable in newly-discovered districts, although its influence extends all over the country. We know very well that lode mining requires some considerable outlay to be made profitable, that is, where mills or furnaces are considered necessary adjuncts to the property of the mine; where the ore is worked at custom mills, however, there is no reason why individuals cannot develop their mines to a certain extent without forming an incorporated company with the names of capitalists as trustees. If the value of all the time lost in waiting for these individuals to turn up, were compared with the actual assistance they render when they are found, no miner would consider the percentage in his favor, in the long run, worth spending an hour to gain.

The existing evil is, no doubt, engendered by the very natural desire for sudden wealth with little effort, which is a recognized characteristic of a large proportion of our mining population; nevertheless that class should bear in mind that instances of that sort are few and far between, and the larger proportion of those who realize fortunes in the mines are the men whose energy and perseverance has led them to develop their property to such an extent that it is a desirable one for capitalists to invest in. There are many hard working men scattered over the mining regions who have partially developed their mines and sold them at low figures and then hunted up others and sold them in turn. That is all very well, for there they have the advantage of the capitalist for knowing, (or supposing they know, which is all the same) where to find others equally as good as the claims they sell. That is legitimate enough; these miners do not waste valuable time, but are paid a certain price for the developments they have made. What we refer to particularly is the prospecting miner who makes a discovery, stakes off a claim, gets a hole in the ground ten or fifteen feet deep, which he calls a shaft, and then sits down or idles away his time around the camp, "waiting for capital" to come and buy him out. This class of people expect the representative of some English or American company to offer them many thousand dollars for property which has little else than prospective value to recommend it. They are not content with a fair equivalent for their time and labor. They may be morally certain that the whole thing is not worth more than $1,000, but let some man representing a company make inquiries as to its value, and they immediately, by means of strong imaginations, become possessed with the idea that they are millionaires, like "Mark Twain," and ask an outrageous price for it. Sometimes they are successful, but not so often now-a-days as in times gone by. Hard experience has opened the eyes of capitalists and when they put any money in a hole in the ground they want to put it in a big one and want to know what is at the bottom of it too.

Not only the loss of time alluded to should be taken into consideration but the question should be looked at in a moral point of view. Idle men as a general thing, will drink, play cards, etc., and the class who are always seen around a mining camp who seem to have nothing particular to do are generally those who are waiting "for something to turn up."

The advantages in favor of individual miners are daily increasing, as are also the chances for them to realize profit by development rather than by selling out. Railroads are being built or projected all over the country. There has been a reduction in price of freight on ore along the line of the Central Pacific Railroad; smelting works and mills are being erected at many new points; and so much attention is being turned to mining matters that it is always easy to dispose of ore which is worth shipping. It is a mistake to suppose that the bulk of the bullion product of this coast comes from prominent incorporated mines. The greater proportion of it is extracted by co-operative associations of laborers, or by single individuals who hire assistance. This is, however, more the case with gold than silver mines.

The time is really at hand when a mine is as good for the miner to own as for capital to buy, and the object of this article is to impress this fact upon the miners, encourage them to stability of purpose and a direct prosecution of labor to a legitimate end—making money out of their mines. It is readily admitted that a certain amount of money is required to develop a mine, but the new mining laws in which a title in fee can be acquired with little expense by the discoverer gives such property a legitimate negotiable value for the purpose of security on necessary loans, and gives impecunious individuals a chance for a start. If a man has a ledge upon which he considers himself justified in expending his labor, he will seldom find it difficult to get some one to aid him for an interest in it, and it is much better to dispose of a part of it in this manner than to hold on to it to no purpose. This is a co-operative feature which should be encouraged having, as it does, a legitimate business in view. Most of the more important mining has been done in this manner by men with more energy than capital.

COL. THOMAS A. SCOTT.

Another evil brought about and encouraged by the practice of waiting for capital is the system of "bonding" mines, which retards mineral development more than many of us are aware of. A certain person obtains a bond from the owner of a mine for which he agrees to pay a certain sum within a stated time for a deed of said mine. These bonded mines are generally only partially developed, and the middle men who bond them for small sums of course expect to dispose of them to third parties at a large advance, which they sometimes do, but most often don't. This business is not carried on to so great extent as formerly, still it is unfortunate that the sales cannot be effected without the assistance of these brokers. The trouble about the system is that after the mine has been bonded, the owners, relying on the representations of the middle men that the property will be sold at a certain time, always make it an excuse to be idle until such time expires. If the ledge shows ore they are afraid to go ahead for fear of losing it, and as in any case they will get no more than the specified amount, there is no inducement for them to work, so they "wait for capital." Extensions of time are often asked, and granted, and much time is consumed and development retarded. While the system has advantages, it is more than probable that they are over-balanced by the effect it has on making idle men. Of course where a mine is in close proximity to a more thoroughly developed one which shows rich or large bodies of ore, it acquires a certain prospective value which may warrant the owners in waiting to sell out; but even in such cases why should they not go on and prove actual value and realize still larger sums. Those who undergo danger and privation in developing the mines should surely be the ones to reap the rewards.

There is no class of men on this Coast whose prospects are so bright for acquiring a competence as our hard-fisted miners, will they but adopt a judicious plan of development and seek the wealth from their own property rather than from the purses of others. The extent of country prospected on this Coast is immense, and that yet undeveloped of still greater scope, but we need but legitimate mining to render it available. We must look for actual, not ideal wealth. A miner with a claim and a $1,000 gold bar is far richer than he with fifty ledges who imagines he has millions of wealth to pan out. The former is by far the most useful man to the community. He is a producer, and an important one. It should be the effort of every individual, and the press particularly, to bring about a proper state of affairs in this connection, encourage industry and open all the avenues possible for the miner to realize his wealth out of his own property, and destroy the illusions of prospective wealth to be gained by "waiting for capital."

Academy of Sciences.

The regular semi-monthly meeting of the Academy of Sciences was held on the 19th inst., Prof. Davidson in the chair. A number of gentlemen were proposed as members, to be acted upon at next meeting. Among the

Donations

Was a collection of fossil bones from the "John Day" Miocene in Oregon, presented by C. D. Voy. Mr. Harry Andrews, of Woodward's Gardens, presented a bottle of minute seeds, which the donor denominated "flea seeds." They were sent from Stockton by Joseph Neale, unaccompanied by any description. These seeds were fine specimens of animated nature, since they possessed the faculty of hopping about in a most peculiar manner. Dr. Gibbons suggested that they were most probably "poppy seeds," judging from this characteristic. We give this remark, as it is the only thing in the shape of a pun that we happen to have heard at any of the meetings. Professor Davidson, upon breaking one of the seeds, announced that it contained a small worm or bug, which accounted for their peculiarity. The members threw no light on the question of species, but took the seed under consideration.

Dr. Gibbons presented some apples of last year's growth in a pretty good state of preservation. They were preserved in a box exposed to the air.

Mr. R. E. C. Stearns read an interesting paper on the *Purpura Canaliculata* of Duclos, a species of shell which ranges from Sunalaska south to Monterey. Most of the specimens shown being from Vancouver Island. Specimens from there are less variable in size and form than those from farther north and are generally a more delicate shell. The specimens from Sunalaska to Monterey, including intermediate places vary greatly in size, color and general outline, as do the other *purpuridæ* found in the same limits.

The Hassler Expedition.

Professor Davidson announced that he had received an answer to a telegram to Professor Agassiz, who is now in San Diego, and that that gentleman would probably be in San Francisco this week. [Dispatches received since the meeting state that the "Hassler," with Prof. Agassiz and party on board, will leave San Diego on the 24th for this port.]

A special meeting of the Academy will be called should it suit the convenience of the distinguished scientist to be present. A committee consisting of General John Hewston, Dr. Blake and Dr. Gibbons was appointed to welcome Professor Agassiz on his arrival, and invite him to attend a meeting of the academy.

The Observatory in the Sierras.

Professor Davidson made some interesting and important statements with regard to the

proposed new observatory in the Sierras. In pursuance of instructions he had been on the Sierra Nevada to make observations relative to the importance of high localities for the use of telescopes that would bear high power; more especially for the large telescope now being manufactured by Clarke, to be finished in October, and which will cost $40,000. The Professor had visited Clarke and seen the operation of grinding the glasses, which will measure 26⅞ inches in the clear. The telescope is expected to excel Lord Ross's famous one. Such a glass would carry a power of from 4,000 to 6,000, and it would be next to impossible to get a sufficiently steady atmosphere more than one or two nights in a year, in a locality nearly on a level with the sea. On this coast he had found a state of atmosphere that permits us to see stars at least one magnitude smaller with the same telescope than would be possible in New England. He had employed the same glasses that he had used a long time to determine this point.

The Professor narrated some of his experience in the Sierras which proved that the high altitude and purity of atmosphere very much increased the accuracy and frequency of observations. He had nowhere else seen such a clearly cut outline and delineation of the surface of the moon, and had seen particular stars with a telescope which he had used 20 years and was unable to do so with it from the seaboard. The sensation of astronimical observers as of an undulating, dense substance between them and the object observed was not felt in the least. In this elevated position we get rid of a great amount of atmosphere and with the purity of air, and large telescope, we may expect marvelous revelations when the proposed observatory is finished.

He was fearful that further East, atmospheric influences would prevent such perfect observations. At Sherman, for instance, in the Rocky Mountains, all the heated air from the plains rising and coming over the observer would deter operations. The air in the locality selected was different, and he had been able to make perfect observations five nights out of the six. The remarks of the Professor were very entertaining and instructive on this subject, and his report was favorable for the location of the observatory in the Sierras.

The resignation of the Secretary, Dr. Hewston was received, but as it was hoped that he might be influenced to retain the position, it was laid over till next meeting.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[From Official Reports to DEWEY & CO., U. S. and Foreign Patent Agents, and Publishers of the Mining and Scientific Press.]

For the Week Ending July 16th.*

Pile Driver.—John T. Baldwin, Petaluma, Cal.

Printing-Press.—Amos H. Bangle, Brooklyn, Cal.

Compound Implement.—Evan A. Edwards, San Buenaventura, Cal.

Portable Garden-Sprinkler.—John Gibson, San Francisco, Cal.

Tuck-Creaser for Sewing-Machines.—Jnstin J. Graff, San Francisco, Cal., assignor to himself and Francois Smith, same place.

Griping Attachment for Rope-Ways.—Andrew S. Hallidie, San Francisco, Cal.

Filter.—Prosper Huerne, San Francisco, Cal.

Hydraulic Telescopic Platform-Elevator.—Judah Parker, and Isaac Cook, San Francisco, Cal.; antedated July 11, 1872.

Ice-Machine.—Samuel B. Martin and John M. Beath, San Francisco, Cal—Patent No. 127,180, dated May 28, 1872.

For the Week Ending July 23n.

Gaiter-Shoe.—Adolph Baron, San Francisco, Cal.

Apparatus for Collecting the Precious Metals in Mining Sluices.—John B. Beers, San Francisco, Cal.

Top.—Nathaniel D. Clark, Oakland, Cal.

Process of Manufacturing, Laying, and Finishing Artificial-Stone Pavements.—George L. Eagan, San Francisco, Cal.

Belt-Shifter.—Samuel Forsythe, San Francisco, Cal.

Sewing-Machine.—William H. Hanna, Petaluma, Cal.

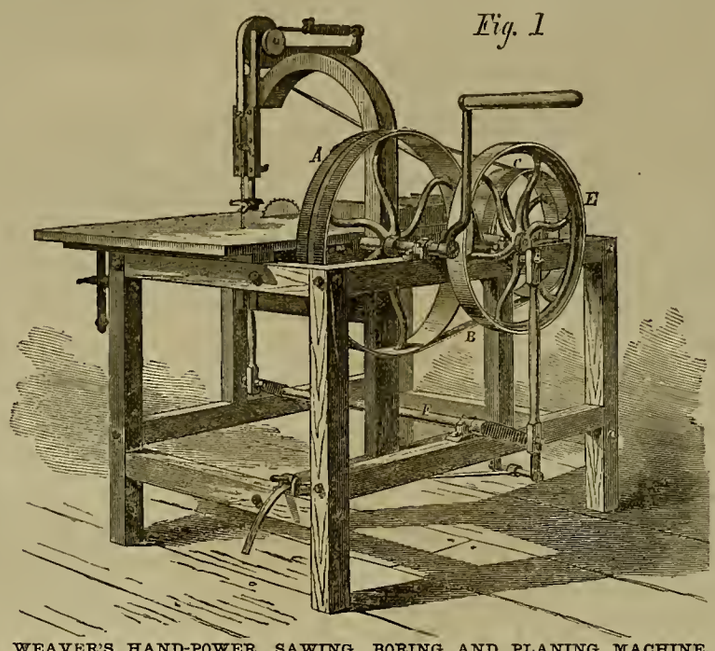
Note.—Copies of U. S. and Foreign Patents furnished by Dewey & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency

*The patents are not ready for delivery by the Patent Office until some days afterward.

Weaver's Hand-Power Sawing, Boring and Planing Machine.

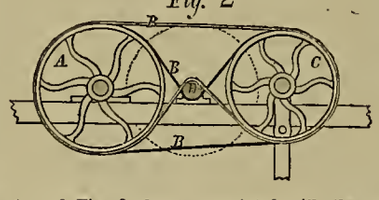
The machine here illustrsted is designed to meet the want long felt by carpenters, carriage-makers, cabinet makers, and other wood-workers for an efficient practical machine for sawing, boriug, light planing, etc, that could be worked by hand. The immense loss of power incurred in attaining the nccessary speed by any of the methods in common use has rendered the experiments of many inventors in this direction abortive; and it long ago became evident that in order to do such work effectively with only the strength of one man as the motive power, some plan must he invented by which the necessary velocity might be attained without incurring the customary loss of seventy or eighty per cent. of the power applied through the side strain and friction incident to all the nsnal means of multiplying speed. Mr. Weaver, who is a scientific and practical mechanic of experience, has finally devised a plan and perfected a machine by which nearly all this immense wastage is avoided, and the motive power so well economized that one man can readily turn the crank to do small jobs, and all the lighter kinds of work, such as wood-workere have always been accustomed to do by hand, and, it is claimed, with an expenditure of not more than one-fonrth of the time and etrength that is required to accomplish the same result with the old-fashioned elbow movement. The machine is represented in Fig. 1, and Fig. 2 shows the detail of the pulley and belting, arrangements. *A* is the driving pulley or drum, and *B* are belts which pass around it and around the loose pulley, *C*, in such a manner that one of them bronght down from the top of the large pulley passes under the small pulley and the other brought up from the bottom passes over it, the small pulley rolling between the two belts in the same manner that a boy spins a top between his hands. By this peculiar arrangement nearly the whole circumference of the small pulley is exposed to the frictiou of the belts, which ensures power, and high velocity is obtained direct from the main pulley or driver; and this, too, without side strain and sequent friction, for the two belts pull in opposite directions with equal force, and so balance each other. The power is applied to one of the large pulleys, and to the shaft of the small one is attached in the usual way a circular saw, auger, cutter-head, or any other tool to which it is desired to impart a rapid rotary motion. On the end of this same shaft is the balance wheel, and a crank that by means of a pitman and rocker shaft drives the scroll saw.

Fig. 1



WEAVER'S HAND-POWER, SAWING, BORING AND PLANING MACHINE.

Fig. 2



These Machines are being manufactured extensively at the Greenwich Mowing Machine Works, at Greenwich, Washington Co., New York. A large number of them have been sold during the past six months, and are now in daily use in the hands of practical men, many of whom have furnished the manufacturers with voluntary testimonials setting forth their satisfactory working and general utility.

Further particulars, price list, etc., may be obtained by addressing the manufacturers as above.

The Diamond Drift.

The diamond excitement in this city seems to be pretty fully kept up, even if it does not increase in intensity. It is wonderful how many people are coming to the surface, who know all about the occurrence of precious stones in the region towards which so many eyes are now directed, and with such anxious hopes of prospective fortunes, and yet who never before thought of it. Five different companies have already been formed in this city; also one at Salt Lake City, one at Virginia City, and one in Arizona, to proceed to, and hunt for diamonds, etc., in the new Arizona diamond fields. These companies may be enumerated as follows:

1. The Roberts-Harpending Co., who have men already on the ground and contemplate sending out a small party with supplies, etc.

2. The Miner Company, now nearly ready to start.

3. The Catlin Co., who go ont under the command of Mr. Catlin, who has spent four years in that region in the U. S. army employ, and who is thoroughly acquainted with the same, and with the Indians and their habits, etc. Mr. C. informs us that when there he often met with various precious stones, many of which he brought home with him as curiosites, but ignorant of their value.

4. The Gen. Ihre Co. The general is acquainted with the country, having passed some time there in passing through with a batallion of U. S. troops some years ago.

5. The Greenberg Co., made up mostly, if not entirely, of Hebrews.

6. The Salt Lake Company, already on the road.

7. The Virginis City Co., who are about ready to send out a party with a guide well acquainted with the country.

8. The Spencer Company—a private association of wealthy gentleman in Arizona, several of whom have already visited the region on other business. This is not a stock company; all the members (five in number), go personally, taking with them such laborers and assistants as they may desire. This party is also by this time probably well on their way to the new Golconda.

All the parties from this city go under strict military discipline, armed to the teeth and fully equipped for all anticipated emergencies. They go for a year's stay. It is probably not safe to go in parties of less than twenty-five to thirty, and then there will probably be some arrangements by which one or more parties will be constantly within supporting distance.

Colonel Thomas A. Scott.

Colonel Thomas A. Scott, of Pennsylvania, a gentleman whose well-known enterprise in building and managing railroads has secured for him the appropriate sobriquet of "Railroad King" arrived in this city with a party on the 20th inst. He is here on business connected with the interests of the Texas Pacific, better known as the Thirty-second Parallel Railroad, of which he is President. Among the party accompanying Colonel Scott are Colonel John W. Forney, of the Philadelphia *Press*, Governor Throckmorton, of Texas; Hon. J. S. Harris, of Louisiana; Hon. John Sherman, of Ohio; General G. M. Dodge, of the Union Pacific Railroad, and Colonel George Williamson.

Colonel Scott, who will be recognized as the subject of the illustration on the opposite page, is probably the greatest railroad manager of the age, and the most prominent and best known man in that connection in the United States. His management of the Pennsylvania Central Railroad and its associated lines is unrivalled in the records of railroad operations. He is President or Vice-President of railroads too numerous to mention. He has built up both himself and the roads with which he has been connected by a fair and judicious policy, and has made it to the interest of the people to help him in his enterprises. His visit to this coast will no doubt prove of advantage to the community, as he will make such suggestions with regard to the railroad interests of our State as will be of benefit to the people. We shall probably have more to say of the movements of Colonel Scott and party at some future time.

Plumas County Copper.—Among the numerous copper mines in Plumas County, the only one now being worked to our knowledge, is the Montgomery, in Indian Valley, near Taylorville, belonging to Geo. C. Perkins and Wm. Shinn. They have been running a tunnel which will tap the ledge 250 feet from the surface; this tunnel is now in upwards of 500 feet, and they expect to meet the ledge in from 20 to 40 feet more. The shaft is down 50 feet and the ledge is estimated as being about 20 feet in width. They expect to begin to ship ore as soon as the ledge is reached by the tunnel. A number of other mines in Plumas County are watching the progress of this mine with interest, since if it is successful, numerous other mines will be opened also. It is supposed by many that copper mining in that section of country will not pay, but the owners of this mine think they can ship their ore here for about $35 per ton and make a fair profit at that, so if they strike what they expect to we will doubtless hear of further developments in that section of country.

Motive Power.—A petition has been presented to the Board of Supervisors by H. J. Booth, Horace Davis, Joseph G. Eastland, A. J. Moulder and James R. Smedburg, asking that they be allowed the privilege of laying pipes for the transmission of steam through Folsom, Howard Market, First, Fremont and Beale streets, from a central system of boilers, to manufactories that need such power. Another petition is under advisement which was presented by Risdon and others asking permission to lay pipes for the purpose of transmitting power by air or water to different points in the city to work elevators, hoists, machinery, etc. These are important enterprises and it is to be hoped that they will ultimately be carried out.

Polytechnic School.—We have received a prospectus of Rhenish Westphalia Polytechnic school at Aachen Prussia. The special branches taught are mining and engineering, mechanics, higher mathematics, chemistry, etc. The time necessary for machinists to remain at the school is set at either three or four years; for architects and engineers four years. The school is under the control and management of the State authorities and judging from the cuts of the building and grounds, in the pamphlet, the institution must be an extensive one. A supplement containing advice to parties desiring an education in any of the above branches is also enclosed.

Domestic Economy.

Washing.

There is more carelessness in *rinsing* clothes than in any other part of the laundress' work. The soap may he perfect; the streaks and spots faithfully ruhhed out; but if the clothes are thrown into the rinsing tuh and harely covered with water, or hastily passed through it, the laundress cannot expect much credit for her labor.

The rinsing tnh should have a generous supply of water, the blue carefully stirred in, and only a few pieces put in at a time. Each article should he vigorously shaken np and down, and fully opened, that the water may flow freely through every part; then passed through the wringer, again well opened and held up to tbe light, to see that all dirt and spots have heen removed. This having heen well done, put each article into another tub of clear water. Do not put any piece in the hasket just as it comes twisted out of the wringer, the first time; bnt shake it out and pass it at once into the second tuh, to he again rinsed with the same care and thoroughness.

If possihle, have your clothes dried in the open air, but if windy or freezing, never starch until they have heen dried and brought into the house.

Clothes should not be thrown carelessly on the line, but snapped ont and hung up straight and smooth. Sheets, bed-spreads, and table linen, particularly, should be thus carefully hung up,—hring the hems or selvages straight and true,—and pinned strongly to the line.

This may seem trivial, and, perhaps, whimsical; but the wisdom of the whim will be proved in the ease with which your clothes can be ironed, the pleasure you will experience when you see them lying evenly and neatly in their places on bed or hoard, and we think clothes will wear enough longer to convince you that it is also an economical *whim*.

To Wash Flannels.

White flannels may he kept soft and free from shrinking, if properly waehed.

Put enough soap into boiling water to make a strong suds, and then put in the flannels, preseing them under the water, with the clothee stick. When cool, so that you can hear your hands in the suds, ruh them carefully, and when clean, pass them through the wringer into another tuh of hoiling water, into which yon have thoroughly stirred a little blueing. If your first suds is strong enough, the flannel will retain sufficient soap for the rinsing water. Shake them up and down in the last water with the clothes stick till well rinsed, or cool enough for your hands; then pass through the wringer once more, and as quickly as possible; enap them well, pulling them into good shape; hang out in a clear sun, or brisk wind, and when two-thirds dry bring in; snap and pull again; fold and roll up hard for a little while, and then iron and press till dry.

Never wash flannels in cloudy or stormy weather, and always iron as soon after bringing in, as you can. If they lie long folded they will shrink.

To Boil Cornen Beef.—If the piece is very ealt let it soak over night. If young heef and properly corned, this ie unnecssary. For boiling, pour cold water over it after washing off the salt, letting the meat be well covered. The rule is twenty-five minutes to a pound for boiling meats, bnt corned heef should never be boiled—it should only simmer, by being placed on a part of the range where the simmering can he uninterrupted from four to six hours, according to the size of the piece. If it is to he served cold, let the meat remain in liquor until cold. Tough beef can he made tender by letting it remain in the liquor until the next day, and then bringing it to the boiling point just hefore eerving. For rump pieces this is a superior method. A brisket or platc piece may be simmered until the bones can be easily removed; then fold over the brisket piece, forming a square or oblong piece; tie over it a piece of muslin, place sufficient weight on top to press the parts closely together, and set it where it will become cold. This gives us a firm, solid piece, which, eaten in slices, is a delightful "relish."

Apple Pie.—It ie a conceded fact that the most superior apples make hut an insipid pie in the spring. I would like to give your numerous lady readers the henefit of my improved recipe, if you please.

Make a nice, flaky crnst, pare and cut the apples in rather thick slices, spread them on your plate an inch thick, or more, sprinkle a handful of sugar over them (I prefer white,) then spread two or three tahlespoonfuls of currant jelly over them, a little flour from a dredge, nutmeg, three tablespoonfuls of water, and a lump of butter the size of a small butternut, and you will have a superior pie. Grated white sngar on the top crust before pntting in the oven is an improvement. To prevent the juice boiling ont in the oven, wet tne edges of your crust with the white of an egg; water will do, hut egg is better.

An Excellent Sauce may be made hy cutting a cucumber and onion as small as millet seed; and adding a teaspoonful of cayenne pepper, a wine glass of Madeira, the same of vinegar, and a little salt.

Flavoring With Leaves.

D. Bury, in the *Garden*, says: Leaves are more or less popular for garnishing, hut it hae often surprised me that they are so little used for flavoring. With the exception of eweet and bitter herhs, grown chiefly for the purpose, and parsley, which is neither hitter nor sweet, hut the most popnlar of all flavoring plants—comparatively few other leaves are used. Perhaps I ought also to except the sweet bay, which is popular in rice and otber puddings and certainly imparte one of the most pleasant and exqnisite flavors. On the other hand, what a waste there is of the flavoring properties of peach, almond and laurel leaves, so richly charged with the eesence of bitter almonds; so mnch used in most kitchene. Of course such leavee must he used with cantion, hnt so must the spirit as well. An infusion of these could readily he made, either green or dry, and a tea or tahlespoonful of the flavoring liquor used to taste.

One of the most useful and common of all leaves for flavoring is that of the common syringa. When cucumbers are scarce, these are a perfect snbstitute in salads or anything in which that flavor is desired. The taste ie not only like that of cucumbers, hut identical—a curious instance of the correlation of flavors in widely different families.

Again, the young leaves of cncumbers have a striking likeness in the way of flavor to that of the fruit. The same may he affirmed of carrot tops, which are like carrots in taste ae may he. In most gardens there is a prodigions waste of celery flavor in the sacrifice of the external leaves and their partially hlanched footstalks. Scores of sticks of celery are cut up into soup, when the outside would flavor it equally well or better.

The young leaves of gooseberries added to hottled fruit give a fresher flavor and a greener color to pies and tarte. The leaves of the flowering currant gives a sort of intermediate flavor between that of hlack currants and red. Orange, citron and lemon leaves impart a flavor equal to that of the fruit and rind combined, and somewhat different from both. A few leaves added to pies or hoiled in the milk used to hake with rice, or formed into cruets or paste, impart an admirable and almost inimitable bouquet. In short, leaves are not half so much used for seasoning purposes as they might be.

Kengeree.—This dish, which may readily be composed in any kitchen, however hnmble, is a universal favorite wherever it is known; and it is so simple in ite construction that it is marvellons that it is not common at every breakfast table, and more frequently eaten both by rich and poor. The great secret of its success depends chiefly on its being served very hot, aud also in being judiciously seasoned. Hard boiled eggs; boiled rice, and boiled fish of any kind (the remnants left from dinner will do), in almost equal qnantities, more rice perhaps than fish and eggs, constitute its component parts. Chop them all up together, put them in a stew pan, with a small piece of fresh butter, stir them abont well, make them hot, and if the cook is endowed with liberal ideas regarding pepper and ealt, kedgeree will be noted an excellent breakfast dish. The essential elements for its preparation are inexpensive, and it is strange that the poorer classes have not hitherto adopted this means of flavoring a palatable nourishing dish of rice.—*Land and Water*.

Ginseng.—A correspondent inquires about ginseng. The Chinese eat the root and pay high prices for it, obtaining their supplies from their own country—Manchooria—and the northern portion of the United States east of the Rocky Mountains. It is, we believe, not cultivated anywhere, and it is not certain whether it conld be cultivated with profit. Ginseng is not consumed, we helieve, hy any other people than the Chinese and some of the Indians of this country. It grows wild ahout the headwaters of the Mississippi, and is in great demand for exportation to China.

The root of the plant is dried and eaten. When first taken from the ground it has a jointed, fleehy, taper root, ae large as a man'e finger. When dry it is of a yellowish white color, with a mucilaginons sweetnees to the taste, somewhat resemhling that of licorice, hut slightly bitter.

A New Way to Serve up Peaches.—Take good-sized freestone peaches, wipe them with a towel, halve them, and place them flat side down, in hot hutter or lard. Let them fry to a nice hrown, then turn and fill the seed-cup with sugar, which, hy the time the fruit is properly coated, will be melted and form with the juice of the peach a rich syrup. Serve up hot, and if yon don't like them you need not repeat the experiment. Most persons think the dish a superh one.

Medical writers caution people against eating peaches served up in any form in the evening. It is asserted that they are depressive to the circulation, and exhanst the system by the prussic acid which they contain. It is hetter to eat them in the morning or not later than an early dinner so that eome exercise may follow eating to aid their proper digestion.

To Put Down Cucumber Pickles.— Take two quarte of molasses to one of water, or in that proportion. Put in the cucumbers, fresh from the vines, adding more molasses as you fill in. Set them in a warm place, and in a few weeks they will he sufficiently sour to suit any palate. Spices can he added after they become sour.

An Excellent Syrup for Soda Water or Other Drinks.—Take the fresh rind of one large or two small Havana orangee, two pounds of white sugar, and one pint of water. Cut the rind in small pieces, place in a wedgewood mortar, and with a peetle grind into a eoft mase, using two ounces of sugar during the process of manipulation. Then add six ouncee of water, stirring well so as to dissolve the sugar. Then etrain through muslin. Repeat the process with the same amount of sngar and water, and again strain. Tben mix the remainder of water and sugar with liquid so ohtained in a porcelain kettle, place over the fire and use sufficient heat to dissolve the sngar. The above makes a moet delicious syrup for soda water, and can be dispensed with or without cream.

Turtle Bean Soup.—Soak one and a half pints of turtle heane, in cold water, over night. In the morning drain off the water, wash the beans in fresh water, and put into the soup digester, with four qnarts of good beef stock from which all the fat has been removed. Set it where it will hoil steadily, but slowly, till dinner, or five hours at the least—six is better. Two hours before dinner put in half a can of tomatoes, or eight fresh ones, and a large coffee cup of tomato catsup. One onion, a carrot, and a few of the outside stalke of celery, cut into the soup with the tomatoee, improves it for most people. Strain through a fine cullender, or coarse sieve, ruhhing through enough of the beans to thicken the soup, and send to table hot.

Blackberry Wine.—Don't can, or dry, or eat up all your hlackberries. Save some of them for wine, of which a most excellent article can he made—good alike for the tahle and kitchen, and highly valuable for the sick room. In some classes of diseases, especially affections of the howels, a first-class article of blackberry wine is more valuable than the most costly foreign wine, even when made from the pure juice of the grape. One great reason why hlackherry wine is not more appreciated is hecause it is so seldom properly made; and yet there is no difficulty in making a good article, and hy a very simple process.

Newport Fish Pudding.—Pick cold fish into small hits, removing all the bones. Thicken some boiling milk with flour, and stir the fish into it, season with hutter, pepper and salt. Pnt into a pudding dish, and spread cracker or hread crumhs, thickly over the top, to prevent the milk from scorching.. Bake only long enough to brown it nicely. A good breakfast dish, or a side dish for dinner.

Goon Substitute for Chicken Pie.—Take corned heef; cook it tender; when cold slice thin; have a crust as for chicken pie; put in a layer of meat and one of light hread, and so on until your dish is full; then sprinkle a little salt and pepper, and piece of hutter the size of an egg; fill np your dish with boiling water; put on your top crust, and bake moderately one hour.

Practical Receipts.

To Make Jellies of Various Kinds.

Jellies of Strawberries and Blackberries.—Bruise the fruit, put in a thin cloth, and allow to strain over night. Next morning add half a pound of sugar to each pint of juice, boil twenty minutes.

Grape Jelly.—Bruise and boil the fruit, then strain; add half a pound of sugar to each pint of juice, then boil from ten to twenty minutes.

Fig Jelly.—Wash and add water snfficient to cover the fruit, hoil twenty minutes, strain, then add sugar and boil as above.

Wild Crab Apple.—Cover the fruit with water, and boiled until soft, then strain; add one pound of sugar to each pint of juice, boil from fifteen to twenty minutes.

Siberian Crab Apple.—Proceed as for preceding, bnt add only one-half pound of sugar to each pint.

Plum.—Mash, boil, strain, as above.

Peach Jelly.—Wash, without removing skins or pits; cover with water, hoil until soft, strain, add half a pound of sugar to a pint of juice; boil twenty minutes.

Rhubarb Punning.—Line your pudding-dish with slices of hread and hntter, cover with cutnp rhubarh, stewed with sugar, then slices of hread and butter, and so on alternately until your dish is full, having the rhubarb and sugar on top. Pour in half a teacup of water, cover with a plate, and bake half an hour. Eat it warm, not hot.

The Predicted Comet.

The announcement some monthe since, that a Swiss astronomer had discovered a comet which was approaching the earth at a rate and in a direction which would lead to an actual collision on the 12th of August, just passed, created no little consternation in some parte of Europe, if not in this country. So mnch were the minds of the ignorant alarmed at the prediction that for prudent reasons and to prevent a panic, it was thought necessary to contradict the fact of such a prediction, and even, in some quarters to deny the very existence of the astronomer—Plantamour.

The time set for the collision having passed, however, the facts are again bronght to light with the additional particulars that the same discovery wae made independently and almost eimultaneonsly by the Russian Professor, Bockh, of St. Petersburg, and that the Swiss astronomer went to St. Petersburg to join Bockh in his observations. Their mutual observations were fully confirmatory to their separate observations, which agreed upon the day and differed only a few hours as to the precise time of the collision.

The time, however, has now passed, and an abundance of "lee-way" been allowed for auy possihle error of motion or speed, and yet the world moves on as it ever has done, and will ever continue to do until it encounters something more substantial than the great majority of the cometary hodies with which astronomers have made themselves acquainted.

The fact is, as well remarked hy the *Bulletin*, a comet ie not a solid mass, hnt a cloudy or vaporous one, infinitely diffused and rarefied. Seen in the fine ether which coustitutes interplanetar space, they appear like formidahle bodies to the unintelligent eye, although their substance is less deuse than our atmosphere, its atoms being widely separated, and having an independent motion. In short, comets are allied to nehulæ, whose diffuse substance is very loosely hung together. They are erratic worlds in embryo, waiting to be condensed. Illuminated hy the sun, as they near it, the nucleus, or preceeding part, seems dense enough to be mischievous, while the tail, or following part, stretches out like a wide wake of luuar light. These attennated cosmical clouds might envelop the earth without any worse effect than some disturbance of its atmosphere.

Schellen, in his late work on Spectrum Analysis, assuming the practical identity of cometary and nebulous masses, says that the nehulæ, coming within the attraction of our solar system, would at its nearest approach to the sun, and in the neighboring portions of its orbit, appear as a comet, and when it grazed the earth's atmosphere would be seen as a shower of meteors, resulting from condensation on contact with the denser hody of our atmosphere, which phenomenon is designated by the expression, "the conversion of the motion of the mase into molecular action or heat." Schiaparelli says that as the cosmical clouds which produce the meteors approach the sun, they increase in density some millions of times, and he calculates that the distance between any two meteors, only a few grains in weight, before the cloud begins to he condensed, may be upward of 40,000 miles. No wonder, therefore, that the attenuated mass of these bodies extends from five millions to ten thousand millions of miles.

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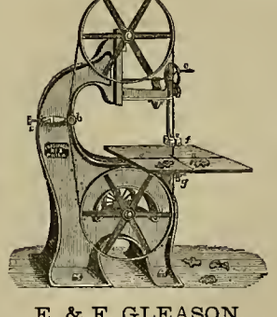
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New Incorporations.

NEW GOLCONDA DIAMOND M. Co.—Aug. 15. Location: New Mexico and Arizona. Capital stock, $5,000,000, in 50,000 shares. Truetees—George W. Smiley, H. H. Flagg, Seth Cook, James Wilson, J. C. Bauer, C. A. Mathieu and General George P. Ihrie.

GEORGETOWN GOLD M. Co.—Aug. 15. Location: El Dorado county, California. Capital stock, $1,000,000, in 10,000 shares. Trustees—John Middleton, Charles R. Peters, S. W. Lee, W. J. Kip, Jr., and R. B. Noyes.

SIERRA S. M. Co.—Aug. 15. Location: Humboldt county, Nevada. Capital stock, $1,000,000. Trustee—J. C. Fall, S. D. H. Stewart, P. H. Kramer, J. M. Galway and H. H. Coye.

MOUNTAIN VIEW CON. S. M. Co.—Aug. 15. Location: Eureka district, Nevada. Capital stock, $2,200,000. Trustees—M. McDonald, J. Lincoln, S. A. Pritchard, J. Case and J. A. Albertson.

STORER M. Co.—Aug. 16. Location: California, Nevada and Utah. Capital stock, $3,000,000, in 30,000 shares. Trustees—Samuel Storer, James Winter, H. H, Pearson, Charles W. Carter and M. G. Gilletts.

CATLIN DIAMOND AND MINERAL Co.—Aug. 17. Location: Arizona and New Mexico. Capital stock, $1,000,000, in 50,000 shares. Trusteee—A. S. Hallidie, Geo. W. Bowie and J. S. Silver.

NAGLER AND ST. LAWRENCE M. Co.—Aug. 19. Location: El Dorado county. Capital stock, $8,000,000, in 40,000 shares. Trustees—Chas. Nagler, Jacob Nagler, James S. Houseman, Selyas Solomons and Samson Rosenblatt.

YAVAPAI M. AND M. Co.—Aug. 20. Location: Arizona Territory. Capital stock, $4,000,000, in 40,000 eharee. Trustees—D. D. Colton, Wm. S. Campbell, Harvey S. Brown, Hiram Tubbs and Charles Webb Howard.

Certificate of the increase of capital stock of Pennsylvania Mining and Milling Company, from $1,000,000 and 10,000 shares, to $2,000,000 divided into 20,000 shares, wae filed on the 16th inst.

The following have filed certificates of incorporation in the Secretary of State office Sacramento:

REGENT CON. S. M. Co.—Aug. 9. Capital, $3,000,000.

GREAT WESTERN QUICKSILVER M. Co.—Aug. 9. Location: Lake county. Capital, $5,000,000.

KEYSTONE AND BOSTON M. Co.—Aug. 12. Location: Castle Peak district, Mono county. Capital stock, $3,000,000.

BELLE M. AND M. Co.—Aug. 12. Location: Placer county. Capital stock, $200,000. Trustees—E. K. Phipps, John Tingman and W. R. Watere.

CARSON CON. M. Co.—Aug. 15. Location: Nevada. Capital, $10,000,000.

Meetings and Elections.

The following officers of incorporated companies have been elected:

OCCIDENTAL M. Co.—Trustees: W. E. Barron, (Preeident;) Alvinza Hayward, J. C. Flood, Wm. Kohl and John F. Miller; Secretary, C. E. Elliot.

NEW GOLCONDA DIAMOND M. Co.—Ang. 16th: Geo. W. Smiley, President; H. H. Flagg, Vice-Presideut; Jamee Wilson, Secretary; Monroe Thompson, Superintendent.

CALIFORNIA CONS. M. AND M. Co.—Aug. 16, Trustees: W. H. Raymond (President), Henry Raymond (Treasurer), E. N. Torrey James Mee and F. G. Berry. Secretary, A. F. Benjamin; Superintendent, T. Burke.

GREAT BLUE GRAVEL RANGE M. Co.—Aug. 16: Trustees: Wm. Higby, (President), Chas A. Hunt, Winslow Hall, M. D. Plummer, (Vice-President) and J. T. Babcock (Treasurer); Secretary, W. H. Watson.

PICTOU M. Co.—Trustees: A. P. Forbes, E. Skerret, and H. H. Flagg.

NAGLER AND ST. LAWRENCE CONS. M. Co.—Aug. 20: Sexias Solomon, President; Chas. Nagler, (Vice-President); Jas, H. Houseman, Treasurer; A. Noel, Secretary; and Joseph Nagler, Superintendent.

SOUTH COMSTOCK G. & S. M. Co.—Aug. 20: Trustees: R. F. Sherwood (President), A. K. P. Harmon and J. A. Pritchard; Secretary, J. M. Buffington; Superintendent, John Nelson.

PACIFIC WIRE AND WIRE ROPE MANUFACTURING Co.—Trustees: J. B. Stetson (President); Robt. Watt, A. S. Hallidie (agent), E. Rohte, Thos. Nelson, Joshua Gray and A. Fuhrmad; Secretary, John P. Behring.

ALABAMA AND HUMBOLDT CONS. M. Co.—Trustees: Chas. Joues (President), C. B. Land, John Gillig, A. Fleichbacker and Wm. H. Watson Secretary and Treasurer.

ALTA M. Co.—Trustees: Chae Jones (President), C. B. Land, W. F. Meyers, C. E. Elliott, Wm. H. Watson (Secretary), and R. N. Van Brunt, Treasurer.

HOME TICKET M. Co.—Trustees: S. S. Tilton, G. L. Bradley, James Laidley, James S. Kennedy and C. W. Fox; Chas. F. Balcom, Secretary.

LOUISVILLE CONS. M. Co.—Trustees: Grove Adame (President), C. J. Lansing, C. H. Wakelee, T. R. Hopkins and F. A. Gibbs; Secretary, Jos. L. King; Superintendent, H. G. Bixby.

WARD BEECHER CONS. M. Co.—Trustees: W. B. Bourne, H. G. Blaisdell, J. W. Gashwiler, J. E. de la Montanya, Robt. Sherwood, C. B. Land and J. H. Crocker.

SETTING SUN AND VICTOR M. Co.—Trustees: E. J. Baldwin, Robt. Sherwood, J. W. Gashwiler, Joseph Clark and M. J. McDonald.

CALEDONIA M. Co.—Truetees, A. K. P. Harmon, (President), Robt. Sherwood, B. Peart, Martin White and W Deane.

Oakland Farming, Horticultural and Industrial Club.

At the semi-monthly meeting, Friday evening, Aug. 23d, the subject of preserving fruit will be discueeed. The President, Prof. E. S. Carr, promises to speak of the general principles governing the preservation of vegetable food. Experiments will be made by the inventor, showing a new mode of preserving fruits in their natural condition by partially exhansting the atmosphere from the vessels in which they are contained.

FOREIGN APPRECIATION OF CALIFORNIA SCIENTISTS.—An observing Californian, who is traveling in Europe, says that all of our scientific meu are well known and appreciated iu London. Copies of the Worke of the Geological Survey of California and proceedings of the California Academy of Sciences are found in the libraries of the learned societiee there, and are far better known and appreciated than they are in our own city. The progress of the State Geological Survey is looked to with much interest in the ecientific world.

SAN DIEGO MINES.—The yield of 100 tons of ore, recently crushed from the Golden Chariot Mine, Banner District, a few miles from Julian City, wae $23,091.20. A ten-stamp mill is to be placed on the mine.

UTAH.—Mining news from Utah for the past week has been unusually encouraging. In one section nearly a quarter of a million dollars was paid for mining property.

STRIKE.—A rich strike is reported in the Bismarck mine, seven miles from Oreana, Nevada. The rock assays $300 per ton in silver and about sixty per cent. lead.

DR. PAYNE'S SCIENTIFIC LECTURES on man and his relatione, are taking well in San Francisco. He speaks for the tenth time at Platt's Hall, Monday evening, Aug. 26th.

THE HASSLER EXPEDITION.—The steamer *Hassler*, with Prof. Agassiz and party on board, is now at San Diego. She will probably leave for San Francisco on the 24th.

FARM MACHINERY.—By the use of machinery invented within the past twenty years, the farmer's boy can often do the work which formerly required the labor of ten men,

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THE DIAMOND FIELDS!

The New Golconda

DIAMOND MINING COMPANY

Has been incorporated with 50,000 shares of $100 each, to send a party of eight or ten picked men, under an able and reliable Superintendent well known in mining circles,

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RICH GOLD AND SILVER MINES,

Also, in the adjacent mining regions of Arizona and New Mexico, some of which will be secured for this Company, without delay, whether valuable diamond mines can be obtained or not.

Twenty thousand shares of stock are set aside for a working capital, of which A LIMITED NUMBER ONLY will be offered for sale at present, at the very low rate of $2 per share, in order to insure a quick sale and a speedy departure of the party.

In order to insure the fidelity of those who form the prospecting party, each member is to receive 1,000 shares of the stock of the Company, and good wages at the end of six months' faithful service, besides their outfit and expenses from the start. An assayer and a physician, who are themselves experienced prospectors, are included in the party.

Articles of Agreement,

Protecting the rights of Stockholders from the acts of dishonest Directors, are embraced in the Certificate of Incorporation and cannot he evaded.

NO ASSESSMENT CAN BE LEVIED

Until the working capital is exhausted, and no stock can he issued (except to raise the fund to send the party to the fields) UNTIL CLAIMS ARE SECURED for the Company, and active operations commenced to develop them.

THIS COMPANY MEANS BUSINESS,

And will not lose a moment's time in getting its party on the ground.

The following well known citizens compose the Board of Directors:

GEORGE W. SMILEY, GEN. GEO. P. IHRIE,
H. H. FLAGG, SETH COOK,
J. C. BOWER, C. A. MATHIEU,
JAMES WILSON.

Subscriptions Received for Stock,

AT $2 PER SHARE,

At the office of the Company, under Donohoe, Kelly & Co.'s Bank, southeast corner of Sacramento & Montgomery streets.

JAMES WILSON, Secretary.

San Francisco, August 16, 1872. 8v25tf

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Z.E. is a Medical Dictionary. It contains a description of diseases, remedies instruments, surgical operations, etc., etc.

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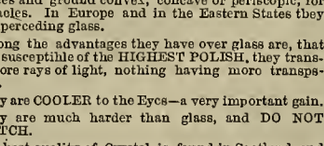

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Mining and Other Companies.

Owing to the time necessary to mail the present large edition of the M. & S. Press, we are obliged to go to press on Thursday evening—which is the very latest hour we can receive advertisements.

Beckwith Mining Company, Ely Mining

District, Lincoln County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees, of said Company, held on the 19th day of August, 1872, an assessment of Twenty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the Office of the Company, Room 5, No. 502 Montgomery street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Saturday, the 28th day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the 23d day of October, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery St., San Francisco.

Cottonwood Creek Gold Mining Company.

—Location of Works, Shasta and Tehama Counties, State of California.

Notice is hereby given, that at a meeting of the Trustees of said Company, held on the 19th day of August, A. D. 1872, an assessment of seven cents per share was levied upon the capital stock of said Company payable immediately, in United States Gold Coin, to the Secretary, at the office of the Company, No. 411 California street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Tuesday, the 24th day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the 15th day of October, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of the sale.

JOS. L. KING, Secretary.

Office, No. 411 California street, San Francisco, Cal.

Louise Mining Company—Location of

works, Ely Mining District, Pioche, Lincoln County, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the third (3d) day of July, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Adams, Q L	152	10	$1 00
Adams, Q L	153	10	1 00
Burke, John	213	50	5 00
Burke, John	216	50	5 00
Burke, John	217	100	10 00
Burke, John	218	100	10 00
Burke, John	223	200	20 00
Coburn, S A	86	100	10 00
Coburn, S A	89	100	10 00
Coburn, S A	90	100	10 00
Chase, A K, Trustee	110	25	2 50
Chase, A K, Trustee	111	50	5 00
Chase, A K, Trustee	113	50	5 00
Chase, A K, Trustee	154	10	1 00
Chase, A K, Trustee	155	10	1 00
Englander, L	298	50	5 00
Fischer, A	250	100	10 00
Fischer, A	260	100	10 00
Fischer, A	261	100	10 00
Fischer, A	262	100	10 00
Fischer, A	263	100	10 00
Gelcich, V	158	50	5 00
Gelcich, V	159	50	5 00
Golding, J	148	10	1 00
Golding, J	149	10	1 00
Golding, J	150	10	1 00
Golding, J	151	10	1 00
Grattan, O M	227	50	5 00
Grattan, O M	231	200	20 00
Ingerson, A W	245	50	5 00
Ingerson, A W	247	100	10 00
Raymond, S A	126	100	10 00
Raymond, S A	130	100	10 00
Winter, T P, Trustee	171	10	1 00
Wakelee, C H, Trustee	290	100	10 00
Wakelee, C H, Trustee	291	200	20 00
Watson, Geo P J, Trustee	294	50	500 00
Wilson, Wm M	306	100	10 00
Wilson, Wm M	311	66	6 60

And in accordance with law, and an order of the Board of Trustees, made on the 3d day of July, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, Room 5, No. 302 Montgomery street, San Francisco, Cal., on Saturday, the 7th day of September, 1872, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

WM. H. WATSON, Secretary.

Office, room 5, No. 302 Montgomery street, San Francisco. jul6.

Marcelina Silver Mining Company—Location of

works, Eureka Mining District, Lander County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 24th day of July, 1872, an assessment of Thirty (30) Cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, 419 California street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 9th day of September, 1872, shall he deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 30th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees. CHAS. E. ELLIOT, Secretary.

Office, 419 California street, San Francisco, Cal.

Mina Rica Mining Company—Location of

works, Auhurn Mining District, Placer county, State of Nevada.

Notice is hereby given that at a meeting of the Trustees of said Company, held on the 6th day of August, 1872, an assessment (No. 7) of Twenty (20) cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, 320 California street, Room 5, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 10th day of September, 1872, shall he deemed delinquent, and will he duly advertieed for eale at public auction, and unless payment shall he made before, will he sold on the 30th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trnstees. GEO. R. SPINNEY Secretary.

Office, No. 320 California street, Room No. 5, San Francieco, Cal. Aug.6-4t

Mount Jefferson Milling and Mining Company.

—Location of works, First Garotte, Tuolumne county, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 26th day of July, A. D., 1872, an assessment of Ten Cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary, at the office of said Company. Any stock upon which said assessment shall remain unpaid on Monday, the 26th day of August, A. D., 1872, shall he deemed delinquent, and will he duly advertised for sale, at public auction, and unless payment shall he made before, will be sold on Monday, the 16th day of September, A. D., 1872, at the hour of 2 o'clock, P. M., at the office of the Company, to pay the delinquent assessment together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. W. CLARK, Secretary.

Office, 418 California street, Room No. 2. aug3-4w

Morning Star Gold and Silver Mining

Company—Location of works, Great Mogul District, Alpine County, State of California.

NOTICE.—There are delinquent upon the following described stock, on account of Assessment levied on the 12th day of July, 1872, the several amounts set opposite the names of the respective Shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Abbott, J E	863	1	$1 00
Blum, Charles	231	3	3 00
Cassidy, E	241	5	5 00
Culver, Mary E	621	40	40 00
Coates, W H	941	22	22 00
Dandel, C	247	5	5 00
Dandel, C	2-4	5	5 00
Dandel, C	3-2	5	5 00
Dennett, Mrs M A	365	4	4 00
De Sheman, J	919	5	5 00
Duncan, G W	717	5	5 00
Ensign, G H	965	1	1 00
Eagin, P B	967	1	1 00
Gilman, L	72	10	10 00
Gilman, L	269	10	10 00
Gilman, L	570	10	10 00
Gilman, L	571	5	5 00
Gilman, L	493	5	5 00
Gressam, Wm	611	5	5 00
Gidsby, E H	569	1	1 00
Goff, C P	915	5	5 00
Harvey, Alameda	939	20	20 00
Hyndman, Wm	505	20	20 00
Hill, Mary	529	5	5 00
Kilgour, C H	434	3	3 00
Kelly, William	657	15	15 00
Litton, Thomas	620	10	10 00
Mansell, Frederick	566	10	10 00
Marston, J C	919	2	2 00
O'Donnell, James	681	5	5 00
Palmer, Margaret	728	15	15 00
Reed, Miss J M	946	5	5 00
Scott, L	971	1	1 00
Swartz, Mrs A	651	10	10 00
Tabor, Isaac	973	1	1 00
Vance, James	975	1	1 00
Wegeim, George	749	10	10 00
Webster, G G	977	1	1 00
Webster, G G	979	1	1 00
Wally, David	435	5	5 00
Wally, David	735	10	10 00
Wally, David	759	15	15 00
Wally, Mrs H J	562	5	5 00
Wanken, Herman	647	5	5 00
Wanken, Herman	691	5	5 00
Wanken, Herman	718	1	1 00
Wanken, Herman	748	5	5 00
Young, Almira	496	10	10 00
Young, Almira	678	10	10 00

And in accordance with law, and an order of the Board of Trustees, made on the 12th day of July, 1872, so many shares of each parcel of said Stock as may be necessary, will be sold at public auction, at the office of the Company, Room No. 43, New Merchants' Exchange, California street, San Francisco, on the 14th day of September, 1872, at the hour of 1 o'clock P. M., of said day, to pay said delinquent Assessment thereon, together with costs of Advertising and expenses of sale.

O. H. BOGART, Secretary.

Office—Room 43, Merchants' Exchange, (3rd floor) California street, San Francisco, Cal. au24

Norman Gold Mining Company---Location

of works, Aquednet Mining District, Amador County, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 27th day of June, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Eldridge, G C	17	100	$5 00
Eldridge, G C	18	100	5 00
Hosmer, D M, Trustee	43	300	15 00
Hosmer, D M, Trustee	44	500	25 00
Hallet, G H	19	100	5 00
Humphreys, W P	26	100	5 00
Humphreys, W P	27	100	5 00
Hynemann, S	55	100	5 00
Levingston, J	7	100	5 00
Owens, Thurston C, Trus.	155	500	25 00
Owens, Thurston C, Trus.	156	500	25 00
Plummer, M D, Trustee	2	500	25 00
Plummer, M D, Trustee	34	300	15 00
Plummer, M D, Trustee	33	80	4 00
Plummer, M D, Trustee	153	100	5 00
Sheppard, J	54	100	5 00
Stewart, W	68	200	10 00
Sewall, G, Trustee	131	100	5 00
Sewall, G, Trustee	132	400	20 00
Thompsom, J M, Trustee	14	500	25 00
Thompson, J M, Trustee	49	500	25 00
Thompson, J M, Trustee	50	300	15 00
Thompson, J M, Trustee	107	3000	150 00
Thompson, J M, Trustee	109	200	10 00
Thompson, J M, Trustee	111	75	3 75
Tcewilliger, N B	16	100	5 00
Wayman, W G	21	500	25 00
Wayman, W G	22	300	15 00
Wayman, W G	47	300	15 00
Wade, Rufus	24	100	5 00
Watson, Wm H, Trustee	63	1107	68 35
Watson, Wm H, Trustee	64	1000	50 00
Watson, Wm H, Trustee	67	100	5 00
Watson, Wm H, Trustes	68	100	5 00
Watson, Wm H, Trustee	69	100	5 00
Watson, Wm H, Trustee	70	100	5 00
Watson, Wm H, Trustee	71	100	5 00
Watson, Wm H, Trustee	72	100	5 00
Watson, Wm H, Trustee	73	100	5 00
Watson, Wm H, Trustee	74	100	5 00
Watson, Wm H, Trustee	75	100	5 00
Watson, Wm H, Trustee	76	100	5 00
Watson, Wm H, Trustee	77	50	2 50
Watson, Wm H, Trustee	78	50	2 50
Watson, Wm H, Trustes	79	50	2 50
Watson, Wm H, Trustee	80	50	2 50
Watson, Wm H, Trustee	81	50	2 50
Watson, Wm H, Trustee	82	50	2 50
Watson, Wm H, Trustee	83	50	2 50
Watson, Wm H, Trustee	84	50	2 50
Watson, Wm H, Trustee	85	50	2 50
Watson, Wm H, Trustee	87	20	1 00
Watson, Wm H, Trustee	88	20	1 00
Watson, Wm H, Trustee	89	20	1 00
Watson, Wm H, Trustee	90	20	1 00
Watson, Wm H, Trustee	91	20	1 00
Watson, Wm H, Trustee	92	20	1 00
Watson, Wm H, Trustee	93	20	1 00
Watson, Wm H, Trustee	96	20	1 00
Watson, Wm H, Trustee	97	30	1 50
Watson, Wm H, Trustee	98	30	1 50
Watson, Wm H, Trustee	99	30	1 50
Watson, Wm H, Trustee	100	30	1 50
Watson, Wm H, Trustee	101	30	1 50
Watson, Wm H, Trustee	102	30	1 50
Watson, Wm H, Trustee	103	30	1 50
Watson, Wm H, Trustee	104	30	1 50
Watson, Wm H, Trustee	105	30	1 50
Watson, Wm H, Trustee	106	30	1 50
Watson, Wm H, Trustee	108	666	33 30
Watson, Wm H, Trustes	130	100	5 00
Wurkhelm M	110	25	1 25

And in accordance with law, and an order of the Board of Trustees, made on the 27th day of June, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, Room 5, No. 302 Montgomery street, San Francisco, Cal., on Thursday, the 22d day of August, 1872, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

WM. H. WATSON, Secretary.

Office—Room 5, No. 302 Montgomery street, San Francisco. au3-3t

POSTPONEMENT.—The above sale is postponed until Tuesday, the Seventeenth (17th) day of September, 1872, and will be held at the same hour and place. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

San Francisco, August 22, 1872.

Nevada Land and Mining Company—Location

of works, Spruce Mountain, Chilton, and Antelope Mining Districts, Elko County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 15th day of July, 1872, an assessment of Eight Cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office. Any stock upon which said assessment shall remain unpaid on Saturday, the 31st day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the 19th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery street, San Francisco, California. jul20-4t

Piermont Milling and Mining Company—

Location of works, Piermont Mining District, White Pine County, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the Tenth (10th) day of July, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Briggs, Charles A	15	583⅓	$350 00
Briggs, Charles A	47	101	66 60
McClure, R A	25	583⅓	350 00
McClure, R A	48	111	66 60
Perkins, J E, Trustee	21	1000	600 00
Perkins, J E, Trustee	23	1000	600 00
Perkins, J E, Trustee	41	381	228 60

And in accordance with law, and an order of the Board of Trustees, made on the 10th day of July, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of said company, on Tuesday, the 10th day of September, 1872, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

au17-4t J. W. CLARK, Secretary.

Office, Room No. 2, 418 California street, San Francisco, Cal.

The Piedmont Land Company—Location

of property, Alameda County, State of California.

Notice is hereby given, that at a meeting of the Directors of said Company, held on the twentieth day of August, 1872, an assessment of Two Dollars, gold coin, per share, was levied upon the capital stock of said Company, payable immediately to the Secretary of said Company, at his office, No. 222 California street, San Francisco, California. Any stock upon which said assessment shall remain unpaid, on the twenty-first day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on the second day of October, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale.

FRANK JAYNES, Secretary.

Office, No. 222 California street.

San Francisco, Cal., August 20th, 1872.

Spring Mountain Tunnel Company—Location

of works, Lincoln County, Nevada.

NOTICE.—There are delinquent upon the following described Stock, on account of assessment, No. 3, levied on the 9th day of July, 1872, the several amounts set opposite the names of the respective Shareholders as follows:

Names.	No. Certificate.	No Shares.	Amount.
J M Buffington, balance	6	955	286 50
David Leahy	132	1233	369.90
S M Keeler	23	666	199.80
F A Munroe	29	50	15.00
F A Munroe	31	25	7.50
F A Munroe	33	25	7.50
Ann O'Neill	93	1333	399.90
W I Jeffards	96	20	6 00
Geo E Rogers, Trustee	120	1333	399.90
J T Pomeroy, Trustee	151	100	30.00
J T Pomeroy, Trustee	152	300	90.00
J M Buffington, Trustee	91	360	108.00
Ford H Rogers	124	1333	399.90

And in accordance with law and an order of the Board of Trustees, made on the 9th day of July, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction on the 9th day of September, 1872, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. M. BUFFINGTON, Secretary.

Office, room 37, Merchants' Exchange, California St., San Francisco, Cal.

Victoria and Imperial Tunnel and Mining

Company—Location of works, Little Cottonwood Mining District, Utah Territory.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 14th day of August, 1872, an assessment of Ten Cents (10c) per share was levied upon the capital stock of said Company, payable immediately in United States gold coin to the Secretary, at the office of the Company, Room 5, No. 302 Montgomery street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Wednesday, the 18th day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 12th day of October, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery street. aul4-4t

William Penn Consolidated Gold and Silver Mining Company—Location of works, Devil's Gate District, Storey County, State of Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment (No. 2) levied on the third day of July, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Thomas Finn	Unissued.	630	$63 00
D Murphy	Unissued.	40	4 00
H Toomy	Unissued.	1700	170 00
Thos McNamara	Unissued.	500	50 00
H F Cutter	Unissued.	1060	106 00
B M Hartshorne	Unissued.	600	60 00
John Hewston, Jr.	Unissued.	250	25 00
Chas Minturn	Unissued.	500	50 00

And in accordance with law, and an order of the Board of Trustees, made on the third day of July, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, No. 6 Montgomery street, San Francisco, California, on Monday, the 2d day of September, at the hour of 12 M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

JNO. F. POPE, Secretary.

Office, No. 6 Montgomery street, San Francisco, California. aug10-4t.

Winnemucca Chief Silver Mining Company—Location of Works, Humboldt County, State of Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 19th day of June, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
John Robins	159	100	$15 00
John Robins	160	100	15 00
John Robins	161	100	15 00
John Robins	162	100	15 00
John Robins	163	100	15 00
John Robins	164	100	15 00
John Robins	165	100	15 00
John Robins	166	100	15 00
John Robins	167	100	15 00
John Robins	168	100	15 00
John Robins	176	100	15 00
John Robins	177	100	15 00
John Robina	178	100	15 00
John Robins	179	50	7 50
John Robins	209	500	75 00
John Robins, Trustee	3	500	75 00
John Robins, Trustee	19	500	75 00
John Robins, Trustee	20	500	75 00
John Robins, Trustee	21	100	15 00
John Robins, Trustee	22	100	15 00
John Robins, Trustee	23	100	15 00
John Robins, Trustee	24	100	15 00
John Robins, Trustee	25	50	7 50
John Robins, Trustee	26	50	7 50
John Robins, Trustee	27	50	7 50
T F Cronise, Trustee	111	500	75 00
T F Cronise, Trustee	112	500	75 00
T F Cronise, Trustee	113	200	30 00
T F Cronise, Trustee	114	200	30 00
T F Cronise, Trustee	115	200	30 00
T F Cronise, Trustee	116	200	30 00
T F Cronise, Trustee	117	200	30 00
T F Cronise, Trustee	118	100	15 00
T F Cronise, Trustee	119	100	15 00
T F Cronise, Trustee	120	100	15 00
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T F Cronise, Trustee	135	100	15 00
T F Cronise, Trustee	136	100	15 00
T F Cronise, Trustee	137	100	15 00
T F Cronise, Trustee	138	50	7 50
T F Cronise, Trustee	139	50	7 50
T F Cronise, Trustee	140	50	7 50
T F Cronise, Trustee	141	50	7 50
T F Cronise, Trustee	142	50	7 50
T F Cronise, Trustee	143	50	7 50
T F Cronise, Trustee	144	50	7 50
T F Cronise, Trustee	145	50	7 50
T F Cronise, Trustee	146	50	7 50
T F Cronise, Trustee	147	50	7 50
T F Cronise, Trustee	148	50	7 50
T F Cronise, Trustee	149	50	7 50
T F Cronise, Trustee	150	50	7 50
T F Cronise, Trustee	151	50	7 50
T F Cronise, Trustee	152	50	7 50
T F Cronise, Trustee	153	50	7 50
T F Cronise, Trustes,	154	50	7 50
T F Cronise, Trustee	155	50	7 50
T F Cronise, Trustee	156	50	7 50
T F Cronise, Trustee	157	50	7 50
T F Cronise, Trustee	172	100	15 00
T F Cronise, Trustee	173	100	15 00
A C Peachy	52	3000	450 00
A C Peachy	53	1000	150 00
J H Crossman	74	200	30 00
J D Minor	11	100	15 00
M S Thompson	12	100	15 00
J J Lynn	13	100	15 00
C W Carter	14	100	15 00
M S Bonnifield	16	50	7 50
M S Bounifield	17	50	7 50
T J Poulterer, Trustee	28	500	75 00
T J Poulterer, Trustee	29	500	75 00
T J Poulterer, Trustee	30	500	75 00
T J Poulterer, Trustee	32	500	75 00
T J Poulterer, Trustee	33	500	75 00
T J Poulterer, Trustee	34	500	75 00
T J Poulterer, Trustee	35	500	75 00
T J Poulterer, Trustee	36	500	75 00
T J Poulterer, Trustee	37	500	75 00
T J Poulterer, Trustee	38	500	75 00
T J Poulterer, Trustee	39	500	75 00
T J Poulterer, Trustee	40	500	75 00
T J Poulterer, Trustee	41	500	75 00
T J Poulterer, Trustee	42	500	75 00
T J Poulterer, Trustes	43	500	75 00
T J Poulterer, Trustee	44	500	75 00
T J Poulterer, Trustee	46	500	75 00
T J Poulterer, Trustee	47	500	75 00
T J Poulterer, Trustee	48	500	75 00
T J Poulterer, Trustee	49	500	75 00
T J Poulterer, Trustee	50	500	75 00
T J Poulterer, Trustee	51	500	75 00
T J Poulterer, Trustee	75	500	75 00
T J Poulterer, Trustee	76	200	30 00
T J Poulterer, Trustee	77	200	30 00
T J Poulterer, Trustee	78	100	15 00
T J Poulterer, Trustee	79	100	15 00
T J Poulterer, Trustee	80	100	15 00
T J Poulterer, Trustee	81	100	15 00
T J Poulterer, Trustee	82	100	15 00
T J Poulterer, Trustee	83	100	15 00
T J Poulterer, Trustes	84	50	7 50
T J Poulterer, Trustee	86	50	7 50
T J Poulterer, Trustee	87	50	7 50
T J Poulterer, Trustee	88	50	7 50
T J Poulterer, Trustee	89	50	7 50
T J Poulterer, Trustee	91	50	7 50
T J Poulterer, Trustee	93	35	5 25
T J Poulterer, Trustes	95	25	3 75
T J Poulterer, Trustee	96	25	3 75
T J Poulterer, Trustes	109	25	3 75
T J Poulterer, Trustee	110	25	3 75
T J Poulterer, Trustee	169	100	15 00
T J Poulterer, Trustee	170	100	15 00
T J Poulterer, Trustee	171	100	15 00
J Clem Uhler, Trustee	54	500	75 00
J Clem Uhler, Trustee	56	500	75 00
J Clem Uhler, Trustee	57	500	75 00
J Clem Uhler, Trustee	58	500	75 00
J Clem Uhler, Trustee	59	200	30 00
J Clem Uhler, Trustee	60	100	15 00
J Clem Uhler, Trustee	61	100	15 00
J Clem Uhler, Trustee	62	100	15 00
J Clem Uhler, Trustee	63	100	15 00
J Clem Uhler, Trustee	64	100	15 00
J Clem Uhler, Trustee	65	100	15 00
J Clem Uhler, Trustee	66	100	15 00
J Clem Uhler, Trustee	67	100	15 00
J Clem Uhler, Trustee	68	50	7 50
J Clem Uhler, Trustee	69	50	7 50
J Clem Uhler, Trustee	70	50	7 50
J Clem Uhler, Trustes	71	50	7 50
J Clem Uhler, Trustee	72	50	7 50
J Clem Uhler, Trustee	73	50	7 50
J Clem Uhler, Trustee	180	500	75 00
J Clem Uhler, Trustee	181	500	75 00
J Clem Uhler, Trustee	182	500	75 00
J Clem Uhler, Trustee	183	500	75 00
J Clem Uhler, Trustee	184	100	15 00
J Clem Uhler, Trustee	185	100	15 00
J Clem Uhler, Trustee	186	100	15 00
J Clem Uhler, Trustee	187	100	15 00
J Clem Uhler, Trustee	188	100	15 00
J Clem Uhler, Trustee	189	100	15 00
J Clem Uhler, Trustee	190	100	15 00
J Clem Uhler, Trustee	191	100	15 00
J Clem Uhler, Trustee	192	100	15 00
J Clem Uhler, Trustee	193	100	15 00
J Clem Uhler, Trustee	194	100	15 00
J Clem Uhler, Trustee	195	100	15 00
J Clem Uhler, Trustee	196	100	15 00
J Clem Uhler, Trustee	197	100	15 00
J Clem Uhler, Trustee	198	100	15 00
J Clem Uhler, Trustee	199	50	7 50
J Clem Uhler, Trustee	200	50	7 50
J Clem Uhler, Trustee	201	50	7 50
J Clem Uhler, Trustee	202	50	7 50
J Clem Uhler, Trustee	203	50	7 50
J Clem Uhler, Trustee	204	50	7 50
J Clem Uhler, Trustee	205	50	7 50
J Clem Uhler, Trustee	206	50	7 50
J Clem Uhler, Trustee	207	50	7 50
J Clem Uhler, Trustee	208	50	7 50
L L Robinson	210	500	75 00

And in accordance with law, and an order of the Board of Trustees, made on the 19th day of June, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, No. 409 California street, San Francisco, California, on the 20th day of August, 1872, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale. T. F. CRONISE, Secretary.

Office, 409 California Street, San Francisco, California.

At a meeting of the Board of Trustees held this day, the above sale was postponed to Monday, the 16th day of September, 1872, at the same place and hour.

T. F. CRONISE, Secretary.

San Francisco, Cal., August 10, 1872.

Rubber and Oak-Tanned Leather **Belting**

New Stock, just in; Pawtucket manufacture; standard quality—warranted *the best*. Come and see and get prices, or give it a trial. Sold low by

TREADWELL & CO.,

12v24 Market, cor. Fremont St., San Francisco.

To Engineers and Millmen.

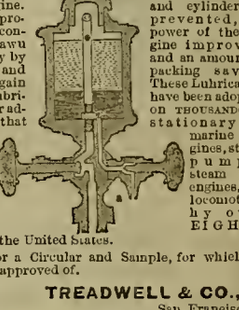
NATHAN & DREYFUS'

PATENT

Self-Acting Lubricators for Cylinders.

Their advantages over other lubricators are so striking, that it is only a question of time for them to come into general use—their accuracy in keeping the valves and pistons thoroughly and constantly lubricated being unequalled. A close examination of this sectional view of Lubricating Cup will give an idea of its working.

The principle of working is based on an intermittent condensation of steam in the UPPER PART of the cup containing the lubricant. At every couple of strokes, the steam condensing, produces a drop of water, which, being heavier than the oil, sinks by its own gravity, and raises a correspouding drop of oil over into a tube, which arises in the center of the cup and conveys said oil directly to the chest and cylinder, this tubs being the only connection from the Lubricator to the internal part of the engine. The water produced by the condensation is drawn off once a day by a side-cock, and the cup filled again with the lubricant. Another advantage is, that the condensing process refines the oil, as the water settling down thro' lubricant



carries down salts and acids which may be contained therein. In this way corrosion of the steam chest and cylinder is prevented, the power of the engine improved, and an amount of packing saved. These Lubricators have been adopted on THOUSANDS of stationary and marine engines, steam pumps, steam fire engines, and locomotives by over EIGHTY RAILROADS in the United States.

☞ Send for a Circular and Sample, for which no charge unless approved of.

Address TREADWELL & CO.,

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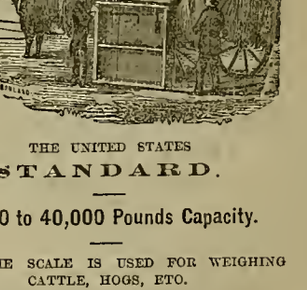
FAIRBANK'S.

WEIGH on Wagons, HAY, ORE, COAL, Etc.



THE UNITED STATES

STANDARD.

6,000 to 40,000 Pounds Capacity.

THE SAME SCALE IS USED FOR WEIGHING CATTLE, HOGS, ETC.

Scales of every kind. Address

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126 California street, San Francisco.

Agents for MILES' ALARM MONEY DRAWERS.

17v3-eowbp6m

The Celebrated Physician of St. Louis,

DR. PAYNE,

Is now at his private Parlors, 37 and 38 Russ House ready to wait on gentlemen.

LECTURES at Mercantile Library Hall again next week. 7v25tf

For Steam Pipes & Boilers **Hair Felting**

SAVES 25 PER CENT. OF FUEL—An item worth looking after. Also, Steam Governors, Tube Scrapers Steam Pumps, Self-Oilers, Cylinder Cups, Belting Lacing, Hose, Fuse, Packing, etc., including all kind Miners', Engineers' and Millmen's Supplies, at the Machinery and Supply Depot of TREADWELL & CO.; old stand, Market street, head of Front, San Francisco.

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Machinists and Foundries.

ESTABLISHED 1851.

PACIFIC IRON WORKS,

First and Fremont streets,

SAN FRANCISCO

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Steam Engines and Boilers,

MARINE AND STATIONARY,

IRON AND BRASS CASTINGS

Mining Machinery of Every Description,

And all other classes of work generally done at first-class establishments, manufactured by us at the lowest prices, and of the best quality.

☞ Particular attention paid to Jobbing Work and Repairs.

N. B.—Sole Agents for sale of HUNTOON'S CELEBRATED PATENT GOVERNOR.

18v20-3m GODDARD & CO.

FULTON
Foundry and Iron Works.

HINCKLEY & CO.,
MANUFACTURERS OF

STEAM ENGINES,

Quartz, Flour and Saw Mills,

Hayes' Improved Steam Pump, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

E. corner of Tehama and Fremont streets, above Howe street, San Francisco. 3-qy

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GEORGE T. PRACY,

MACHINE WORKS,

109 and 111 Mission Street,

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Theee Works bave lately been increased, by additional Tools, and we are now able to turn out any kind of work, equal to and cheaper than any establishment in the State; that is to say:—

STEAM ENGINES,
Flour and Saw Mills,
QUARTZ MACHINERY
Printing Presses,

AND MAOHINERY MADE OF EVERY DESORIPTION.

Improved Safety Store Hoists,

Fitted with Cutting's Patent Cams, unequaled for safety, convenience and cheapnese. Tbis Hoist can be built for about half the price of any other in use. To be seen at HAWLEY & CO.'S.

ALSO, MANUFACTURER AND SOLE AGENT FOR

Pracy's Celebrated Governor.

TURNING LATHES, Etc., constantly on hand.

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UNION IRON WORKS,
Sacramento.

ROOT, NEILSON & CO.,
MANUFACTURERS OF

STEAM ENGINES, BOILERS,

CROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR

Dunbar's Patent Self-Adjusting Steam Piston

PACKING, for new and old Cylinders.

And all kinds of Mining Machinery.

Front Street, between N and O streets,

SACRAMENTO CITY.

PACIFIC
Rolling Mill Company,

SAN FBANCISCO, CAL.

Established for the Manufacture of

RAILROAD AND OTHER IRON
—AND—
Every Variety of Shafting,

Embracing ALL SIZES of

Steamboat Shafts, Cranks, Piston and Connecting Rods, Car and Locomotive Axles and Frames

—ALSO—

HAMMERED IRON

Of every description and size.

☞ Orders addressed to PACIFIC ROLLING MILL COMPANY Post Office, San Francisco, Cal., will receive prompt attention

☞ The highest price paid for Scrap Iron 9v14

San Francisco Boiler Works, 123 and 125 Beale Street, San Francisco.
F. I. CURRY (late Foreman of the Vulcan Iron Works), Proprietor.

High and Low Pressure

BOILERS

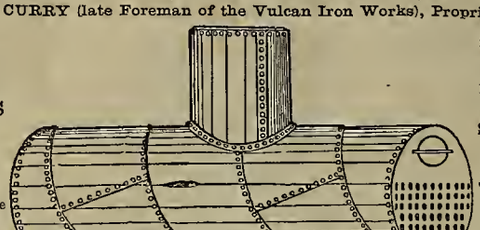
of all descriptions.

SOLE

Manufacturers of the

CELEBRATED

SPIRAL BOILER.



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Sheet Iron Work of every DESCRIPTION done at the Shortest Notice.

All kinds of

JOBBING

and

Repairing

Promptly Attended to.

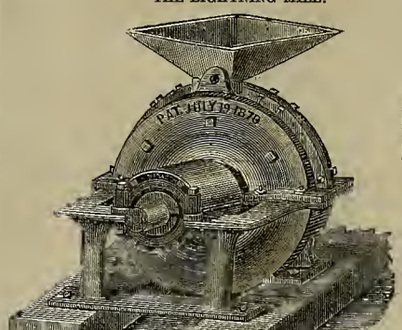
CAMERON'S

MINING STEAM PUMPS.

DAVID STODDART,

114 Beale Street, - - - - - - - - - SAN FRANCISCO.

THE LIGHTNING MILL.



THE

LIGHTNING MILL,

For Pulverizing Quartz, "Charlestou Rock," and all Native Phoephates, Flint, Feldspar, Iron Ore, Manganese, Antimony, Carbon, Corundum, Old Crucibles, Barytes, Brimstone, Slate, Soapstoue, Graphite, Glass, Marble, Plaster, Anthracite and Bituminoue Coale, etc.

WM. STEWART'S

Patent Bone Mills and Crushers.

For Grinding Bones, Rock, Quartz, and all hard substances; aleo, Corn, Wheat, Oats, Barley, Coffee, Spices, etc.

WALKER BROS. & CO., Twenty-tbird and Wood Streets, Philadelphia, Sole Manufacturers of Stewart's Celebrated Patent Bone Mills and Crushers, A. W. Straub & Co.'s Patent Revolution Frencb Burr Mill and A. Duval's Patent Centrifugal Pumps.

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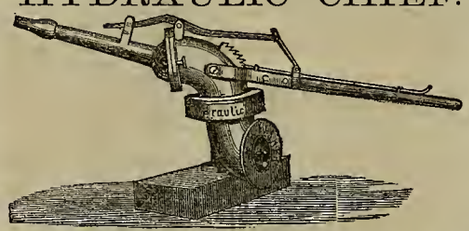
FISHER'S
KNUCKLE
JOINT
AND
NOZZLE

IS THE

Cbeapest and Best Hydraulic Machine in use.

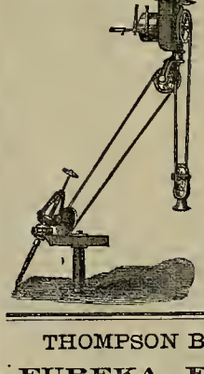


MACHINES Manufactured TO ORDER, to throw from One to an eight-inch STREAM.

The only reliable party in tbe Hydraulic business wbo protecte bis patrons.

9v23-tf Address F. H. FISHER, Nevada, Cal.

HYDRAULIC MINERS, TAKE NOTICE—I hereby caution Miners and Mannfacturers against making, buying, selling or nsing a Hydraulic Machine or Joint known ae the Little Giant, manufactured and sold by R. R. & J. Craig and Richard Hockin, as the eamo is an infringement npon the invention of the machine known ae FISHER'S HYDRAULIC CHIEF, secured by Letters Patent, No. 110,222, dated Dec. 20, 1870. All parties participating n such infringemente will be rigorously prosecuted. Nevada, Jan. 13th. F. H. FISHER.



PORTABLE

DRILLING MACHINES,

THORNE & DE HAVEN,

Twenty-third and Cherry Streets, Philadelphia.

These machines can be placed with as much facility as a ratchet brace, and can be used in any position, at any distance, and in any direction from the power.

The No. 1 is capable of drilling up to 1¼ inches in diameter; the No. 2 up to 1¾ inches; and the No. 3 up to 2¼ inches, and boring up to 4 inches.

Send for Circulars and Photographs.

2v25-3m

THOMPSON BROTHERS,

EUREKA FOUNDRY,

129 and 131 Beale street, between Mission and Howard, San Francisco.

LIGHT AND HEAVY CASTINGS,

of every description, manufactured 24v16qr

Miners' Foundry and Machine Works,

CO-OPERATIVE,

First Street, bet. Howard and Folsom, SAN FRANCISCO,

Machinery and Castings of all kinds.

SAN FRANCISCO

SCREW BOLT WORKS,

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MANUFACTURERS OF ALL KINDS OF

Machine Bolts, Bridge Bolts, and Ship or Band Bolts.

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Improved Stop Governor,

Manufactured at the CYCLOPS MACHINE WORKS, 113 and 115 Beale street, San Francisco.

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GEO. W. PRESCOTT. O. W. SCHEIDEL. W. R. ECKART

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SAW AND GRIST MILLS,

Hydraulic Machinery,

Quartz Crushing and Amalgamating Machinery

Of every description, constantly on band.

Plans and estimates furnished upon application. Repairs upon all kinds of Machinery promptly made, and at moderate chargee.

Having unrivalled facilities, we are prepared to make to order, at short notice, anything required in our line. Specimens of our work may be seen in all the mining regione on this coast.

CeCAR LEWIS. S. S. MORRILL.

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28 Fremont street.....SAN FRANCISCO.

LEWIS & MORRILL,

Manufacturers of all kinds of Architectural and Ornamental Iron Work,

LAUNDRY MACHINERY, STEAM ENGINEE, ETC.

Agricultural Work and all kinds of Blackemithing and Jobbing done with promptnese and at reasonable prices. Ordere from the country promptly executed.

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OCCIDENTAL FOUNDRY,

137 and 139 First st., near the Gas Works, San Francisco.

STEIGER & BOLAND,

IRON FOUNDERS.

IRON CASTINGS of all descriptions at short notice.

NOTICE.—Particular attentfon paid to the making of Superior Shoes and Dies. 3v24-3m

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CALIFORNIA BRASS FOUNDRY,

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ALL KINDS of Brass, Composition, Zinc, and Babbitt Meta Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch

☞ PRICES MODERATE. ☜

J. H. WEED. V. KINGWELL.

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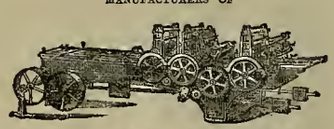

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IMPORTANT TO MINERS AND MILL MEN.

Silver-Plated Copper Amalgamating Plates, for Saving Gold.

Of all sizes and in any quantity, furnished to order. Full instructions sent for operating.

Particular attention given to plating goods for Builders, Plumbers, etc. Hotel and Restaurant work replated.

SAN FRANCISCO GOLD AND SILVER PLATING WORKS, 555 Mission street, San Francisco.

2v25-3m E. G. DENNISTON, Proprietor.

Notice is hereby given, that the copartnership heretofore existing between A. J. Severance, Charlee W. Randall and J. Gue. Burt, under the firm name of "Severance, Holt & Co.," is tbis day diseolved by mutual consent. A. J. Severance, having purchased all the interest of bis late partnere, will continue the bnsinees of manufacturing and selling Diamond Drills, as before, under the style of A. J. Severance & Co.

Dated San Francieco, Nov. 24, 1871.

Office, 315 California street. A. J. SEVERANCE, CHAS. H. RANDALL. J. GUS. BURT.

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The Hesse Grinder and Amalgamator.

BEST IN USE!

Especially well adapted for the Reduction of Sulphuret Ores.

LORD & PETERS, Agents, 304 Battery street, San Francisco, Cal.

☞ Send for Circular. 13v24-3m

THEODORE KALLENBERG,

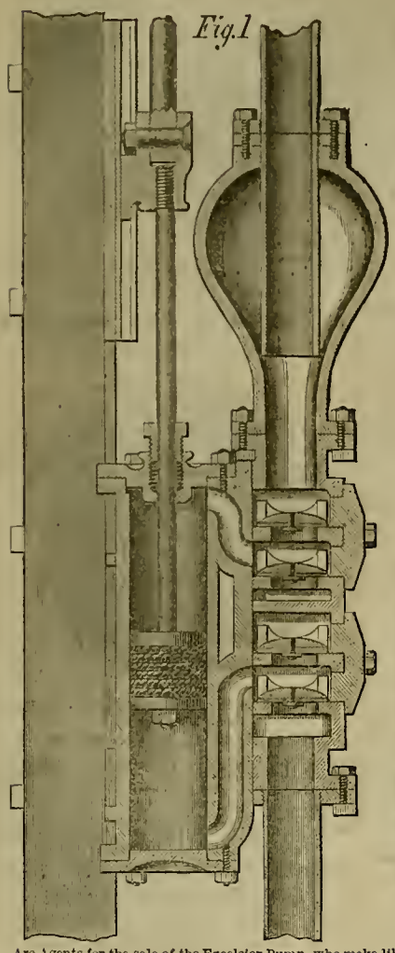
MACHINIST,

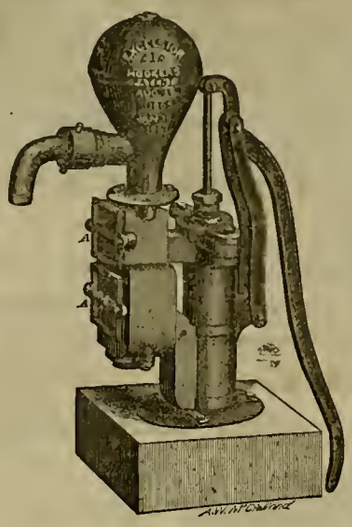
and Maker of Models for Inventors. All kinds of Dies, Stamps and Punches made. Also, all kinds of Small Gears Cnt.

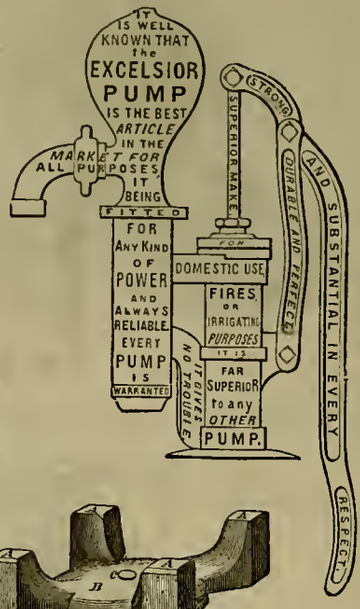
Repairing done on very Reasonable Terms and in the best manner. No. 32 Fremont street, S. F. 19v23-3m

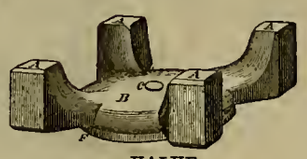
EXCELSIOR IMPROVED DOUBLE-ACTING SUCTION AND FORCE PUMP.

HOOKER'S PATENT, August 13, 1865, and January 15, 1867.

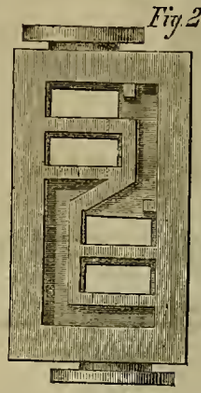




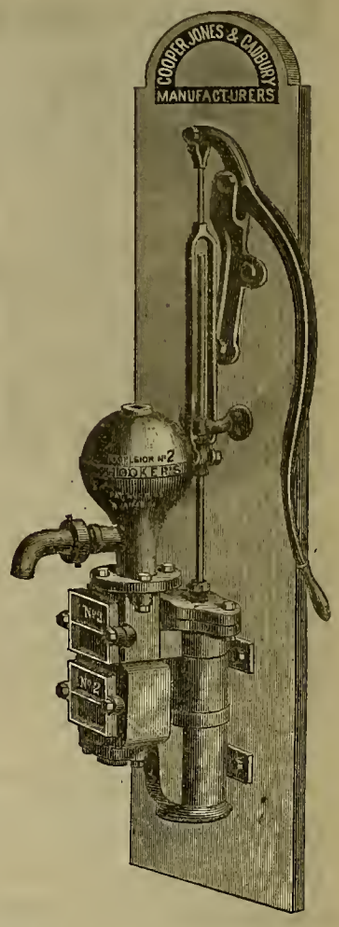

IT IS WELL KNOWN THAT the EXCELSIOR PUMP IS THE BEST ARTICLE IN THE MARKET FOR ALL PURPOSES, IT BEING FITTED FOR ANY KIND OF POWER AND ALWAYS RELIABLE. EVERY PUMP IS WARRANTED
STRONG
SUPERIOR MAKE
DURABLE AND PERFECT
AND SUBSTANTIAL IN EVERY RESPECT
FOR DOMESTIC USE
FIRES, OR IRRIGATING PURPOSES
IT IS FAR SUPERIOR to any OTHER PUMP.
NO TROUBLE TO KEEP IT IN ORDER



VALVE.



VALVE BOX.



We call the especial attention of all Millwrights, Miners and Farmers to this very superior Force Pump. It is more simply constructed, more durable, and has larger and more direct ports for receiving and discharging water, and warranted to furnish more water than any other pumps of equal caliber. It has Poppet Valves, which cannot be wrongly placed in the Pump. The Fair of the Mechanics' Institute, held in the city of San Francisco, awarded the owners of this Pump FOR ITS SUPERIORITY, A FIRST PREMIUM AND SILVER MEDAL. Suitable for DEEP WELLS, Factories, Mining, Breweries, Sugar Refineries, Tanneries, Railroad Purposes, Drainage, Irrigation, etc. As the above Pumps are already in use in the principal Sugar Refineries, Factories, Rolling Mills and Gardens in this city, reference may be had where they are working. ☞ See Circular for particulars.

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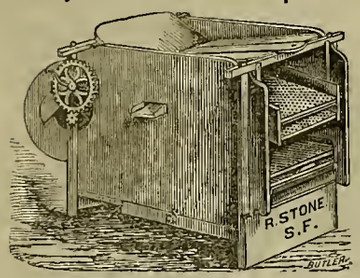
111 and 113 California street, and 17 and 19 Davis street, S. F.,

Are Agents for the sale of the Excelsior Pump, who make liberal discount to the trade. **H. J. BOOTH & CO.**, Union Iron Works, First street, corner of Mission, S. F., manufacture and have the sale of the Excelsior Pump.

THE PATENT

Novelty Mill and Grain Separator



one of the greatest improvements of the age for cleaning and separating Grain, while it combines all the essential qualities of a first-class Fanning Mill. It also far excels anything that has been invented for the separation of Grain. It has been thoroughly tested on all the different kinds of mixed Grain. It takes out Mustard, Grass Seeds, Barley and Oats, and makes two distinct qualities of wheat if desired.

For further information apply to

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Varney's Patent Amalgamator.

These Machines Stand Unrivaled.

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They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the apperture and between the grinding surfaces.—Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

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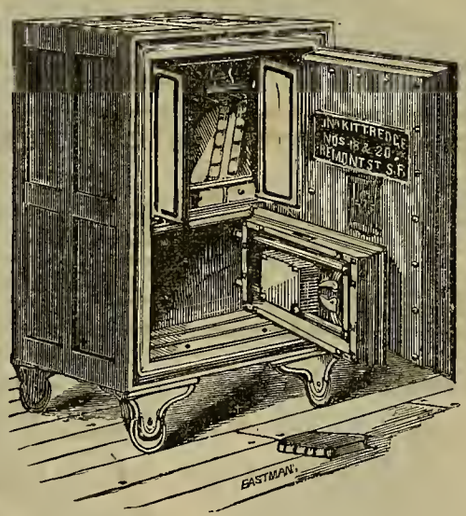

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Standard sizes of railroad Car Wheels, with special patterns for Mining Cars. These small wheels are made of the best Car Wheel Iron, properly chilled, and can be fitted up with the improved axle and box—introduced by this company, and guaranteed to outlast any other wheels made in this State.

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C. P. R. R.

COMMENCING
Monday, April 29th, 1872.
And until further notice, Trains and Boats will
LEAVE SAN FRANCISCO.

7.00 A. M. Overland Express Train for Sacramento, Marysville, Red Bluff, Colfax, Reno, Ogden and Omaha.

3.00 P. M. San Jose Passenger Train, stopping at all way Stations.

4.00 P. M.* Passenger Train for Stockton, Merced and Sacramento.

6.30 P. M. Overland Emigrant Train, Through Freight and Accommodation.

7.30 A. M. Steamer New World (from Broadway Wharf) —Connecting at Vallejo with Trains of California Pacific Railroad.

4.00 P. M.* Sacramento Steamer (from Broadway Wharf). Connecting at Vallejo with trains of California Pacific Railroad.

2.00 P. M.* Steamer Antelope, from Broadway Wharf, connecting at Donahue with Trains of S. F. and North Pacific Railroad.

8.00 A. M. Excursion Boat (Sundays only) from Broadway Wharf, connecting with Special Train of S. F. & N. P. R. R. for Cloverdale and intermediate points, returning to San Francisco by 7 P. M.

OAKLAND BRANCH.—LEAVE SAN FRANCISCO, 7 00 8 10, 9 20, 10 10 and 11 20 a. m., 12 10, 1 50, 3 00, 4 00, 5 15, 6 30, 8 05 9.20 and *11 30 p. m. (9 20, 11 20 and 3 00 to Oakland only).
LEAVE BROOKLYN, *5 30, 6 40, 7 50, 9 00 and 11 00 a. m., 1 30, 2 40, 4 55, 6 10, 7.40 and 10 10 p. m.
LEAVE OAKLAND, *5 40, 6 50, 8 00, 9 10, 10 00, and 11 10 a. m., 12 00, 1 40, 2 50, 3 50, 5 05, 6 20, 7.50 and 10 20 p. m.
ALAMEDA BRANCH.—LEAVE SAN FRANCISCO, 7 20, 9 00, and 11 15 a. m., 1 30, 4 00, 5 30, and 7 00 p. m. (7 20, 11 15, and 5 30 to Fruit Vale only).
LEAVE HAYWARDS, *4 30, 7 00 and 10 45 a. m., and 3 30 p. m.
LEAVE FRUIT VALE, *5 25, 7 35, 9 00 and 11 20 a. m., 1 30, 05 and 5 30 p. m. * Except Sundays.

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PORTABLE ENGINES, TURBINE WATER WHEELS, Wood and Iron Labor-Saving Machinery, Hardware, Belting, Lacing, Packing, and a general stock of Engineers', Miners', Farmers' and Mechanics' Tools and Mill Supplies.

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6x12 | Boilers and heavy Iron Beds, with or without Trucks. For sale at Eastern price,
7x12 | by TREADWELL & CO., Sole Agents, San
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DR. PAYNE,
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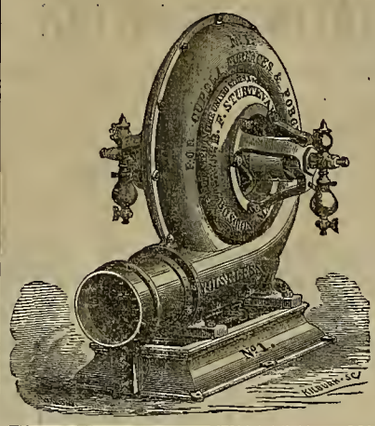

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For Cupola, Furnaces, Forges, Etc.
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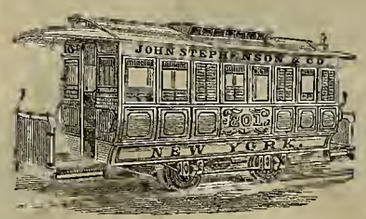

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Price. 50 Cents per Pound.
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20v22-3m16p General Agents, No. 210 Front Street.

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BELMONT, Cal., Fchruary 6th, 1872.
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Yours, etc., J. E. BUTLER,
Supt. Water Works and Engineer at W. O. Ralston's.

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Iron and Locomotive Works.

INCORPORATED.....APRIL 30, 1868.
CAPITAL.....$1,000,000.

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PURCHASERS please say advertised in SCIENTIFIC PRESS.

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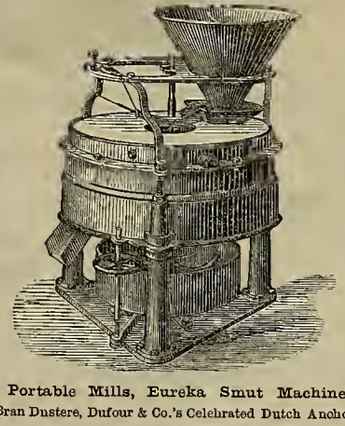

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FIRE ENGINES, FORCE AND LIFT PUMPS.
Steam, Liquor, Soda, Oil, Water and Flange Cocks, and Valves of all descriptions, made and repaired. Hose and all other Joints, Spelter, Solder and Copper Rivete, etc. Gauge Cocks, Cylinder Cocks, Oil Globes, Steam Whistles. HYDRAULIO PIPES AND NOZZLES for mining purposes. Iron Steam Pipe furnished with Fittings, etc. Coupling Joints of all sizes. Particular attention paid to Distillery Work. Manufacturer of "Garratt's Patent Improved Journal Metal."
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Each Saw is Warranted in every respect.
Particular attention paid to construction of
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MINING AND SCIENTIFIC PRESS.

An Illustrated Journal of Mining, Popular Science and Progressive Industry.

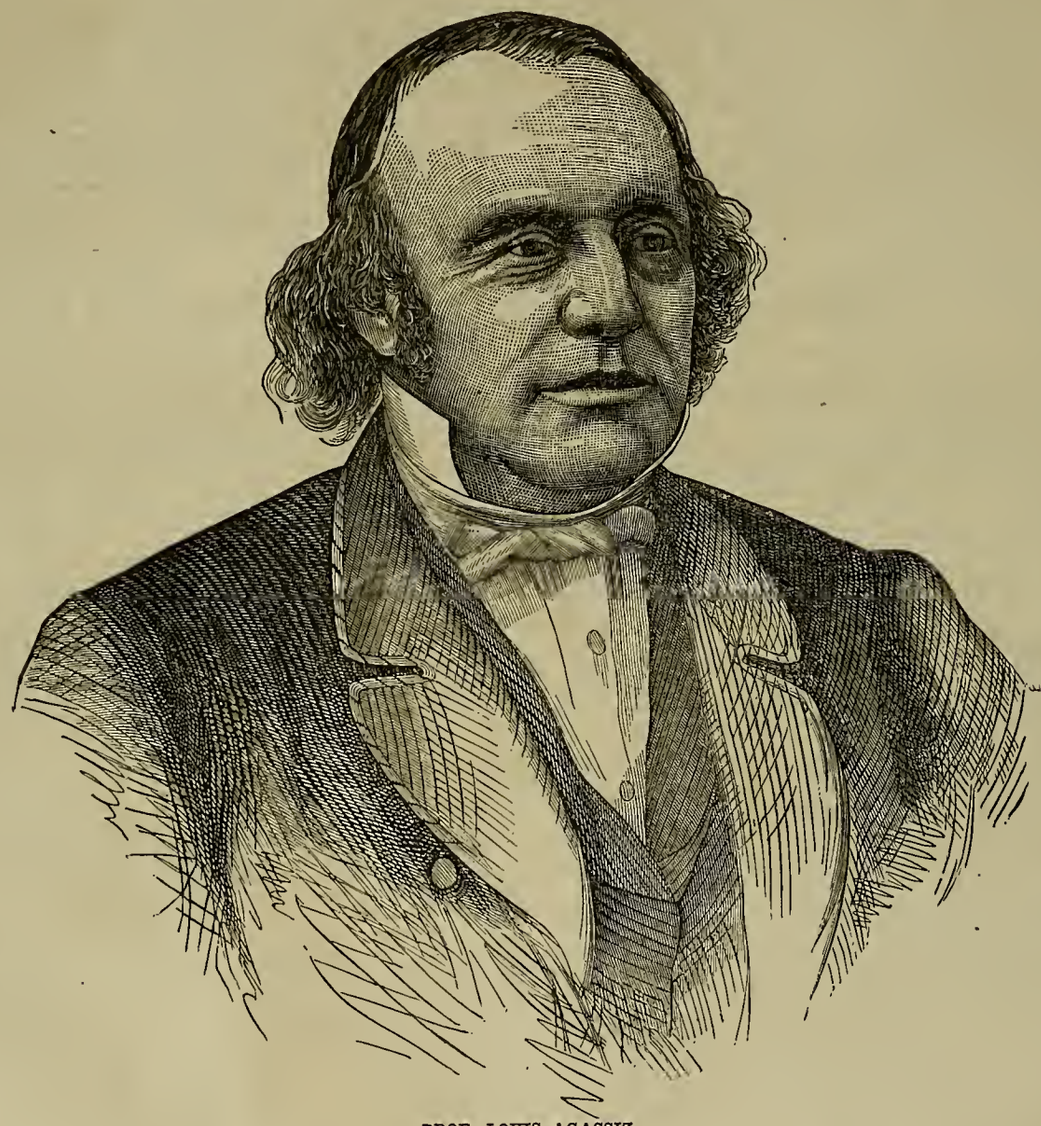
BY DEWEY & CO., Patent Solicitors. SAN FRANCISCO, SATURDAY, AUGUST 31, 1872. VOLUME XXV. Number 9.

Louis Agassiz.

Louis John Rudolph Agassiz, whose portrait accompanies this sketch, may justly he considered one of the moet remarknble men of the age. No man of any time has devoted his energies more nntiringly to the study of science than has Prof. Agaseiz; and certainly no living man has contributed more to the solntion of the various prohlems of natural science. His life has been one of most intense nnd persevering laher, self-denying throughout, and it is neither adulation or extravagance to place his name at the very pinnacle of scientific fame.

His portrait, while it indicates a man of great mental and physical pewer, intense tenacity and keen observation, exhibits at the same time a countenance of much benignance and repose. His expressien is friendly, inviting and full of meekness. His forehead is strongly indicative of intelligence, while the whele conteur gives evidence of rohust health and a superabundance of vitality.

Such an organizatien is well calculated to enable a man te take and maintain a front rank among men, to nrge on and snstain its poseessor in such a lifework as that in which the suhject of this sketch has heen engaged, and which he still, at the advanced age of sixty-five, pursues with all the ardor and mental, if not physical, energy of a man in the prime of life and viger. He has heen aptly described ae a man of no high-preseure engine or race-horse stamp, bnt rather one who may he compared to a mammeth lew-preesure en gine, capahle of exerting a tremendeue influence in a steady and most effective manner.



PROF. LOUIS AGASSIZ.

Pref. Agassiz, though a native ef Switzerland, is of French descent, his family having heen among the expatriated Huguenots. Hie father was a protestant clergyman, as have heen his lineal ancestors for six generations back. Young Lonie wae early taught the precepts of a Christian life, and the great truths thus instilled into his youthful mind have grown with hie growth and deepened into convictions no less firm than have the great principles of ecientific truth which he has evolved from hie life-long studies of nature.

The Professor is no progressionist, bnt is the upholder of the doctrine of euceesive creations, advancing in improved orders of organized heings on the earth. He denies that species insensihly pass from a suhordinate to higher, but that each has had its appointed period and eeperate creation. This, he helds, is taught by the hook of nature as well as hy the revealed Word, and herein he claims and says we have "the mest palpable demonstration of the existance of a persenal God, author of all things nnd maker of the univeree. Thie, at least, is what I read in the werks of creation."

At the very early nge of ten years, Agassiz evinced a decided taste and ahlity for the prosecution of ecientific researches, and never seemed happier than when climbing the steep acclivities of hie mountain home in search of something new in the way of fern, flower, or fossil. In later years, when a promising and lucrative business was held ont to him, he etill chose to continue his researchee, with often hut a single *sou* in his pocket, "n sum eo little," he said, "when my hunger wae so big." But he could not give up his cherished love of the half effaced signs of the unknown language which he insisted God had written upon the rocks, that men ehould trace out, with all the care, perseverance and love with which a child would follow the footsteps ef a father loved and loet. Forseeing the probable fnture of their boy, the parents, with a most commendnble judgment, sent him at the age of eleven to the Gymnasium at Vienna, with the view of first layiug a preper physical fouudation as the true basis for a eound mind. We have net the space to follow him in the varieus steps of educational progress which prepared him so well for the high positiou which he has occupied in the world of science. Passing over the fact that while yet a youth he made the acquaintance and won the friendship and admiration of such men as Humholdt, Cuvier, Oker, Martius, Schelling, Dollinger, etc., we will merely refer to his firet introduction to the ecientists of England.

Having fonnd hie way to London, alone and without introdnction, he sought out Sir Roderick Murchison. The great naturalist noting hie beardless chin, asked: "Well, sir, what do yen *know?*" "A little ahout fish," replied the young man with hesitation. Sir Redcrick invited him that evening to the meeting of the Royal Society, at which, to test his knowledge, he took up a covered package containing a fossil fish, stated the exact condition and geological position in which it was found, and asked, "Can our young friend, who knows something ahout fishes tell ue anything ahout this fossil without seeing it." The young man stepped promptly to the hlackboard and drew a figure, which, when the fossil was nnwrapped, proved to he its perfect represcntation. The old grey headed ecientists, by whem he was surrounded, thereupen promptly recognized the ruddy cheeked youth as one of their equals, and frem that time te the day of his death, Sir Rederick was one of his warmest and most zealeus friends.

One of the first werks undertaken hy Agassiz, was the icthyelegical portion of the great work of Martius on the natural history of Brazil. The manner this work was performed placed him at ence in the foremest rank of naturalists. In this work he gave to the world a new classificatien of fishes to which he has ever since remained steadfast. We have no space to refer, even hy title, to all his numerous, valuable scientific werks. The one perhaps which has mest largely contributed to his world reputation is his "Studies of Glaciers," in which he advanced some new and startling theories, the truth of which he has ever since maintained and etrengthened hy the additien of numerous facts brought to light from time to time in subseqnent researchee.

The reeulte of his expeditien to Brazil with a scientific staff in 1865–66 are well-known. In additien to his scientific repert of that expedition he also, in connectien with his wife, who accompanied him, wrete and puhliehed n work on that country, abounding with charming sketchee of Brazilian life and ecenery.

The expedition in which he is new engaged and in which he ie also accompanied hy his wife, premises to be one of equal if not greater importance to the canse of scieuce than any in which he has heen hefere engaged. Ere these lines meet the eye of the reader it may he that he will have arrived in this city, where he will receive a most cordial welcome.

As may well he supposed from what has been said, Agassiz' method of teaching is very clear and simple, and he posseses a happy faculty of at once establishing a cordial and mutual attachment and sympathy hetween himself and pupils, who seem at once to enter into and catch up the interest and spirit of their master.

This city was visited by a slight shower of rain on Thursday last.

CORRESPONDENCE.

Notes of Travel in Lincoln Co., Nev.

[By our Traveling Correspondent.]

Ely District.

Tbe minss of this district, which are located near the town of Piochs, Lincoln Co., Nevads, are 152 miles, nesrly soutbesst of Hamilton, Nsv., and 850 miles from San Francieco, Cal., st an elevation of from 6,200 to 6,700 fest abovs the lsvel of the ssa. The first spscimens of ors that we can find any account of, found in this district, wsre brongbt into Gsnsral P. E. Conner's camp at Salt Lake City, by U. S. soldisrs in 1864; from which circumstance, many of the oldest locations hers ars called the "Soldisrs' Titles," and are considered ths best; ths Government having confirmsd the soldiers titlss, after the Indians had driven them away for the tims heing.

Pioche City,

The county seat of this county, is situated at an elevation of ahout 6,000 feet, contains 3,500 inhabitants, and is one of the busiest camps in eastern Nevada. This county contains 4,500 inhabitants and has ahout $1,750,000 personal property taxation, not counting tbe taxes on "hullion," and income taxes to the Government. This place has erected in it a fine fireproof county building, besidee some 14 fireproof mercantile establishments. The pavements in many parts of the town are flagged and curhed, and look as though the citizens intended to stop here. There are no hotels in this place—lodging honses, and restaurants are the style adopted, at which combined, good living is ohtainahle, at from $3.50 to $5 per day. The flies here are the greatest nuisance, not so muchfrom their numbers, hut from their peculiarity; as their bite is slightly poisonous, and even the wing or foot of one taken unawares iu food, proves a very forcible emetic. Tbis place is supplied with two fire companies, one hook and ladder, and one hose company. The cost of getting from your city to this place is $93, for travel only, and the time occnpied in transit is three days and eight hours; 573 miles of the distance (to Palisade) is made by rail, and 377 by stages. One of the principal companies supplying water tor this place is the

Pioche Water Works.

These works are owned by Gen. P. E. Connor, formerly of Stockton, Cal., hut who now resides most of his time in Salt Lake City. P. L. Shoaff, a printer, is the Superintendent. The water is conducted through wood and iron pipes some nine miles iu length, the latter heing used where any pressure of amonnt occurs. The springs are located in the mountains, fifteen hnndred feet higher than the intersection of Main and Meadow Valley streets, Pioche, and are called the Big Cañon Springs. The heaviest pressure on the entire route is not over one hundred and eighty feet. Work was commenced on the 15th of May, 1871, at tbe springs, where a steam engine and boring machiue were placed in position, and nut pine logs used for pipe, which were found superior to auy other wood growing in the neighborhood. Three different stations were made on liue of ditch, where water was sold, which was hauled into Pioche, and, by the time the main tank was completed in the city, Gen. Connor had his works ovsr one-third paid for. He has two tanks in town, at an elevatiou of over two hundred feet, the capscity of which are thirty thousand and five thouand gallons, and were hoth overflowing with tbe purest of water when I examined them. The flow of water into these tanks is not far from twenty-seven thouand gallons daily, which is distributed through the city in water carts at presont, but irou pipes will soon he laid through the principal streets, thereby doing away with carts and drivers, which is an expensive mode of supplying water. Men are now at work in the mouutains digging for more water, to he added at any time to what there is running into town, should the demand warrant it. There is also another water company here, but in the absence of particulars, I must pass them hy; suffice it to say that this place is well supplied with water, and well fortified against the future ravages of fire.

Stags Lines.

Gilmer, Salishury, Travis & Co. are the proprietors of the line from Hamilton to Pioche, a distance of 152 miles; 10 cbanges of horses are used in transit each way, carrying the U. S. Mails and W. F. & Co.'s express (wheu tbey are not relieved of the box by "road agents"). The time occupied is from 23 to 24 hours. The line from Pioche to Salt Lake City, is owned hy Gilmer & Salishury, the distance between these two points, (the present route) is 320 miles, hut will by Septemher be shortened to 260 miles; time occupied in transit 3½ days. W. K. Miller, Esq., is the proprietor of a daily line to Bullionville from Pioche, a distance of 12 miles; fare $2; time 2 hours. The line from Hamilton to Pioche departs and arrivee every other day; the line from Pioche to Salt Lake, departs and arrives daily.

Lumber.

All the lumber sold in this place is hauled from 40 to 125 miles. Market price runs from $80 to $100 per 1,000 feet. In the past year 1,500,000 feet have heen used in the mines and town, bssides a large quantity of round and hewed timher. All ths lumber sold comes from the, Wssatch range of mountsins, 120 milss distance in Utah, in the vicinity of Parowan and Beaver.

Bullion Shipment.

Tbrough the kindnees of Mr. B. F. Sides, Wslls, Fsrgo & Co's sgent at this place, I ohtained a statsment of ths amount of hullion shipped through that office from January 1st, 1871, to August 2, 1872. It is well known that ths most reliahle data that we have witb regard to the bullion product of the coast, comss from ths hooks of W. F. & Co., as tbe majority of the shipments pass tbrough their hands. The following figures may therefors hs considered perfectly rsliable:

DATE.	BULLION SHIPPED.
Sept 30, 1871. was	$2,775,080.19
For mo. of Oct. 1871	453,604.87
" Nov. "	419,894.37
" Dec. "	333,649.46
" Jan. 1872	278,206.92
" Feb. "	314,054.29
" Mar. "	502,954.74
" Apr. "	421,920.16
" May "	508,276.61
" June "	467,431.52
" July "	522,785.84
To Aug. 3d, "	82,000.00
Total shipments to Aug. 3d	$7,079,357.87

Commencing on the east end of the Hill, ths locations are as follows, together with their development.

Page & Panaca S. M. Co.

This is an incorporation with a capital stock of $4,000,000 in 40,000 shares. Henry Mayers, President; L. Kaplan, Secretary; M. W. Kales, Superintendent; this company claims 2,400 feet on the ledge which runs east and west, and dips to the south at an angle of ahont 70°. This mine is developed by a verticsl sbaft, down 334 feet; this shaft cuts the ledge at a depth of 160 feet from the surface; at this point a drift is run south for a distance of 145 feet, cutting a large body of ledge matter, supposed to he the top of tbe main ledge. Fine hoisting works have been erectsd over the shaft, and as soon as their hoisting rope—now in transit—arrives, the machinery will he put to work. Drifting will also be commenced from the bottom of the main shaft, and a fnll force of men employed. This mine is located abont 1,000 feet east of the Lightner Shaft, on tbe Raymond & Ely mine, half mile south of Pioche.

Amador Tunnel,

Located under the new law, is in 70 feet. It starts at a point near the Kinston Mine, runs nearly east, running under Spring Mountain. M. W. Kalee is Supt. working 6 men by contract.

The Bowery Cons. M. & M. Co.,

Is incorporated with $3,000,000 capital stock, in 30,000 shares; J. D. Fry, President, and C. E. Elliot, Secretary, and A. J. Blair, Superintendent. This company's mine is located one-half mile east of "Pioche;" they claim 1,000 feet of a ledge, running nearly east and west, which dips to the north. This ledge is about 8 feet thick. Three shafts are sunk on this mine; the east shaft is down 52 feet; the west shaft is down 48 feet, and the msin shaft—snnk between the two ahove mentioned—is down (vertical), 207 feet. At this point a drift is run north 125 feet, and a drift is run south from the main shaft 72 feet. At a point 50 feet from the surface, in the main shaft, a drift is rnn 100 feet to the westward. The ledge at this point is 8 feet thick. Steam hoisting works are in course of erection, and expected to he in running order hy Aug. 25th. Working 30 men. This company also own a 10-stamp mill, located near Bullionville, about 10 miles east of Pioche, whicb has a capacity to crush 10 tons daily. They are not now extracting ore, but 275 tons previously worked, yielded $37,000; working 13 men at the mill.

A "White's furnace," to be connected with this company's mill, is almost completed. When this is done, the perfection of this corporation's reduction works, will be as complete for their capacity as any in Ely District.

The Kentucky

Is a claim of 1,000 feet, located February 16th, 1869, on Panaca Flat, and adjoining the Raymond & Ely. It is an incorporation in 30,000 shares, with E. Venard as President, J. P. Cavallier, Secretary, and J. B. E. Cavallier as Superintendent. Their hoisting works are erected, with double reels and steam power of 20 horses. The shaft, in two compartments of 4x4, is timhered to a deptb of 200 feet. A contract to sink and timher 100 feet more has been just let; contractors furnishing powder, candles, fuse, doing smithing work, snd receiving $13 per foot for same; 14 men employed at present. At one time, and before the machinery was up, 38 men were employed at the mine. There is on old works covered np now by a tnnnel, a veiu sunk upon to a depth of 48 feet, the ore paying from $90 to $150.

The Phœnix Mine

Consists of an original location of 1,000 feet, running east and west, and located between tbe Page & Panaca, on the west, and the Hermes on the east. This location is owned here, by some 18 proprietors, one of whom, James Francis, is Snperintendent. It is developed to a depth of 200 feet, hy a perpendicular sbaft; at this point a drift is run 80 feet to the south, at which point they struck a seam; from this point an incline is run down 112 feet, on an angle of 70 deg., the last 22 feet of whicb was in a fine hody of ore 3 feet thick, assays from which run from $68 to $498 per ton. Tbis company are working 15 men, 3 shifts daily; have about 10 tons of ore on ths dump; hoisting at present by windlsss.

Ingomar Silver Mining Co.

Capital stock, $3,000,000, in 30,000 shares. L. A. Booth, President; Chas. S. Nesl Secretary; and W. W. Ketton is Supsrintendent. This company's mine, at Piochs City, Nsv., is located about 450 feet west of the Lightner shaft, on the Raymond & Ely mine. The original locators of this mine sunk a shaft 120 fsst deep, from the bottom of which they run a drift 40 feet south; at this point tbey snnk a winzs 180 fset in depth, striking a body of ore ahout 7 inches thick.

The late Superintendent, Mr. John A. Curtis, (now deceased,) sunk a shaft some 20 feet south of the first shaft, and farthsr up the hill, to ths depth of about 70 feet, for the purpose of strengthening the works. This shaft has both a hucket and ladder way, is well timhersd, and in a few days the engine and hoisting works will hs rsmoved to this point, whsre prospecting will be carrisd on in earnsst. At the bottom of this new shaft they are upon veiu matter, and no rsason exists, why, when a sufiicient depth is ohtained, that they should not find a good ore hody. Its closs proximity to the Raymond & Ely, which has two distinct ledges on the surface, at or uear this point, and wbich ars convsrging together as deptb is obtained, gives the Ingomar good hopes of success, at a depth of a few hundred feet. A full force of 20 men will be at work on this mine by the time tbis is in print.

Herme's S. M. Co.,

Incorporated witb $3,000,000 capital stock, in 30,000 shares, J. B. Haggin, President; B. B. Minor, Secretary; and W. H. Clark Superintendent. This company's mine is located at Pioche, adjoining the Lightner shaft on the west. It is being developed by one principal shaft, situated about 300 feet west of the Ligbtner shaft, Raymond & Ely mine; at present, down 440 feet. This shaft is in two compartments, 4½x5 feet each, in the clear; timbered from top to hottom, and cousidered the second best shaft in this district. At present, working by whim, but boisting works are now on the way. This company's ore hody runs east and west, and pitches to the south. This main shaft cut the same, and passed through the ledge at a poiut 230 feet from the surface. Tbe ore hody at that point is 20 inches in width, and assays $100 per ton; 8 msn are employed upon this mine by contract.

The Raymond & Ely S. M. Co.

Was incorporated, Jan., 1871, with a capital stock of $3,000,000 in 30,000 shares; Alpheus Bull, Pres.; A. J. Moulder, Sec.; C. W. Lightner, Gen. Supt. and W. P. Clarke, Assistant Supt. This corporation's improvements consist of 3 working shafts; commencing on the east is the Burk Shaft and whim. This shaft is 570 feet deep; no work is now being done on the same, except sinking by contract. This shaft follows the incline of the ledge, which at this point pitches to the south at an angle of 62°. The ore hody was cut in sinking this incline at a depth of 500 feet; at that point it is about 12 inches wide, and pays an average of $75 per ton; hut little prospecting has been done in the ore hody of thie shaft. About 500 feet west of the Burk Shaft, on the surface is the

Creole Shaft,

Of this mine, which is down on the incline 600 feet deep at an angle of 64°, following the ledge most of the way; now, however, in tbe foot wall; the shaft cut the ore hody at a depth of 500 feet. At this point, drifts have been run hoth east and west for a distance of 200 feet, showing a fine hody of ore on the west, varying from 6 inches to 2 feet in thickness; hut very little ore is fonnd on this level to the east. This shaft is opened hy five different levels, in three of which, the lower ones, no stoping has been done. A large body of ore is ready to be taken out, whenever necessity demands, bnt having all the ore they wish to supply their mills, from the Lightner Shaft, no ore is heing taken from this sbaft. At the present writiug, are working this shaft by whim, hut hoisting works will he erected very sbortly. Next comes on the west the famous

Lightner Shaft,

Which is vertically down 483 feet, npon which is erected fine steam hoisting works, run by a 35-horse power engine, and surrounding which, is the ore honse, carpenter shop, blacksmith shop, and every convenience for carrying on this extensive mine; the cage in this shaft is the first ever run in tbis camp. This sbaft was started on the second day of June, 1871, siuce which it has yielded more bulliou than from any similar shaft in tbe known world, in the same length of time. The amonnt of hullion extracted from this entire mine from Jan. 15th, 1871 to August 6th, 1872, is $2,013,432.93; now yielding about $370,000 monthly. This mine is opened hy 5 different levels; at present working on the 3d, 4th and 5th levels; the 3d is 223 feet from the eurface. From this level a greater portion of the ore has already been extracted, althougb it still yields some 12 tons daily; working 20 men. From the 4th level, which is 323 feet from the surface, ahout one-half of the ore has already heen extracted, yielding at present writing about 65 tons per day. On the 5th level, lowest at present working, drifts have been run 300 feet, hoth east and west, all of which is yet virgin ground, except stopes nnmbers 1 and 2, which have just heen started; at present yielding 25 tons of ore daily. They have a continuous ore shute at this point 570 feet in length, varying from 18 inches to 8 feet in tbickness. At present this shaft is yielding about 100 tons of ore daily, the pulp assay of which is $160 per ton. Tbis company own 2 mills, located near Bullionvills, abont 10 miles distant, in an sastsrly direction, to which the ore is hauled by teams, at a cost to the compsny of $5.50 per ton. One of these mills has 20 stamps, (wet crushing) ths capacity of which, is about 35 tons dsily. The other known as the New mill, hae 30 stamps (dry crusher) and has a capacity of crushing 55 tons daily. This company employ regularly 350 men, at their mills and mine.

Newark S. M Co.

This is an incorporation of $3,200,000; Capitsl stock in 32,000 shares; S. Heydsnfelt, President; D. T. Bagley, Secrstary; and C. W. Watson, Superintendent. Tbis Co. claim 800 feet of a lsdgs, hearing northwest and southeast, and dipping to ths southwest, at an angle of about 70°. The main ebaft is located about 300 feet southwsst of the Msadow Valley Co,'s shaft No. 3, and about 350 fest southsast of the Lightuer Shaft of the Raymond & Ely. Steam hoisting works havs just been completed, erscted ovsr ths main shaft, which is down 400 feet deep. The shaft runs down perpendicular for 220 feet and from that point a winzs is sunk to the dspth ot 180 feet, following ths incline of the lsdge; for the last 30 ft. in ths winze going down, a ledgs averaging ahout 12 inchss thick is found; although narrow, its richness makes up what it lacks in width. It pays from $220 to $3,000 per ton, and averagee $400 per ton. Some 7 tons of ore are now on the dump, taken out while sinking. The main shaft will be carried straight down, and levels run off to work the ledge from. Some 15 men are now employed.

The Mazeppa Mine,

Consisting of 1,000 feet, was located in 1869. Title perfect. Present owners, Col. Sabin, Lawson, Wilson and others. Shaft 180 feet deep From 40 to 50 tons of ore on the dump; assays from $100 to $2,000 per ton—and will average $300. Claim unincorporated; worked under supervision of James Wilson, Superintendent. Mine runs nearly east and west; is on the main mineral hill of the camp, and is in direct line of the richest discoveries yet found. Present width of ledgs 30 inches, in high gravel ore. Shaft snnk 40 to 50 feet; a continuous body of ore; shaft shows ore from the top.

Washington & Creole M. Co.

Has a capital stock of $3,000,000, in 30,000 shares. Geo. D. Roberts, is President; Frank D. Cleary, Secretary; and P. C. Hyman, Superintendent. This incorporation claim 200 feet of a ledge, running east and west, and dips southerly, at an angle of 60 deg.; its location is between the Meadow Valley and Raymond & Ely mines, at Pioche, in Ely District. They have one incline shaft down 500 feet, following the inclins of the foot walls. This mine is heing worked by 3 different levels; the first level is driven hoth east and west (230 feet from the surface) for a distance of 40 feet through a strong ledge; the second level is 340 feet from the surface, and ths third lavel 440 feet from the surface. But little breasting out has heeu done on this mine—owing to working heretofore by whim. Fiue steam hoisting works are now in course of erection, expected to be completed hy September 1st. They have, at this writing, ahout 150 tons of ore on the dump, that assays an average of $100 per ton. A full force of men will be put to work on this mine immediately on the completion of their hoistiug works.

Chapman M. and M. Co.,

Incorporated in 30,000 shares, with $3,000,000 capital stock; E. P. Figg, of Sacramento, President; Chas. H. Fish, Secretary; and C. W. Watson, Snperintendent. This corporation claim 1,000 feet of ledge that runs east and west, and located south of the "Americau Flag" miue, on a parallel ledge. The "Huhn & Huut and Desdemona" are supposed to be on the west extension of the Chapman. This company are working by whim on their main shaft, which is down 360 feet on an incline of ahont 70 degrees, pitching south, following the ledge, which is from a trace to 14 inches thick. Tbe ledge matter in this mine will average from the top down, 30 feet thick; it is considerahly broken np hut with traces of mineral all thiongh. On the main shaft they are still sinking, and as depth is ohtained they expect the ore body to be more fixed, and larger, as indications go to sbow as far as they have got. Two levels have heen run in this sbaft, one at a point 180 feet and the other 240 feet from the surface; drifts have heen run east and west in hoth levels 30 feet west iu each, and ahout 130 feet east on each level. This company have about 150 tons of $100 ore on their dumps; working 12 men.

Arkansas Silver Mining Co.

Messrs. John J. Valentine, M. Byrne, B. Bayerque aud H. Mathey, are the Trustees; L. L. Robinson is President; Geo. Davidson Secretsry, and Henry Phillips, Superiutendent.

The Arkansas mine is situated on Spring Monntain, 200 feet west of the American Flag sbaft. Shaft down 250 feet from the surface, on good ore. Ledge from one to three feet wide; ore will average $150 per ton. Amount of ore on dump 100 tons, that was extracted from sinking shaft; will average $200 per ton. Shaft all timbered, and engine almost ready to run. From all appearances, tbere can be ore enough extracted to run a 10-stamp mill.

More from Pioclе in my next.

L. P. Mc.

Give work rather than alms to the poor. Tbe former drives out indolence, the latter industry.

MECHANICAL PROGRESS.

Paper Armor—Plating for Vessels.

On the Continent, especially in Italy, the idea that properly prepared fabrics may bo employed successfully as armor-platiag material has never been ahandoned, and as early as 1860, Signor Maratori, a colonel in the Italian army, commenced investigations and experimeuts upon the subject, which ho has prosecuted ever since. In 1862, the attention of Victor Emanuel waa drawn to the resnlts he had achieved, and which had obtained the approval of a body of officers in the Italian army. Abont the samo time, General Griffini pnblished a pamphlet iu which hs expressed his favorable opinion of Colonel Muratori's invention, and recorded all the results of the trials which had been officially conducted, aad which satisfactorily proved the great power of resistance which the material offered.

In 1868, the matter was submitted to the notice of the Emperor Napoleon, who caused experiments to be coudaetad at Chalons, the result of which confirmed the carlier official trials made in Italy. The French report, indeed, speaks in very sanguine terms of the invention, and iadicates the manner in which it coald be utilized for the protection of vessels. After some delay, farther trials were commenced, but before any aetion was taken, war with Germany was declared, and this matter, in common with a thousand others, was swept aside to make way for tho pressing requirements of the time.

Colonel Muratori is now in England making arrangements for an exhaustive trial of the armor, which has been approved of by several naval officers who havo scon it, and who express an opinion that most valuable service may he rendered by it. One successfnl application certainly has already heen made hy the inventor, namely, in the coastruction of a cuirass, which, weighing the same as the ordinary cuirass, and costing less than one-fifth as much, has nevertheless a far greater power of resistanco. We have seen it turn a regulation pistol-hullet fired from a distance of three feet, and it is eqnally capable of resisting a bayonet-thrust. By a modification of the process, fabrics suitable for military gaiters are endued with a singular power of resistance, and are thus invaluabls in action by protecting the wearers from spent balls or sword-cuts.—*Engineering.*

Art in Metal Work.

We have often remonstrated agsinst the incongruous character of our metal-work. Here there is a comparatively untrodden path of art. Cast and wrought iron work are extensively employed in building. These are as capable of artistic treatment as the brick or stone building with which they are incorporated. Generely, however, they are either covered np, or else made in the forms of stone architectural features, as though metal wes something to be ashamed of; as thongh it had no properties that did not suggest life and beanty in artistic design, allowing the metal to appear, and making its nse strength, and appearance forcibls; marking and emphasizing it in the building; and, instead of hiding it, or making it eppear like some other material, giving it a definits design and character of its own. Thus, hy its force and contrast, it would very greatly add to the effect of the building where it was employed. There is no exception in the case. All kinds of purposes for which metal is used in hnildings might be marked and emphasized hy artistic treatment. How much less of sameness end tameness would there be if this were done! end how much greater wonld be the artistic feeling and force!—so very desirable. There is great scope here; and, until more is done in this department, there is something wanting here.

The employment of zinc for external cornices and canopies is coming into vogne. Setting aside the question of durability, why is it not possible to treet the material artistically as metal? What is the necessity of making it appeer like stone? Even with a design resembling the treatment of stone, it looks far hetter with its glossy, natural color as metal, than when smeared and deadened with paint not at all in accordance with its netnre.—*The Architect.*

Obtaining Water from Ocean Depths.—An apparatus for obtaining water from the depths of the oceen has heen invented in Germany An open vessel is lowered by means of rope and weights until the desired depth has heen reached. Then an electric current is transmitted through en accompanying wire, which, hy inducing another current in an electro-magnet in an epparatns ettached to the vessel, releases springs which turn stop-cocks, and the water of the depth is enclosed. Several most interesting experiments for the determination of the amonnt of carbonic acid in deep-sea weter have been mads hy meaas of this invention.

English and American Plate Mills.—Mr. C. B. South, of Pittshnrg, Peun. who is now absent in England, writes to a friend that there are several large plate mills in England, hut none that he has seen that will compare with those of the Sligo Iron Works, and Moorhead & Co's., of Pittshurg, or Abott Works, Baltimore.

Engraving by Sun Light!

The climax of the photographic ert appears to bo as far in the futnre as ever. The latest progressive step consists in caasing the rays of tho sun to form a lithographic plata of aay object presented, from which copies can ba taken, as many aad as readily as from the ordinary lithographic stona! The discoverer is Joseph Albert, of Mnnich, and tho proccss has been successfully introduced iuto this conatry by Edward Bierstadt, a brother of the well known artist. Mr. B. recently gave an exhibition of the process in Boston. Tho manner in which the plate is produced is described as follows:—

An ordinary photographic nogativo of any object is first taken. Then a photographic negative of any picturo is sent to this company, and they nndertake to striko off thousands of accurate copies in n fsw days. A plato of glass about half an inch thick is covered with a solution of gelatina and bichromate of potash, which, when dry, is again coverod with a similar appliance, so as to reuder it a fixture. The film or albuminous substance is then washed in cold water to take ont tho bichromato of potash. The negative is then placed npon the upper side of this prepared thick glass, aud both exposed for an hour or two to the light (the time varying with the strength of the light) until the impression is perfect. Then you have to all intents and pnrposes *a lithographic plate* from which any number of copies can be taken.

By this method, copies from nature, or from engravings or paintings can be obtained as correct as the ordinary photograph, aad far more faithful than hy eny ordinary process of drawing and engraving, and at a cost less than an ordinary lithograph.

The mors elaborate the pictnre, or landscape, the longer the engraver takes to transfer it to stone, but Mr. Bierstedt does not consume a minute louger than the plainest of pictures or outlines require under this new and simple process. Merchants can have their houses of business represented on their paper wreppers, end the poorest can possess faithful copies of renowned artistic works,

The value of snch discoveries to the masses is elmost incalcnlable, and must nccessarily do much toward establishiag a correct taste in works of art in America, as the pictures are comparatively cheap.

Rivet Holes in Boilea Plate.—We recently mentioned, says the *Industrial Monthly*, that Mr. J. Cochrene, of England, after experiments on punching and drilling rivet-holes, concluded that drilling offered no advantage in regard to strength if the punching was done with proper care. From a report of a committee of the master mechanics we learn that e large majority of railway master mcchanics advise drilling instead of punching. The committee had made the following tests, all the pieces heing from the same sheet of 5-16 inch boiler plate, and being 1¾ inch wide.

1. Three piecss were torn in two by hydrenlic pressure at an average strain of 32,685 lbs.

2. Three pieces *punched*, one ⅝ inch hole in each piece, broke under en average tensile strain of 13,485 lhs.

3. Three piecea *drilled*, one ⅝ inch hole in each, hroke under an average tensile strain of 17,645 lbs.

The averege strength of the drilled plate was then 4,160 lhs. greater then that of the punched plate.

4. Three pairs of plates *punched*, end riveted with the best ⅝ inch rivets, one rivet to each pair, hroke in center line of hole at an average strain of 17,549 lbs.

5. Three pairs of plates *drilled* and riveted in the same way, sheared the rivet et an average strsin of 16,342 lhs.

It is not probable that the tensile strength of boiler-plate, per sectional square inch, is impaired by drilling; but your committee are satisfied that it is impaired by punching. They recommended drilling and nse of ⅞ inch rivets, the ⅝ inch beiug too small to resist the shearing action, for longitudinal seams of boilers.

Charcoal Iron.—Charcoal blooms, which were at one time almost the only form of iren from which the rolling mills made bar, plate and sheet iron are now but a mere item of the necessity of the iron trade compared with the vast quantity of pig iron that is used. The "slitting mill," too, is among the things that are only remembered; for they have in this country been displaced, elmost, by later modes of rolling nail rods. The steel hoiler plate, and sheet iron manufacturers are now almost the sole consumers of chareoal hlooms. As late as 1845 and '50 a mill of ten puddling furnaces was considered large; one-half more than that number now constitutes hut a moderete sized mill.

India Rubber Carriages.—It is said that a Connecticut company is putting up a factory for the building of carriages made entirely of India-ruhber except in the axles and tires. A decidcd superiority is claimed for the material over wood.—Why cannot the same principle he applied to the construction of railroad cars? With such cars in case of a "smash up," there conld he no spliutering—the great cause of wounds and loss of lifs in snch calamities.

Mammoth Blast Furnaces.—The Messrs. Cochrans, near Middleshoro, Eng., have two hlaat furnaces, with staeks one hundred feet high, end thirty feet hoshes.

SCIENTIFIC PROGRESS.

Intelligence in Monkeys.

Prof. Cope writea in the *Prac. Acad. Nat. Sci.* for April. I have n moakey, *cebus capucinus*, iu my study who displays the nsual traits of monkey ingennity. He is an admirable catcher, seldom missing anything, from n large hrush to a grain, using two hands or one. His cage door is fastened by two hooks, and these are kept in their places by nails drivea in hehiud them. He gencrally finds means, sooner or later, to draw out the nails, uuhook the hooks and get free. He then occapios himself in breaking up various objects snd exemining their interior appearances, no douht in scarch of food. To prevent his escape I fastonod him by a leather strap to the slats of his cage, but he soon untied the knot and then relieved himself of the strap by cutting and drawiag out tho threads which held the flap for the buckle. He was accustomed to catch his food with his hands, when thrown to him. Sometimes the pioces fell short three or four feet. Ons day he scized his strap and began to throw it at ths food, retaining his hold of one end. He took pretty correct aim and finally drew the pieces to within reach of his hand. Thia performancc he constantly repeats. Sometimes he loses his hold of the strap. If a poker is handed him, he uses that with some skill for the recovery of the strap. When this is drawn in he secures his food as before. Here is an act of intelligence which must have been originated hy some monkey, siuce no lower or ancestral type of mammals possess the hands necessary for its accomplishment. Whether originated by Jack or some ancestor of the forest who used vines for the same purpose, cannot be readily ascertained.

After a punishment, the animel wonld only exert himself in this way when not watched; as soon as an eye was directed to him he wonld ceaso. In this he displayed distrust. He also usually exhibited the disposition to accumulete to he qnite superior to hnnger, Thns he always aporopriated all the food within reach before beginning to eat. When different pieces were offered to him, he transferred the first to his hind feet to make room for more; then filled his month and hands, and concealed portions behind him. With a large piece in his hands, he would pick the hand of his mester clean before nsing his own, which he wes sure of.

Distribution of the Stars.

In a recent lecture at the Royal Institution, Mr. Proctor expressed the helief that the stars are not only not spread uniformly throughout space, but that not even the general approach to uniformity insisted npon in treatises on astronomy in reality prevails. On the other hand, there are definite reasons within which stars of msny orders of magnitnde are richly distribnted, while aronnd these regions are vast spaces in which either there are no stars or stars are very spersely strewn. In favor of this view he adduces the remarkahle circumstance thet the southern hemisphere contains about a thousand more stars visible to the naked eye than the northern. This peculiarity is rendered more remarkable hy the fact that there is a well-marked northern rich region as well as a well-marked southern region of greater extent. In the British assoeiation Catalogue there are about 5,600 stars inclnded withiu the classes visible to the naked eye. Yet when these stars are shown in a series of twelve maps, overlapping each other nniformly, end each covering a space equal to a tenth part of the heavens, instead of each map showing about 560 stars, it is found that the north polar map shows 700, the other five northern maps containing respectively, 400, 540, (a map crossed hy the Milky Way,) 400, 370, and 550, (enother Milky Way map;) while the south polar map contains 1,130, end the other five sonthern maps contain 520, 890, 510, 590, and 570, the condensation in all these southern polar maps being markedly toward the sonth. Argnments were also drawn from the proper motions of the stars, the concurrence of colors, in certain stellar groups, the occurrence in nearly all cases of variahle stars in the vicinity of star streams or star clnsterings and the appearance of temporery stars elways within the Milky Way, in support of the theory of unequal distribution.

Large Bone Cave in Bavaria.—*Nature* describes a bone cave recently discovered near Regensburg in Bavaria. In this, wood ashes and pieces of coal, together with pieces of pottery, had accumulated to the hight of ahout three feet, in the midst of which were sharp splinters of flint, a thick mass of broken and split hones, and the shattered skulls and jaw hones of a heterogeneous mass of animels of all kinds. In the lower layer no trace of man could he found, all the remaina consisted of hones of animals, chiefly the cave hear, hyena and lion. These animals appear to have heen the earlieat possessors of the cave. But soon after this man must havs inhahited the cave, for from thia up to the newest layer, his presence is clearly shown, end the remaina of his feasts and of his daily life ere mingled with those of the animals. The most numerous remains consist of flints. Fragments of pottery were fonnd and a block of granite, with one side rubbed smooth, which was svidently used as a millstoae. The most conspicuous of the remains of animals hnuted and eaten by ths men are those of the cave bear. The boucs of the elephant and the rhinoceros are fewer, but show couclasively that these animals were hunted by man. Remaius of horses, oxea, eats and wolves, end the bones and scales of fish—large pike and carp—occur.

Spectrum of the Zodiacal Light.

There has been some question on this. The *Popular Science Review* says: But all doubts on the subject seem to he finally removed by Professor Piozzi Smyth's reeent observations in Sicily. In the first place, it should he noticed that Prof. Smyth atteuded much more carefully to the structure of his instrument than auy of his predecessors in zodiacal observation. He was also particularly careful to exclude extraneous light. He had an instrument so contrived that he could examins simnltaneously the spectrnm of any auroral light and the faint linear spectrum of an alcohol flame. Now with a narrow slit he obtained from the zodiacal light no spectrum at all, though the very same instrument had, with the same slit-opening, shown tho chief anroral line even from very faint anrora. Aa the slit was widened no trace of a linear or band spectrum could be recognized, but with sufficient opening a faint continuous spectrum, exactly like that obtained from faint twilight, or indeed from the ordinary night-sky when there is no anrora. Here we have absolntely perfect proof of the fact that the zodiecal light gives the same spectrum as faint reflected sunlight. But Prof. Smyth's observation proves more than this. It shows that, nnder the very same circumstances, the zodiacal light gives no spectrnm where the faintest auroral light gives the characteristic green line spectrum; or, in other words, that spectroscopically dealt with, the slit being fine, the zodiacal light gives a background on which the faint auroral line (if aurora is present) may show itself as perfectly as thongh there were no zodiacal light at all. Hence Prof. Smyth's observation not only demonstrates the reel nature of the zodiacal spectrum, hnt shows how the mistake of those arose who have supposed the zodiacal and the aurora spectrum to be identical.

Curious Habit of a Snake.—Mr. Cope hed a specimen of *Cyclophis æstivus*, which had a curious habit of projecting its head and two or three inches of its body above the gronnd, and holding them for hours rigidly in a fixed attitnde. In this position it resembled very closely a sprout or shoot of aome given succulent plant, and might readily be mistaken for such by smell animals.—*Ibid.*

Something for the Wine Men.

We have been shown a device for filling double-headed tanks and casks, which seems to fill a want that has long existed emong wine makers. It is well known that it is difficult to completely fill a tank or cask so as not to leave any spsce between the contents and the top. Wine is deteriorated to a certain extent hy the surface hcing in contact with air, as it is nsually, under the present system of filling tanks. It is proposed to ohviate this difficulty by nsing a wooden tube, sheped like an inverted cone, whieh is inserted in the hung and ellowed to project twelve or fiftcen inches ahove the top of the tank or cask. It is made of oak, and can be driven in tightly, and then plugged in the usual manner, making, as it were, a projecting bung hole. By this means the wine is poured in until it comes to the top of the tuhe, when, of course, the tank or cask will be perfectly filled, and the air can have no access, so that the wine will not sonr. It can remain in the tank while the wine is fermenting, and the surface will not sour. The small surface presented hy the hole in the plug will prevent as much evaporation as usually occurs, and what space becomes vacant in the tuhe from this cause can easily he refilled.

This simple device for perfectly filling casks will be fully appreciated hy those who are aware of the difficulty heretofore existing, and several wine growers to whom it has been shown have given their opinion that it will fully answer the purpose required. Parties desiring to use this deviee, or to see it, can apply to the inventors, M. Fulda & Son, corner of Commercial and Drum street, in this city.

The Diamond Fields.—The Tucson *Citizen*, of the 15th, speaking of the *Bulletin's* article on the diamond discoveries and the location of the diamond field in the southern portion of the Territory, near the Sonora line, says: "In this, all ars quite positive that jonrnal is misinformed, and if the diamond stories are true in the main, we have many reasons for helieving thet the excitement is based upon stones found near, and probahly in the northeastern part of Arizona. We will go slow, end watch developments, neither urging any to go to or stay away from wherever they choose to believe the gema exist."

OUR MINING SHAREHOLDERS' DIRECTORY.

[Compiled Weekly from Advertisements in Mining and Scientific Press and other S. F. Journals.]

ASSESSMENTS.

Name of Co.	Location.	Secretary.	S.F. Office.	Assm't.	Levied.	Delinq't.	Sale.
Adams Hill C. M. Co.	Eureka Dist.]	W. W. Traylor.	419 Cal. St.	25.	Aug. 9.	Sept.12.	Oct. 2.
Arizona & Utah M. Co.	Washoe	C. H. Fish.	419 Cal. St.	$1 00.	Aug. 14.	Sept 17.	Oct. 7.
Arkansas M. Co.	Ely Dist. Nev.	Geo. Davidson.	734 Mont'gry St.	25.	July 23.	Aug. 30.	Sept. 23.
Baltimore American.	Gold Hill, Nev.	J. L. King.	411 Cal. St.	$1 00.	July 13.	Sept. 2.	Sept. 20.
Beach & Paxton.	Storey Co.,Nev.	Ed. Landers.	507 Mont'g St.	50.	Aug. 6.	Sept. 10.	Sept. 30.
BECKWITH M. CO.	Ely District.	Wm. H. Watson.	302 Monu'gry St.	20.	Aug. 19.	Sept. 28.	Oct. 23*
Bowery Cons. M. Co.	Ely Dist.,Nev.	Chas. E. Elliot.	419 Cal. St.	75.	July 9.	Aug. 15.	Sep. 9.
Calaveras G. M. C.	Calaveras Co.	T. B. Wingard.	318 Cal. St.	50.	Aug. 26.	Oct. 1.	Oct. 22.
Con. Antrim M. Co.	California.	H. Voorman.	411 Cal. St.	$5 00.	Aug. 9.	Sept. 24.	Oct. 16.
CONTOW'DCR'K M.CO.	California.	Jos. L. King.	411 Cal. St.	7.	Aug. 19.	Sept 26.	Oct. 18*
Daney M. Co.	Lyon Co., Nev.	Geo. R. Spinney.	320 Cal. St.	75.	July 3.	Aug. 6.	Aug. 26.
Empire M. Co.	Grass Valley.	S. Pinkham.	401 Cal. St.	$10.	July 22.	Sept. 7.	Sept. 27
Empire M. Co.	I. T	C. F Balcom.	426 Mont'gry St.	50.	Aug. 5.	Sept 6.	Sept. 30.
Empire M. Co.	Gold Hill, Nev.	W. E. Dean.	419 Cal. St.	50.	July 10.	Aug. 13.	Sept. 2.
Fallis S. M. Co.	Ely District.	A. Treadwell.	Merchants' Ex.	25.	Aug. 26.	Oct. 2.	Oct. 22.
Francis M. Co.	Mariposa Co.	T. F. Oromise.	409 Cal. St.	75.	Aug. 20.	Sept. 10.	Oct. 15.
Gillis G. M Co.	Tuolumne Co.	Daniel Buck.	331 Mont'gry St.	10.	July 20.	Aug. 19.	Sept. 20.
Gould & Curry S. M.Co,	Washoe.	A. K. Durhrow.	Merchants' Ex.	$15	Aug. 8.	Sept. 12.	Oct. 2.
Greenhorn G. M. Co.	Grass Valley.	J. F. Lightner.	438 Cal. St.	$1 50	Aug. 9.	Sept. 10.	Sept. 30.
Hale & Norcross S. M. Co.	Washoe.	J. F. Lightner.	438 Cal. St.	$5 00.	Aug. 22.	Sept. 26.	Oct. 16.
Hermes M. oC.	Ely Dist.	B. B. Minor.	411½ Cal. St	$1 00.	July 13.	Aug. 19.	Sep .14.
Ingomar S. M. Co.	Ely Dist.	C. S. Neal.	419 Cal. St.	50.	Aug. 12.	Sept.18.	Oct. 10.
Ivanhoe S. M. Co.	Ely Dist.	Daniel Buck.	331 Mont. St.	50.	Aug 10.	Sept. 10.	Oct. 8.
KINGAD PLAT M. CO.	Tuolumne Co.	H. H. Cornell.	220 Clay St.	$3 00.	July 17.	Aug. 23.	Sept. 24.*
Kinston M. Co.	Ely District.	L. Kaplan.	Merch ants' Ex.	50.	Aug. 26.	Oct. 1.	Oct. 21.
Kentucky M. Co.	Ely Dist., Nev.	J. P. Cavallier.	509 Cal. St.	50.	July 2.	Aug. 10.	Aug. 31.
Lane & Kurtz M. Co.	Brit. Columbia.	B. B. Minor.	411½ Cal. St.	$5 00.	July 23.	Aug. 26.	Sept. 14.
Lemon M. & M. Co.	Eureka Dist.	I. T. Millikin.	608 Merchant.	$1 50.	Aug. 14.	Sept. 17.	Oct. 21.
MARCELINA S. M CO.	Eureka Dist.	Chas. E. Elliot.	419 Cal. St.	30.	July 24.	Sept. 9.	Sept. 30*
Monitor Belmont M. Co.	Nye Co., Nev.	B. B. Minor.	411½ Cal. St.	$1 00.	Aug. 20.	Sept. 23.	Oct 14.
MORNING STAR M. CO.	Alpine Co., Cal.	O. H. Bogart.	Merchants' Ex.	$1 00.	July 12.	Aug. 20.	Sept. 14.
MINA RICA M. CO.	Placer Co.	Geo. R. Spinney.	320 Cal. St.	20.	Aug. 6.	Sept. 10.	Sept. 30.*
MT. JEFFERSON M. CO.	Tuolumne Co.	W. Clark.	419 Cal. St.	10.	July 25.	Aug. 12.	Sept. 16.*
National M. Co.	Nye Co., Nev.	B. B. Minor.	411½ Cal. St.	50.	July 4.	Aug. 19.	Sept. 14.
National M. Co.	Nye Co., Nev.	B. B. Minor.	411½ Cal. St.	50.	Aug. 21.	Sept. 23.	Oct. 14.
Nevada L. and M. Co.	Elko Co., Nev.	Wm. H. Watson.	302 Montgomery.	8.	July 18.	Aug. 31.	Sept. 19
NORMAN G. M. CO.	Amador Co.Cal.	Wm. H. watson.	302 Montgomery.	5.	June 27.	Aug. 1.	Sept. 17.
North Eureka.	Idaho.	C. F. Balcom.	426 Montgomery St.	50.	Aug. 22.	Sept. 28.	Oct. 18.
Ophir S. M. Co.	Virginia, Nev.	Jos. Marks.	Merchants' Ex.	$5 00.	July 17.	Aug. 21.	Sept. 11.
O. H. Treas.	White Pine.	D. A. Jennings.	401 Cal. St.	$1 50.	Aug. 9.	Sept. 16.	Oct. 8.
Page & Panaca S.M. Co.	Ely Dist.	L. Kaplan.	Merchants' Ex.	$5 00.	Aug. 14.	Sept. 19.	Oct. 11.
Pennsylvan a.	White Pine.	Daniel Buck.	331 Mont'gy.	$1 20.	Aug. 9.	Sept. 9	Oct. 6.
Phoenix M. Co.	Eureka Dist.	Chas. H. Fish.	419 Cal. St.	$1 00.	July 6.	Aug. 12.	Sept. 10.*
PIERMONT M. & M. OO.	White Pine.	J. W. Clark.	418 Cal. St.	60.	July 10.	Aug. 12.	Sept. 10.*
Pioche w. Ex. Co.	Ely District.	T. W. Colburn.	419 Cal. St.	30.	July 12.	Aug. 22.	Sept. 16.
Pride of Mountain M. Co.	Winnemucca.	T. W. Colburn.	419 Cal. St.	6.	Aug. 26.	Sept. 30.	Oct. 21.
QUAIL HILL M. & W. Co.	Calaveras Co.	T. F. Promise.	409 Cal. St.	$5 00.	Aug. 22.	Oct. 1.	Oct. 24.*
Red Cloud S. M. Co.	Ely District.	E. F. Clark.	331 Mont'gry St.	25.	Aug. 24.	Sept. 24.	Oct. 16.
Rising Star M. C o	Idaho.	Wm. Willis.	419 Cal. St.	$1 00.	Aug. 10.	Sept. 13.	Oct 4.
Sapphire S. M. Co.	Gold Hill, Nev.	J. F. Lightner.	438 Cal. St.	30.	July 16.	Aug. 17.	Sept. 6.
SILVER SPROUT M. Co.	Kearsarge Dist.	T. B. Wingard.	318 Cal. St.	50.	Aug. 26.	Oct. 8.	Nov. 8.*
Silver West Con. M. Co.	Eureka Dist.	F. E. Bunker.	Monte'gry Block.	50.	Aug. 26.	Oct. 15.	Oct. 30.
SPRING MT. TUNNEL.	Ely Dist., Nev.	J. M. Buffington.	419 Cal. St.	30.	July 9.	Aug. 16	Sept. 7.*
Sterling M. Co.	Ely Dist., Nev.	H. C. Kihhe.	419 Cal. St.	50.	July 15.	Aug. 21.	Sept. 12.
Tallulah M. Co.	Humboldt,Nev.	Geo. A. Hill.	18 Monig'ry St.	$3 00.	Aug. 26.	Sept. 24.	Oct. 15.
Tecumseh G. S.&M.Co.	Calaveras Co.	F. J. Hermann.	634 Wash'n St.	15.	Aug. 9.	Sept. 12.	Oct. 7.
Tellurium G. & S. M.	Amador Co.Cal.	Wm. H. Soery.	K'ny & Clay.	$1 00.	July 22.	Aug. 23.	Sept 16.
Tehama Cons.	Schell Creek.	W. W. Stetson.	414 Cal. St.	$2.00.	Aug. 2.	Sept. 14.	Oct. 5.
Union Cons. S. M. Co.	Virginia, Nev.	B. M. Gunn.	Merchants' Ex.	50.	Aug. 7.	Sept. 10.	Sept. 30.
VICTORIA & IMP. M. CO.	Utah T.	Wm. H. Watson.	302 Montg'ry St.	10.	Aug. 14.	Sept. 18.	Oct. 12.
WINNEMUCCA CHIEF.	Nevada.	T. F. Promise.	409 Cal. St.	15.	June 19.	July 30	Sept. 16.*
WM. PENN CONS.	Nevada.	J. F. Pope.	6 Mont'gry St.	15.	July 3.	Aug. 5.	Sept. 2.*
Yule Gravel M. Co.	Placer Co. Cal.	W. H. Watson.	302 Mont'gry St.	25.	Aug. 3.	Sept. 5.	Sept. 15.

MEETINGS TO BE HELD.

Name of Co.	Location.	Secretary.	Office in S. F.	An'l or Sp'l.	Date.
Admiral Nelson T. & M. Co.		R. H. Sinton.	Montg'ry St.	Annual.	Sept. 2
California Tunneling Co.		L. Yarieas.	425 Kearny St.	Special.	Sept. 2.
Cosala S. M. Co.	Mexico.	Chas Baun.	510 Battery St.	Annual.	Sept. 16.
Golden Chariot G. M. Co.		S. W. Collins.	906 Market St.	Annual.	Sept. 28.*
Oakville Quicksilver M. Co.	Napa Co.	W. H. Mott.	432 Montg'y St.	Annual.	Aug. 31.
Pacific Mining Tunnel Co.		R. H. Sinton.	Montg'ry Block.	Annual.	Sept. 2.
Rising Star G. M. Co.	Nevada Co.	B. M. Gunn.	Merchants' Ex.	Annual.	Sept. 5.
Succor M. & M. Co.	Washoe.	W. H. Watson.	302 Montg'ry St.	Annual.	Sept. 2.
Victoria & Imperial T. M. Co.		W. H. Watson.	302 Montg'ry St.	Annual.	Sept. 12.
Virtue G. M. Co.		C. F. Balcom.	426 Montg'ry St.	Annual.	Sept. 2.

LATEST DIVIDENDS—Within Three Months.

Name of Co.	Location.	Secretary.	Office in S. F.	Amount.	Payable.
Belcher M. Co.	Washoe.	H. C. Kihhe.	419 California St.	$3.00	Aug. 10.
Black Diamond Coal Co.	California.			½ per cent,	June 28.
Crown Point G. & S. M. Co.	Washoe.	C. E. Elliot.	419 California St.	$3 00.	July 5.
Eastport Coos Bay Coal.	Oregon.	I. L. Pool.	Merchants' Ex.	$5 00.	Aug. 12.
Keystone Quartz M. Co.	California.	L. Vesaria.		50.	July 10.
Mahogany G. & S. M. Co.	Idaho.	T. J. Owens.	402 Mont'gry. St.	$1 50.	Aug. 7.
Meadow Valley M. Co.	Ely Dist., Nev.	T. W. Colburn.	419 California St.	$1 00.	June 20.
Raymond & Ely M. Co.	Ely Dist., Nev.	A. J Moulder.	419 California St.	$7 00.	Aug. 10.
Pioche S. M. Co.	Ely Dist., Nev.	C. E. Elliot.	419 California St.	$1 00.	Aug. 10.

* —* Advertised in this journal.

Stock Sales for Week ending Aug. 29—S. F. Stock & Ex. Board.

[Entered according to Act of Congress, in the Office of the Librarian of Congress, Washington, D. C., 1872.]

NAMES OF CO'S.	Foot.	Shs. in ft.	FRIDAY. Shs	Prices.	SATURDAY. Shs	Prices.	MONDAY. Shs	Prices.	TUESDAY. Shs	Prices.	WEDNESD'Y Shs	Prices.	THURSDAY. Shs	Prices.	Tot'l Sh's Sold.	Aver.	Dollrs Actrnd
Adams Hill	6400	8	250	2 @ 2½	100	2	675	1¾@ 2	50	1½	200	1⅝@ 2	160	2 @ 2½	1530	1 93	
Alpha	300	20	16	35 @40	200	40 @41	80	36½@39½	165	36½@38	140	39 @39½	195	40 @44	935	39 24/4	
Alps	800	37½	960	4¼	300	4¾@ 4½	130	4½			200	4	95	4¼	1685	4 31	
Am. Flag	2600	11½	520	16¾@17½	230	17½@18	660	16 @18½	490	18 @19	700	18 @18½	880	17¾@18¾	3480	17 77	⅜
Ariz'Utah	1500	19½			50	11½					100	11	150	11½	300	11 50	
Belcher	1000	10	780	113 @116	230	117 @121	1130	100 @116	525	104 @106	470	106 @109	380	113 @118	3520	12 70	2½
Baltimore	1200	20	410	2½@ 2¾	170	3	555	3	245	2¾	20	3	175	3¼	1575	2 89	½
Balt'er Am	1200	20	225	2½@ 2¾			50	2½			10	3	100	3	385	2 72	⅜
Bowery	1000	30	170	3	100	3			75	3					345	3	
Bacon			10												10	50	
Buckeye					100	3 @ 3¼	130	3	400	2½					500	3 06	
Best&Bel'r	224	100															
Belmont			130	6¾@ 6¾			220	6 @ 6¾	1100	5¾@ 5¾	200	6	250	6 @ 6¼	1900	6	⅛
Chollar	3800	10	332	62 @65	400	70 @79	45	71 @73½	560	63 @70	191	67 @70	215	68 @72	1893	69 20	7
Caledonia	3000	4	620	42 @47	370	46 @49	680	44 @46½	625	47 @49	715	43 @45½	2520	42 91	5555	45	2½
Ca Virginia	1160	20⅝	455	25 @27	165	25½@26	485	25 @26	150	21 @23	220	22½@24	285	.6 @28¾	1769	24 97	1¾
Confidence	130	192	680	8 @10	410	9½@10	725	8¾@ 9¾	395	7¾@ 8½	245	8¾@ 9	140	8¾@ 9	2595	8 93	1
Crown Pt.	600	166⅔	110	119 @121	85	120 @121	160	110 @123	265	108 @114	552	110 @119	625	116 @135	1797	118	14
Central	70	357															
Calaveras	2200	6⅔															
Condor			800	2½@ 2¾	160	2½@ 2¾	400	2½@ 2¾	100	2½@ 2¾	170	2½@ 2¾			1630	2 57	
Chapman	12	1650	1¾@ 2		200	1⅞	900	1¾@ 1⅞	50	1¾			150	2½@ 2¾	2850	1 98	⅜
Ch'f of Hill	2000				290	5¼	50	5¼	280	5 @ 5¼	190	5@ 5¼	980	6 @ 6¾	3390	5 38	1
Daney		70	10	1¾	290	1¾@ 2	310	1¾ @ 2	310	1¾ @ 1¾	280	1¼@1¾			1200	1 61	
Eureka Co.	1000	20	565	29¼@21	1335	29 @20½	855	19 @20	820	17¾@18½	1020	17 @18½	695	19 @20	5310	19 27	1
Eureka	1680	512			30	15									30	15	
Exchequ'r	400	20	450	14 @15	80	16 @16½			20	14			20	15	20	16 @16½	590	15	1½
Eclipse	10	357	350	12½@14	535	13 @13¾	780	11 @11½	180	10¾@11¾	100	11	80	11½	2045	11 77	2½
Empire M.	720	16	850	10 @10¼	625	8 @10	2020	9 @ 9½	1685	8 @ 8½	1025	8½@ 8¾	600	8½@ 9	6725	8 96	1¼
Excelsior	4500	2⅝	600	10			50	12½	50	14			200	12	900	12 16	
Gould & C	1200	4	84	127 @150	80	135 @138	132	135 @147	32	145 @130	28	130 @140	10	135	366	13 29	15
Golden C.	750	14½	20	9¼@11	30	9	60	9½	10	10			50	10	170	9 87	1
Globe	1600	12½	100	2			100	1¾					50	2	423	1 85	⅛
Gila			30	15 @10¼											30	15	
Hale & Nor	400		327	52½@60	88	53 @70	55	63 @65	90	67 @63	35	64 @65	475	68 @82	1070	64 37	22
H & Hunt.	3600	8½	350	4¾@ 4¾	1695	4¾@ 5	590	5¾@ 6	3200	6 @ 6¾	2150	4¾@ 5¾	1780	5¾@ 6	9765	5 52	1¼
IdaElmore	1200	17½	100	15			50	12½					120	13 @13¾	270	13 56	1½
Imperial	184	543½	2120	9¾@10	600	9¾@10	2265	8 @10¼	1835	7½@ 8½	920	8¾@ 9	550	9¼@ 9¾	8490	9 01	⅝
Ingomar	1000	30	3	1¼					100	1			200	1¼	650	1 12	⅜
Independ't	2000	15	140	1	250	1 @ 1¼	110	1¼							500	1 12	
Julia	3000	7			80	4¾	170	4¾@ 5					80	4½	330	4 75	
Justice	85	21	200	9 @10	365	11 @11½	105	11¼@12			35	11 @11½	200	10¾@12	910	10 97	2
Kentuck	1800	14	50	240 @250	5	255			210				50	250	65	4 40	
Kentuck'cr	1200	20	530	6 @ 7	580	7 @ 7½	255	7 @ 7¼	705	6 @ 6¾	350	6½@ 7¼			2685	6 70	
Mammoth	1800	20							50	50	100	50			150	50 59	
Meadow V		2½	1265	22 @23¾	644	23 @24	960	23¼@23¾	1420	23¼@23¾	1090	22¾@23¼	4180	25 @26	9859	23	3¼
Mahogany	720	13⅔	125	13½@14			50	12	220	11½@12	1520	13 @14	130	14 @14½	2045	13 16	½
Ophir	240	M.	210	38 @40	255	38 @40	50	38 @24	310	38 @34	30	38 @38	85	38 @38	868	38	
O. H. Treas	800	26⅔	400	5¼@ 5½			70	5½					170	5 @ 5¾	640	5 37	
Overman	1200	10⅝	250	70 @73	140	74 @75	150	72 @77	240	65 @66	165	66 @66¾	400	71 @78	1345	71 12	5
Occidental	800	12½															
Pioche	1000	20	1160	35 @36	470	35½@36	795	35 @36½	1210	29 @32	470	33 @30½	225	31¾@34	4330	30 89	2
Page&Pan	2400	16⅔					250	2	450	2	400	2	250	2¼	1350	2 12	
Pea Vine			585	2¼@ 1⅝	300	1½			1100	1¼			1850	1¼	3835	1 27	⅜
Phœnix	4000	7¼	50	3¼	900	5¾@ 4¾	450	4½@ 4¾	685	4	100	4	2-5	4¼@ 4⅞	244	4 34	¼
Ray. & Ely	800	20	165	170 @172	85	170 @172	150	172 @175	200	170 @172	110	167 @168	205	169 @172	915	170 79	½
Savage	1000	30	370	85 @95	185	95 @100	375	84½@102	240	85 @90	85	94 @97½	195	101 @105	1450	93 58	10
Sg. Belcher	160	40	165	90	80	89 @91	80	82½	65	77½	180	76 @79			550	83 67	
Sierra Nev	3000	7½	295	12½@13½	120	13 @13½	415	13	100	11½@12	110	12½@13	160	13½@10	1210	12 90	½
Succor	1600	3	140	4½	280	4¾@ 4¾	275	4¼	50	4	25	4½	50	4¾	820	4 35	¼
Silver Hill	1800	12⅔					125	5½@ 5¾	210	5	200	5½@ 5½			535	5 40	
St. Patrick	6600	30⅔															
S. Chariot	20	250	200	1¾			500	1¾					550	2 @ 2⅛	1250	190	⅜
Trench	5400	10	50	16											50	16	
Wash&Or'l	200	150	670	4⅞@ 5¼	100	5	925	5½@ 5½	665	5 @ 5¾	85	4½	80	4¾@ 5	2125	502	¼
Woodville		20			200	2⅛	300	2¼			470	2	470	2	970	316	
Yel. Jacket	1200	25	385	112 @119	1250	120 @124	290	117 @123	50	108 @110	145	111 @117	110	115 @118	1195	16 25	
Yule Grav.	400												95	1	95	1	

— Notes.—; Nearly. ; Over.

S. F. Stock and Exchange Board.

San Francisco, Aug. 29, 1872.

The sales at the Board for the week ending August 22d, aggregate $3,057,000. Stocks have fluctuated during the week somewhat more than usual, but there is some advance over last week's prices which were very weak. Prices have, however, been generally low. On Friday the market was heavy again, and a further decline from previous day's sales was apparent. On Saturday there was some improvement though not marked. The rise was not sustained on Monday; the market opened generally weak. On Tuesday it was still weak and irregular, and most descriptions showed a decline. Wednesday there was some improvement though the advance was slight. To-day the market was much better and the advance in prices was more general, as will be seen by our Stock tables.

From the Belcher the sum of $21,000 was shipped on the 20th and $51,146 on the 22d.

The Chollar Potosi, during the week ending August 24th, turned out and sent to mill 1,868 tons of ore, assaying $42.24 per ton. Operations were suspended in the bottom of the shaft on account of the water, but work now goes on steadily and the extraction of ore is resumed. The ore producing stations are improving.

The Crown Point report, dated August 24th, states that they are turning out over 400 tone daily. On the 1,000-foot levcl tbey are working two floors; on the 1,200-foot level are working first to eighth inclusive; all look well. Tbe winzes from the 1,200 to 1,300-ft. level are free of water and they are sinking as fast as possible. The south winze is down 80 feet; the east winze 76 feet; no signs of west wall. The aseays in the two winzes run, 23d, $150 to $235; on the 22d, $405 to $426. The 1,300-foot nortb drift is running to the Yellow Jacket through the Kentuck; making good progrese in south drift.

Report from the Savage, for week ending August 24th, sbows that 1,244 tons have been extracted worth $20,96 per ton; 1,144 tons were sent to mill and 195 tons are on hand.

Raymond & Ely.—Bullion shipped on the 20th $34,333, on the 24th $35,247, on the 27th $35,981; making a total that far in August of $311,739, equal to $11,545.88 per day.

Pioche.—A letter of the 21st eays: "Ore in the first level etopee is two and a half feet wide, assaying $196—$26 higher than at last report. Have developed a fine body of chloride ore in the prospecting raise from the old eecond level, which is 205 feet from the surface. Average eamples from this body assay $250. The incline shaft helow the fifth level has a good start, and depth will he obtained aa faet ae the ground will admit." Since then the ore body in the second level has increased to four feet, assaying $328. On the 28th inst. it waa 3½ feet wide, assaying $316. Bullion shipped on the 29th, $14,208.

The sum of $1,111 was shipped from the Minnesota on the 19th. The Kentuck sent down $2,505 on the 19th. The Sierra Nevada produced 339 tona of ore last week and the yield of 833 tons crushed was $3,621,41. The Eureka (Grass Valley), mine cleened np last week from 15 stamps, 700 ouncea of amalgam. The ledge of this miue ia getting larger and ahowing more gold. The Eureka Consolidaten shipped 923 tons to the furnaces last week; 896 tona were reduced and 1,600 tone are now on hand.

Assessments were levied during the month of August hy mining companiea as follows: Adams Hill, Eureka Dist., 25 cents; Arizona and Utab, Washoe, $1; Beacb and Paxton, Washoe, 50 cents; Beckwith, Ely District, 20 cents; Consolidated Antrim, California, $5; Cottonwood Creek, California, 7 cents; Calaveras, Calaveras Co., 50 cents; El Dorado, Amador Co., 25 cents; Empire, Idaho, 50 cents; Francie, Mariposa Co., 75 cents; Fallia, Ely Dist., 25c; Gould & Curry, Washoe, $15; Greenhorn, Grasa Valley, $1.50; Hale & Norcross, Washoe, $5; Ingomar, Ely Dist., 50 cente; Ivanhoe, Ely Dist., 50 cents; Kinston, Ely Dist., 50 cents; Monitor (Belmont), Nevada, $1; Mina Rica, Placer Co., 20 cents; National, Nye Co., Nev., 50 cents; North Oro Fino, Idabo, 50 cents; Original Hidden Treasure, White Pine, $1.50; Page & Panaca Ely Dist., $5; Pennsylvania' White Pine, $1.20; Pride of the Mountains, Nevada, 6 cents; Rising Star, Idabo, $1; Red Cloud, Ely Dist., 25 cents; Silver West Cons., Eureka Dist., 50 cents; Tecumseh, Calaveras Co., 15 cents; Tehama Cons., Schell Creek, $2; Tallulah, Humboldt, Nevada, $3; Union Cons., Washoe, 50 cents; Victoria and Imperial, Utah, 10 cents; and Yule Gravel, Placer Co., 25 cents.

Dividends for the month amount to $557,000 from four mining companies, as follows: Belcher $3, amounting to $312,000; Raymond & Ely, $7, amounting to $210,000; Mahogany $1.50, amounting to $15,000; and Pioche $1, amounting to $20,000. Beside thie two coal companies, the Black Diamond and Coca Bay paid dividends amounting to $27,000—$25,000 for the former, and $2,500 for the latter. The Belcher dividend of $3, is equal to $30 on tbo old stock. In the same month last year eight companies paid dividends amounting in the aggregate to $359,300, as follows: Crown Point $120,000; Chollar Potosi, $28,000; Eureka Cons. $50,000; Meadow Valley, $60,000; Raymond & Ely, $30,000; Redington Quicksilver $6,300; Yellow Jacket $60,000; Uule Gravel $5,000. The amount disbursed from four companies this year exceeds that disbursed by eight last year, during the same month, hy nearly $200,000. The Raymond & Ely is the only one that paid a dividend in August last year and this year too. The Crown Point dividend was passed this month owing to accident in the mine or the amount would have been larger. In August 1870, the mining companies only disburaed $131,500; the iucrease from year to year is very satisfactory.

Mining Summary.

The following is mostly condensed from journals published in the interior,in proximity to the mines mentioned.

California.

ALPINE COUNTY.

At Work.—Alpine *Chronicle*, Aug. 17: On Monday workmen commenced overhauling the Exchequer quartz mill, preparatory to rebuilding.

M. & N. W. Co.—Monitor *Miner*, Aug. 17: Tbe down move on the ore body found in tbe No. 6 drift of works below Monitor No. 3 tunnel, is proving better than anticipated. The shaft is down about 20 ft., and soft ore assaying from $18 to $159 per ton is taken out from the whole size of the shaft, and extending indefinitely.

AMADOR COUNTY.

The Mines.—Amador *Dispatch*, Aug. 24th: C. Petere has reeumed operations on his quartz mine near town. Two S. F. Companies are about to commence operations on an extension of the same in a short time.

CALAVERAS COUNTY.

Clean Up.—Calaveras *Chronicle*, Aug. 24: Eight tons of quartz recently crushed in the arastra at the Horse Thief paid $60 per ton. The ore waa second grade, and the Co. have out quartz that will yield $200 per ton.

Up Country.—Herryhausen Bros. are running levele at the depth of 100 ft., and stoping. The vein is from 6 to 10 inches; 18¼ tous of aesorted ore from the new diecovery of S. Smith & Co., yielded $745. The vein is fully 5 ft. wide; 3 feet of it being two grade ore. Levels are being run in the Grasshopper; the main chimney will he reached in a few days. Tbe Prussian Hill mine and mill are in full blast. The Good Hope is crushing ore worth $20 per ton. The Josephine ledge is 18 inches wide; a test lot of 4 tons of rock worked $26 per ton. The shaft of the Ohio Cons. has attained 90 ft. The etopes of the Blazing Star are turning out considerable $100 rock. The owners intend einking a new working shaft. The north level of the Bartolo keeps improving; in 70 ft.

EL DORADO COUNTY.

Pilot Hill.—Folsom *Telegraph*, Aug. 24: The minere generally are doiug well. The uew discoveries in quartz are making things look up.

KERN COUNTY.

Prospecting.—Havilah *Miner*, Aug. 17: A party are now equipping, and will start out on an extensive tour in a few days.

Air Shaft.—The shaft at Kernville haa reached the shaft of the Sumner ledge. Preparations to extract ore, at the bottom, are being rapidly puahed.

LAKE COUNTY.

Coal.—Napa *Reporter*, Aug. 24: Some time ago J. Watson, discovered a vein of coal 4 miles aouthwest of tbe Knoxville mines. Late developments ehow the prospects flattering. There are 2 veins ahout 100 yards apart. In the opening made in one ahout 7 ft. from the aurface the vein is 10 inches solid. Stratas run out 4 or 5 ft. from this each way. Work is being vigorously pushed.

NAPA COUNTY.

Washington.—Vallejo *Chronicle*, Aug. 24: In the Washington quicksilver mine a rich strike waa made last week. The ore was struck iu a cut, in 60 or 70 ft. There is no indication of it "petering out."

NEVADA COUNTY.

Quicksilver.—G. V. *Union*, Aug. 24: J. R. Nickerson is prospecting near the mouth of Wolf creek. Yesterday, at the depth of 14 ft., he etruck quicksilver ore in fair quantity.

Eureka.—A gold bar worth $10,000 was brought into town on the 20th inst., after a 2 weeks' run.

Hope Gravel Mine.—A clean up yeeterday, after a run of 8 days, yielded 160 ozs. of gold.

Struck It.—The new discovery in the lower workings of the Pittsburg, gives promise of rich results. A winze aunk from the lower level hae, at the depth of 800 ft., opened upon the richest hody of ore ever found in the mine.

Jim.—A few daya ago the Co. cut through a fine ledge 3 ft. in width.

Granityille.—Nevada *Transcript*, Aug. 24: It is the intention of tbe Erie Co. to erect extra hoisting and pumping machinery in a short time. This ledge is from 15 to 20 ft. wide, and shows considerable free gold. They are sinkiug the main shaft, and will soon open another level. The Ansho Co. have 3 shifts working in their tunnel.

PLACER COUNTY.

Rich.—Auhurn *Stars and Stripes*, Aug. 22: Week before last the Salsig Co. had 20 tons of rock crushed and tbe yield waa $1,250 or over $62 per ton.

PLUMAS COUNTY.

Struck It.—Quincy *National*, Aug. 24: Morris Smith, at Badger Hill, hae struck rich pay gravel in hia new tunnel which prospecte from 50 ceuts to $3 to the pan.

Greenville Co.—The new mill being put up is nearly completed. It has 24 atamps, and will crush 50 tons per day.

Genesee.—The rock on which the mill is running yields an average of $25 per ton, and the bottom of the incline shows a good vein of very rich rock. The main tunnel is being pushed rapidly and will strike the ledge at 185 ft.

SAN DIECO COUNTY.

Bullion.—San Diego *World*, Ang. 16: W., F. & Co. shipped yesterday, gold bullion, chiefly from the Julian and Banner Dists., valued at $3,484.

SANTA CLARA COUNTY.

McLeod Dist.—Gilroy *Advocate* Ang. 24: The Gilroy Co. on the Los Beaver ,ledge have struck a very rich vein of ore. A tunnel has heen run in 18 ft.

Work is being prosecnted on the Gemez claim, and a vein of very rich cinnabar, 8 inches wide, was crossed in the shaft which is heing sunk, from which several hnndred pounds of ore was extracted.

The Santa Cruz Co. have struck a very fins vein of cinnabar in their tunnel, said to he 2 ft. wide.

TRINITY COUNTY

Weaver Creek.—Weaverville, *Journal*, Aug. 24: The Weaver Creek Flnming Co. are busy preparing to extend their flume np the creek.

At the mouth of Democrat Gulch, Ramsey & Co., have sluiced off a portion of the old creek bed and are shoveling it into hoxes. Below this a few hundred yards Silander & Estes have re-commenced work in the bed of the creek.

TUOLUMNE COUNTY.

$1,400 per Day.—Sonora *Independent*, Ang. 24: T. Farrier and the Reed Bro's prospecting for quartz peckets on the north side of the Stanislaus, were rewarded last week by finding a lode of decomposed quartz, from which they took, in one day, abont $1,400, and in 3 daye over $2,000, with plenty of the richest kind of quartz in sight.

Strike.—Last week an exceedingly rich strike was made by Whitiug, Gorham & Co., in their claim at Saw Mill flat. They struck a pocket in the chute they had been following, and in 3 days took out $1,648, with plenty mere in eight. On Weduesday, after a hlast, they picked ont in a pan, over $1,000 in gold, hesides the pieces of rock, which were literally studded with the preeious ore.

$1,000 to the Ton.—Sloan & Ham have just run a ton of rock from their lede throngh their arastra, and obtained therefrom nearly $1,000. They have some 5 or 6 tons of this rock eut, and plenty more in sight.

Nevada.

ELKO COUNTY.

Bullion.—For Jnly the ehipment from Cope was $21,344.85.

EUREKA DISTRICT.

Silvea Lick Cons.—Eureka *Sentinel*, Ang. 20: Capt. Adams ie working 8 men, and raising about one ton of ore per day to the man. There are over 200 tone on dump, estimated to mill $150 per ton.

Pioneer Cons.—The ledge is large and well defined, and there are about 350 tons of high grade ore on dump.

In Opeeation.—Capt. Taylor'e Silver West furnace is in operation and working to a charm.

Home Ticket.—A magnificent body of ore hes just been developed.

Bio Strike in Rominson Dist.—The discovery is in the mountain range 6 milee southwest of Robinson. A chunk of solid horn eilver, weighing 40 Bs., was extracted, and free milling ore of exceedingly high grade eceme ahundant.

ELY DIST.

Bullion.—Pioche *Record*, August 17: Dnring the past week W. F. & Co., shipped hullion valued at $75,139.34,

Peavine.—Shaft down 100 ft., and sinking etill. At 30 ft. from the surface, a drift has been rnn in 45 ft. on mineral the entire distance, averaging in width from 15 inches to 2 ft. of good free milling ore. On 80-ft. level a drift hae been run 85 ft. from the shaft, the ore seam averging from 8 inchee to a foot in width, the entire distance, aseaying well. In the face of this drift the ledge is widening and ehowing extremely well. Assaye from the ere on 30-ft level show from $191.54 to $412.91. Those from the 80-ft level show from $12 to $30 per ton.

Aztec.—Shaft down 135 ft. and sinking progreeses. At this depth a large hody of fine ore was cut into, showing ahout 8 inchee in width of free milling ore, of a very high grade. The width of the ledge ie 18 inches.

Ingomar.—It is expected that einking of the shaft will be resumed to.day.

Mocking Bian.—Sinking of shaft continues good progress being made. Assays made daily during the past week show an average of $173.-34 per ton.

Page & Panaca.—Sinking of shaft continues and is down 350 ft., timbered throughout.

Ivanhoe.—In the old shaft drifting at the 225 ft. level, vein 6 ft. wide. Will resume einking to-morrow. New shaft down 115 ft., with vein showing 4 ft. iu width. Will shortly erect hoisting works.

American Flag.—Cleaning out dirtin shaft. Stoping continues on uppor level.

Bowény.—Working lower ehaft, hut euspended work on the upper one. Most of the machinery for the new hoieting works is on the ground.

Huhn & Hunt.—Drifting into hill continuee.

Amelia.—Sinking shaft, down 142 ft,, with ledge showing 2 ft. wide aud carrying mineral throughout. Assays show from $102 to $110.

Alps.—Sinkiug of new shaft continuee. Will commeuce timhering during the coming week.

Condon.—Ore in face of drift continues to improve, and are raising the eame to surface. The ledge is widening.

Kentucky Rifleman.—Sinking shaft in hard grounnd. Ledge has widened ont to fully 3 ft. with mineral appearing in hnnches.

Kentucky—Have broken into quartzite in the shaft.

Haapea.—Shaft down 80 ft., showing over 2 ft. wids in the bottom.

Kingston.—Drifting on 250 ft. level continues, and is in 45 ft. with ledgs matter coming in on face.

Phenix.—Ore in shaft centinues to come in hunches, aud assays from the sams show well.

Stirling.—Drift is being pnshed ahead, and lsdge shows well.

Chief of the Hill.—Working on the upper levels, nnd raising ors.

Newark.—Hoistiug works in suecessful operation, and sinking continnes.

Chapman.—Working on stopes and raisiug ore.

HUMBOLDT.

Bullion.—Unionvills *Silver State*, August 24: Amount shipped from the Arizena since our last issus, was $6,127.

Central Dist.—Work is being prosecuted on the Teamster. The ledge is from 2 to 4 ft. wide, and frse gold is perceptible to the naked eye all through the reck.

Relief Dist.—The Central Pacific will nverags 3 ft. of good ore. They shipped, last week, 3 tons of first class ore of the assayed valne of $600 per ton. The mill, a 5 stamp one, ie running eteadily, and last week's run yielded $3,500. A ferce of 27 men is employed.

New Dist.—Rich mines hnve been discovered nnd a new district organized, southwest of Battle Mt.

Rye Patch Station.—The Butte Co.'e Mill and Chlorination furnace were started on last Monday.

A fine hody of ore was struck in the Butte last week.

REESE RIVER.

Reese River.—Reese River *Reveille*, Aug. 17:

Saybrook.—A large ledge of magnificent ore was opened in the 150 foot east level last week.

Star of Nevada.—The tnnnel is going ahead steedily. It is the intention of the Ce. to etart their shaft eeen.

Greve Tunnel.—The working ferce will he doubled next week.

Lane and Fuller.—(Pacific Co.)—A eteady improvement at all points; large force of miners; increasing quantities of ore coming out and being shipped to mill for reduction.

Piute.—Working en a limited scale; getting geed ore.

Morgan and Muncey. The air has been failing lately; and a winze is heing sunk from the 300 ft. east level to connect with the old workings of the South America.

Isabella.—Lots of good stuff coming out of the incline.

Lone Star.—The new hoisting apparatus is completed and running.

Iowa Tunnel.—Fine ore is coming out of all the levels, and the different holding leases are doing well.

Savannah.—This ehaft ie now down 150 ft.; hard rock.

Freehold.—The ehaft is down 20 ft. helow the first level; will he continued 75 ft. further, when a new level will be run. Work is being pnshed night and day. There are over 20 tone of good ore in the ore house.

South America.—The 300 ft. level is heing cleaned out preparatory to work on the ledge.

C. S. Baker.—The drift from the shaft to the old incline is completed and the latter is being put in condition to work the mine through.

Belmont.—Belmont Co.—Have started their new levele 60 ft. below water, and favorable prospects. Working 25 men.

Monitor Co.—New tunnel in 200 ft. and going ahead; stoping out very fine ore ahove the main tunnel level. Working 30 men.

El Dorano Co.—Have commenced stoping in the 340 ft. level, both north and south of the main incline. Stoping out very rich chloride ore from the main tunnel level in the Arizona. Working 30 men.

Monitor Mill.—Progressing as faet as possible.

El Dorado Co.'s new mill is being shipped from Battle Mt.

WASHOE.

Local Summary.—Gold Hill *News*, Aug. 24:

Union Cons.—A tunnel has been run under the old Colwell croppings, 230 ft. in length, cutting the ledge 200 ft. from the surface. The face of the drift is in 6 ft. in solid quartz, with good indications of ore.

Crown Point.—Daily yield 430 tons from the 1,100 and 1,200 ft. levels. The ore breasts are looking very well, and the eupply ie daily increasing.

Belcher.—Daily yield, 200 tons from the 1,000 and 1,100 ft. levels. The maiu inclue is being continued down, aud the station for the 1,100 ft. level is being cut and opened out for regular ore delivery. The main drift east from the incline at the 1,000 ft. level ie in 195 ft. and the north drift from it 45 ft. The north drift from the ore hody in the 1,000 ft. level, to connect with thie last mentioned drift is in 200 ft. and is heing pushed rapidly in fine ore, working 4 6-hour ehifts of men.

Hale & Norcross.—Producing 80 tons of ore per day, one-half of which is from the upper levels. The work of exploration is being continued in the 1,500 ft. or loweet level; this level is explored from the east to the west wall by crose-cnts which crose the vein at a distance of 75 ft. apart. The sinking on the incline is be-being continued day and night with six hour shifts.

Cons. Virginia.—On the 500-ft. level the south drift is being run south in qnartz of low grade; they ars also cross-cutting east and west at a point 200 ft. from the seutheru boundary. On the 1,100-ft. level the west cross-cut is in 50 ft. from the north drift.

Savage.—Ths incline is down 140 feet, in much better sinking than hertofore. Ths south drift of the 1,500-ft. level is pnshed ahead, to connect ths winze from the 1,400-ft. level; ths free in good picking greund.

Gould & Cuary.—The inclins is dewn 129 ft. below the 1,500-ft. level, in fair sinking ground. The north drift, 8th station, is in 449 feet in a mixture of quartz and porphyry. The east drift, 10th station, is in 238 ft., the faes in porphyry. The south drift, 10th station, is in 160 ft. in hard porphyry. The east eross-cut from the north drift, 10th station, is in 11 ft. in ths harren quartz.

Ophir.—Ths west drift on ths 700-ft. lsvel is in 115 ft. in ledgs matter, a mixture of clay and quartz. The shaft is dewn 130 ft. below ths 1,300 ft. lsvel, in good working ground. Ths north drift on the 1,100-ft. lsvel is in 455 ft. in hard blasting ground.

Kentuck.—Daily yield 45 tons from the old workings. Work is resumed at the 1,300-ft. levsl, and drifting to complets the 20-ft. lacking to make the connection with ths Yellow Jacket drift.

Chollar-Potosi.—Daily yield 180 tons, worth $40 per ton. The Blue Wing, Belvidere and ether ore breaste are yielding well, with a decided improvement in the average assaye for the week.

Silver Hill.—This Co. is engaged in cutting out and timbering their new ehaft, and ie running west to cut the new ore vein.

Julia.—All work, einking and drifting, is stopped for the present. The new engine is heiug placed in positien.

Baltimore.—Shaft dewn 230 ft. in good working ground. At 400 ft. a drift will he etarted for the ledge.

Overman.—The ehaft is dowr 51 ft. helow the 1,100-ft. level and making feir progress. The main west drift is in 560 ft. Work ie resumed in the face, the ground working well with favorable indicetions of eoen etriking the main ledge.

Beach and Paxton.—Thie mine hae again resumed work after lying idle several years.

Impebial-Empiae.—The incline is nearly down to the 1,700-ft. station. The ore hedy in the winze on the 1,600-ft. level is eut off by a heevy clay seem. Sinking the winze continues. The south drift on the 1,600-ft. level is being thoroughly timbored, preparatory to driving ahead.

Sierra Nevada.—Daily yield 50 tons of good milling ore. Counection has been made hetween the west drift of the raise in the middle vein, aud the winze from the upper mine, which givee a circulation of good air.

Utah.—The sinking of the main shaft is being continued day and night with 3 shifts of men.

Justice.—Yielding good pay ore from the Waller Defeat section. The drift west from the 400-ft. etation of the main shaft ie in a little over 100-ft.

Knickeaeocker.—Drifting at the 400-ft. level ie resumed, and the ledge ie thought to he not far off. The ehaft is down 85 ft. below the 400-ft. etation, the hottom showing streaks of quartz and clay.

Arizona and Utah.—The contract for sinking the new shaft was let, and ground broke on the work last Friday.

Yellow Jacket.—Daily yield, 20 tons, from the 900 and 1,000-ft. levels. The drift north at tho 1,300-ft. level ie driving ahead, and the drift east from the inclinc at the 1,500-ft. levelie in 75 ft.

Sutro Tunnel.—Total length 3,033 feet; hetter progress made, rock in the face of the tunuel heing considerably eofter than heretofore.

Jacon Little.—Main drift north driving ahead in good ore. The last assaye, day hefore yesterday, averaged over $300 to the ton.

Buckeye.—The incline sinking, and the ore hreaste south looking and yielding well. On the 17th $1,575 worth of bullion was shipped.

Ren Jacket.—The incline ie sinking in splendid ore, the voin conetantly widening as greater depth ie attained.

Woodville.—The breasts and stopes continue looking well, and ore aseays run high.

WHITE PINE COUNTY.

Bullion.—White Pine *News*, Aug. 17: The shipment during the past week, was $24, 429,-24.

Treasure Hill Mines.—Ebenhardt & Aunoaa Co'e. Mines.—In the Eberhardt, working day and night to make connection between the Keystone and Blue Belle.

O. H. Treasure.—Sinking in the lower tunnel in fair grade ore. The Wheeler tunnel is in the spar vein ahout 3 ft.

Beecher Cons.—Shipping ahout 30 tons per day to mill, with a surplus of ore on the dumps.

Copper Glance.—A force of men will he put on in the North shaft and West drift in a few days.

San Juan del Rio.—Sinking in very good ore. The vein ie increasiug in width as depth is attained.

Pennsylvania.—The Jackson ehaft is down 70 ft. with good indicatione of strikiug a body of good ore. This ehaft has been sunk 15 ft. during the week.

Noonday.—Struck good ore in the new ehaft.

Emerald Isle.—Running the tnnnel with fair indications of striking ore.

Sunbeam.—Moscow shaft has been snnk 8 ft. deeper, and preparing to take out ers from the ledge on the south side of the shaft.

Silver Plate.—The ore being taken out is of a hettsr quality.

Schell Creek Dist.—Schell Creek *Prospect*, Aug. 17: McMahon.—They have an open eut on the ledge 40 ft. wids and showing a face of mineral 40 ft. in hight; the ledgs between the two walls is 20 ft. wide. The ore carries hlack sulphurets, horn silver, native and wire silver.

Schell Creek Con.—Tunnel in 160 ft. and work is going on night and dsy; taking out splendid ore from their croppings.

Summit.—Werk will he resnmed shortly.

Woonnurn.—Mr. Dyer will put men to work in a few days.

Kavanaoh Tunnel is pushing werk ahead.

Ontario.—We were shown a specimen completely covered with native silver and rnby.

Tehama Cons.—Tunnel in 180 ft. Air shaft down abent 60 ft.

In the Cora Lynn they have a cut open about 60 ft. wide, stripping the ledge and taking out immense quantities of ore.

Ruby Hill.—Wide West.—Tsn fect wide of ore that will pay $50 to the ton.

Robinsen Dist.—Thsy have struck very rich ore in ths Rathberns. The Watson & Hendricks is looking splendidly; work is progressing end fine ore is heing conetantly extracted.

Arizona.

Prospects.—Preseott *Miner*, Ang. 10: The Del Pasce mill and arastrae are running and paying well. The Tiger Co. are down over 100 ft. in their new shaft, and have an immenee hody of rich ore. Benton, War Eagle and other lodes, in Bradshaw, are exceedingly rich. At Wellapai mills are being erected and ledes developing into fine mines.

Colorado.

Clinton.—Central *Herald*, Aug. 14: The Clifton Co., in their tunuel on the northeast end ef the Clifton lode, strnck e very rich ore vein, nearly 4 ft. in thickness, yesterday.

S. Buell is sinking and drifting on the Leevitt; 40 tens of ore is being raised daily, and the mine ie being opened up hoth in the old and in the new or west shaft, where immense hediee of ore are in sight.

Caribou.—Caribeu *Post*, Aug 17: There are ebout 50 men employed in the Carihen, and it is the intentien to increase the force to 200. A contract has been let for running a tunuel 750 ft. in leugth to cut this mine at a depth of about 350 ft.

Havene & Bottleson are working the Sherman lode, north of the Carihou. They are driftiug on the vein and taking out nbout 5 tons per day.

Sam Conger has leased the Poorman for 18 months and ie taking out eome good ore.

A contract has been let on the Morning Star, and 6 men are engaged.

The Silver Point is being worked with very eatisfactory results.

The Berger Broe. are working the 5-20, 25 ft. deep; have a pay streak 10 inches in thickness.

The Boulder Co., Corral, Mammoth and Sovereign People at Cardinal are being worked with eatisfactory results.

A new discovery has been made near the head of Middle Boulder. The crevice is reported to he 75 ft. in width, and traceable for two or three miles.

Blondel & Co., of the Hidden Treasure, California lode, have eunk through 220 ft. of cap, and heen rewarded hy striking a fine body of ore which yields 6 ozs. per cord. They are working at the depth of 420 ft. and their vein is widening rapidly.

Montana.

Phillipsburg.—Deer Lodge *Independent*, August 17: The Stuart Mill is crushing ahout 6 tone every 24 hours, that paye over $120 per ton. Major Graham, Merrill & Co., and eeveral others are developing their ledges.

The mines in Spring Gulch are paying very well.

Rock Creek.—A ditch 5 miles long has been constructed to carry water to the mines. Hays & Co. will commence mining in about 2 weeks. Shively & Co., have just completed a ditch 1¼ miles in length and will begin sluicing next week. Owens & Co. expect to be taking out plenty of dust by the 1st of Sept. Carpenter & Co. are slnicing.

Upper Valley.—Robt McMinn & Co. are working from 6 to 10 men on the American Bar mines. The diggings pay from $8 to $15 per day to the haud, and will laet for ten yeare.

Utah.

Hiawatha.—Salt Lake *Tribune*, August 21: The vein has opened up to 7 ft. in width, the average assay from which is $286 to the ton.

Ophir.—Cor. same: Dry Cañon is looming up fine; the Keareage and Mt. Call are being worked. Immense deposite have lately been struck in both of them. The Mountain Chief, Snow-Storm Hill, in the cañon, ehowe a fine body of ore; average assay $201,56-100 and 56 per cent lead. They have a force of 15 men employed.

The Literary Club has employed Dr. Payne, who has been lecturing in San Francisco for several weeks past, to give a eeries of historic, literary and semi-scientific lecturos, commencing at Pacific Hall, Monday evening, Septemher 2d. Large audiences have attended Dr. Payne's previous lectnres.

Budding Fruit Trees.

Some time sincs Mr. Pryal, an experienced nurseryman, gave the ladies of the Oakland Farming Cluh soms experimental instructious regarding tbe budding of roses and other shrubs and plants, wbich wers well receivsd. We now furnish for the benefit of our general readers the experiments shown by Mr. Pryal, with some others.

Figure 1 in our engraving represents a branch of any fruit tree, in proper condition for furuisbing buds. It is usual on taking thsm from the parent tree to cut them with a half an inch of the old wood; they will not dry so quickly, whsn it is desirsd to carry thsm long distancss. Another precaution against drying is to clip off ths leaves, lsaving only ths stems half an inch long. This much of the stem of the leaf is quits necessary, as making it more easily handled in ths process of budding.

Suitable Stocks.

Ths stock to bs buddsd should bs of the present year's growth also, tbough if the bark of a two-year old stock is not too thick and hard, and pesls frsely from the wood, it can also be budded successfully.

With a tbin sbarp knife maks a cross cut with one prsssure of the blade, and then a longitudinal cut from the middle of it downward about an inch in length just through the bark, as in figure 2. Prepare a bud as in figure 3 by scooping it from tbe twig, and emoothing tbe wood eide down nearly to tbe bark, insert it as in figure 4, downwards, allowing tbe upper part to fit to the bark of the cross cut.

Tben bind it in place—figure 5—with thin stripe of cloth, basa matting or even coarse elastic woolen yarn is sometimes used. In two or three weeks loosen tbe bandage if tbe tree is growing rapidly, for by that time the bnd has made a etrong attachment to the stock if it is ever going to.

After Treatment,

The usual plan pursued is to let bud and stock remain untouched till the next epring. It is easy then to see whether the bud is alive or not. If it has dried and perhaps fallen out, the tree can be whip grafted upon its top, and no time in the growth of the tree lost. If it is found to be green, showing an inclination to grow, cut off the top of tbe tree down to one or two inches of the bud, and it will be forced into growth as soou as the season will admit.

Some nurserymen practice a method by which the bud is forced into growth at an carly period. In two weeke after the huds are set in August or Septemher, if the tree is still making a rapid summer growth, the top of the tree is cut off down to three or four inches of the hud; thie causes an immediate putting forth of the bud and probably three or four more of the natural huds of the stock. When these buds with the inserted one, have made a growth of an inch, cut off all hut the latter one, and this will often make a growth of twelve or sixteen inches the same eeason.

Budding Walnuts.

It is uenally found difficult to bud the walnut by tbe procese above given, on acconnt of the large size of the huds,it being difficult to get the hark to cover well and hold the buds in place. Reeort is usually had, therefore, to "terminal" hudding. This is from our own pereonal experience—hest performed in the spring when the hark peele freely and vegetation is jnst epringing into life.

It is necessary that both the stock and the shoot containing the terminal bud should he as nearly ae possible exactly of the same size. Cnt off the stock to be hudded; then make a cut around, an inch and a half from the top and carefully wring off the hark whole, as in figure 6. Then cut off half of the denuded part, or down to three-fourths of an inch, and immediately return the hark to its place, the upper half of which will now be open.

Tbe shoot with the terminal bud should be ahout two inches in length; tben from the lower end cut around and wring off the hark, to a distance of three-fourths of an inch, as in figure 7, and immediately insert the sciou in the open hark of the stock. Wrap the whole around with waxed cloth, which is preferable to dry cloth or bark of hasswood.

Annular Budding.

This consiete in removing a section of the bark of the stock quite round the tree, as in figure 8; then prepare a bud hy making a clean cut around the etock from which the bud ie taken, a little above and below a bud, then slit the eame lengthwise a little dietance to one side of the bud and carefully remove the annular ring of bark and the bud attached as in figure 9; spring it open and put it in position on the stock and bind as with other budding.

This is a method practiced more hy ths amatsur nurssryman than others, and is applicable to trees with tbick bark and large bnds like most of ths nut-bearing trees. In ths hands of a skillful manipulator it is practiced with singular success.

Budding Herbaceous Plants.

This metbod is oftsn pursued with roses and other bushes in which the wood is extremely soft or porous or bas a large pith, and with which a difficulty often occurs in getting the bark to peel. These woods are more surely buddsd hy simply scooping out a bud in form like figurs 10, and making a corresponding cavity in ths stock as in figure 11; place the bud in position and bind as in ordinary shield budding, ths msthod first described.

Instead of scooping out the bud lengthwise of ths twig, some practice taking it transversely or across it, and thsn removing a corresponding section from tbe stock, insert tbe bud and tis fast. In whatever way it is done, ths great point to bs secured is, the hringing together as perfectly as possibls, corresponding portions of the inner bark of both the stock and bud.

Some florists insist upon leaving the entire leaf attached to ths inserted bud; others clip off the half of it, whilst othsrs are as certain that after the bud is inserted and fastened, that it is better to clip away the entire leaf and its stalk. The reason given for and against, being with one that the leaf belps to draw ths nour-

ishment from the stock to and into tbe bud, with another that tbe leaf can only serve to exhaust tbe hud and cause it to dry more rapidly than it would without it.

Nevada Soda Company.

This company have lately introduced in the market and are engaged in developing an important hranch of our mineral reeources, which seem to embrace the whole catalogue of earthly wealth, now that diamonde have been discovered. But the Nevada Soda Company are presenting us with something of more practical utility than the gems of the hills. They have acquired possession of a small lake in Cburchill county, Nevada, having an area of about seven acres, which is a perfect well of carhonate of soda in its almoet pure etate. This article can he obtained from this reservoir to the extent of 20,000 tons a year, and is procured in tbe crude state. It is a merchantahle article for various purposee, as the manufacture of soap, aud for use as a flux in the crushing mills, for which it ie largely employed already at Virginia City. This substance forms on the shores of the lake as fast ae removed, and the enpply ie of course inexhaustable. By a simple process the crude article can be manufactured into bicarbonate of soda, sal soda, or caustic soda. Its caustic propertiee are said to be very strong. Jobn Hewston, of this city, and other well-known chemiets, have carefully analyzed the article, and pronounced it remarkahly pure and equal in all respects to the European eoda, which hae heretofore heen the quality in use throughout the world. The Company expect to overcome all competition in any market at once, from the extent of their eource of supply and the superiority of quality. It is now used hy the eoap manufacturers and by the woolen mille all over the Coast. In Nevada it is used as a flux, and several mills consume from 30 to 40 tons monthly. Tbe agents for Bahcock'e fire extinguisher have experimented with it and fouud it to answer admirahly, besides heing so much cheaper, as it can be purchased here for two cents, where they have to pay eeven cents for it in Chicago. A shipment hae been made to Philadelpbia, but the result is not yet known. Large quantities of eoda are used in glass making, and it is anticipated that ere long the company will be able to refine it, so that it can be used by our local glass factories. Specimens of the soda in ite various forme may be iuspected at their office, Room No. 12, Brittan & Holbrook'e Block, corner of California and Davis streets, where the urhane Secretary, A. Thorpe, Esq., is always ready to give information to visitore.

United States Mining Laws and Regulations Thereunder.

[Concluded.]

Sec. 4. *And be itfurther enacted*, That when such location and entry of a mine sball be upon unsurvsyed lands, it sball and may hs lawfnl, after ths extension thereto of the public surveys, to adjust tbe surveys to the limits of the prsmises according to the location and possession and plat aforesaid; and the surveyor general may, in extending the surveys, vary the same from a rectangular form to suit the circumstances of the country and ths local rules, laws, and customs of miners: *Provided*, Tbat no location hereafter made sball exceed two hundred feet in length along tbe vein for each locator, with au additional claim for discovery to the discovsrer of the lode, with the right to follow such vsin to any depth with all its dips, variations, aud angles, togsther with a reasonable quantity of surface for tbe convenient working of the same, as fixed by local rulss. *And provided further*, That no psrson may make more tban ons location on the same lode, and not more tban three thousand feet shall be taken in any ons claim by any association of persons. [Repealed.]

Sec. 5. *And be it further enacted*, Tbat as a further condition of sals, in the absence of necessary legislation by Congress, the local lsgislaturs of any State or Territory may provide rules for working mines iuvolving easemsnts, drainage, and other neceseary meane to their complete development; and those conditious shall he fully expressed in the patent.

Sec. 6. *And be it further enacted*, Tbat whenever any adverse claimante to any mine, located and claimed as aforesaid, shall appear before tbe approval of the survey, as provided in the third section of this act, all proceedinge shall be stayed until final settlement and adjudication, in the courts of competent jurisdiction, of the rights of possession to such claim, when a patent may issue as in other cases. [Repealed.]

Sec. 7. *And be it further enacted*, That the President of the United States he, aud ie hereby authorized to eetablish additional land districts, and to appoint the necessary officers under exieting laws, wherever he may deem the eame necessary for the public convenience in executing the provicione of this act.

Sec. 8. *And be it further enacted*, That the rigbt of way for the construction of highwaye over public lands, not reserved for public uses, is hereby granted.

Sec. 9. *And be it further enacted*, That whenever, hy priority of possession, rights to the use or water for mining, agricultural, manufacturing, or other purposes, have vested and accrued, and the same are recognized and acknowledged hy the local customs, lawe, and the decisions of courts, the possessore and owners of such vested rights shall be maintained and protected in the same; and the rigbt of way for the construction of ditcbes and canals for the purposee aforesaid is hereby acknowledged aud confirmed: *Provided, however*, That whenever, after the passage of this act, any person or perеons shall, in the construction of any ditch or canal, injure or damage the possession of any settler on the public domain, the party committing such injury or damage shall he liahle to the party injured for such injnry or damage.

Sec. 10. *And be it further enacted*, That wherever, prior to the passage of this act, upon the lands heretofore designated ae mineral lande, which have been excluded from eurvey and sale, tbere have been homesteads made by citizene of the United States, or persons who bave declared their intention to become citizens, which homesteads have heen made, improved, aud used for agricultural purpoeee, and upon which there have been no valuable mines of gold, silver, cinnahar, or copper discovered, and which are properly agricultural lands, the eaid settlers or owners of such homesteads shall have a right of pre-emption thereto, and shall he entitled to purchase the ssme at tbe price of one dollar and twenty-five cents per acre, and in quantity not to exceed one hundred and sixty acres; or eaid parties may avail themselves of the provisions of the act of Congress approved May twenty, eighteen hundred and eixty-two, entitled "An act to eecure homestcade to actual settlers on the public domain," and acts amendatory tbersof.

Sec. 11. *And be it further enacted*, Tbat upon tbe snrvey of ths lands aforesaid, the Secretary of the Interior may dssignate and set apart such portions of the said lands as are clearly agricultural lands, which lands shall thereafter be subject to pre-emption and sale as otber public lands of the United States, and subject to all the laws and regulations applicabls to the sams.

Approved July 26th, 1866.

B.—CHAP. CCXXXV.

AN ACT TO AMEND "AN ACT GRANTING THE RIGHT OF WAY TO DITCH AND CANAL OWNERS OVER THE PUBLIC LANDS, AND FOR OTHER PURPOSES."

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That tbe act granting the right of way to ditch and canal owuers over the public lands, and for other purposes, approved July twenty-six, eighteen hundred and sixty-six, bs, and the same is hsrehy, ameudsd by adding tbereto the following additional sections, numbered twelve, thirteen, fourteen, fifteen, sixtesn, and seventeen, respectively, whicb shall bereaftsr constituts and form a part of ths aforesaid act:

Sec. 12. *And be it further enacted*, Tbat claims, usually called "placers," including all forms of deposit, excepting veins of quartz, or othsr rock in plaoe, shall be subject to entry and patent undsr this act, undsr like circumstances and conditious, and upon similar procesdings, as are provided for vein or lode claims: *Provided*, That where the lands have been previously surveyed by tbe Uuited States, the entry in its exterior limits shall conform to the legal subdivisions of the puhlic lands, no further survey or plat in sucb case being required, and the lands may be paid for at tbe rate of two dollars and fifty cents per acre: *Provided further*, That legal eubdivisions of forty acree may be subdivided into ten-acre tracts; and that two or more persons, or associations of persons, having contiguous claims of any size, although such claims may be less than ten acres eacb, may make joint entry thereof: *And provided further*, Tbat no location of a placer-claim, bereafter made, sball exceed one bundred and eixty acres for any one person or association of pereons, which location sball conform to the United Statee surveye; and nothing in this eection contained shall defeat or impair any *bona fide* pre-emption or homestaad claim upon agricultural lands, or autborize the sale of the improvements of any *bona fide* settler to any purchaser.

Sec. 13. *And be it further enacted*, Tbat where said pereon or association, they aud tbeir grantors, shall have held and worked tbeir said claims for a period equal to the time prescribed by the statute of limitations for mining claims of tbe State or Territory where the same may be situated, evidence of such possession aud working of the claims for such period ehall be sufficient to establish a right to a patent thereto under thie act, in tho absence of any adverse claim: *Provided, however*, That nothing in this act shall be deemed to impair auy lien which may have attached in any way whatever to any mining-claim or property tbereto attached prior to the iseuance of a patent.

Sec. 14. *And be it further enacted*, That all *ex parte* affidavite required to be made under this act, or the act of which it is amendatory, may be verified before any officer authorized to administer oaths within the land district where the claims may he situated.

Sec. 15. *And be it further enacted*, That registere and receivers shall receive the same fees for tbeir eervices under this act as are provided by law for like services under other acts of Congress; and that effect shall he given to the foregoing act according to euch regulatious ae may he preecribed by tbe Commissioner of tbe General Land-Office.

Sec. 16. *And be it further enacted*, That so much of the act of Marcb third, eighteen hundred and fifty-three, entitled "An act to provide for the survey of tbe public lands in California, the granting of pre-emption rights, and for other purposes," as provides that none other than township lines shall be surveyed where the lands are mineral, ie hereby repealed. And the public eurveys are hereby extended over all such lands: *Provided*, Tbat all subdividing of surveyed lands iuto lots less than one hundred and sixty acres may he done by county and local surveyors at the expense of tbe claimants: *And provided further*, That notbing hcrein contained shall require the survey of waste or useless lands.

Sec. 17. *And be it further enacted*, That none of the rights conferred by sections five, eight, and nine of the act to which this act ie amendatory shall be abrogated hy thie act, and tbe same are hereby extended to all public lauds affected hy this act; and all patents granted, or pre-emption or homesteads allowed, sball he subject to any vested and accrued water rights, or rights to ditches and reservoire used in connection with euch water rights as may have been acqnired uuder or recognized by the ninth section of the act of wbich this act is amendatory. But uothing in thie act shall be construed to repeal, impair, or in any way affect the provisions of the "Act grauting to A. Sutro the right of way and otber privileges to aid iu the construction of a draining and exploring tunnel to the Comstock lode, in the State of Nevada," approved July twenty-fifth, eighteen bundred and eixty-six.

Approved July 9, 1870.

Good Health.

How the Air Gives Health and How it Causes Sickness.

A Popular Lecture by Dr. Lender.

[Translated from the German for the Press]

[Although some of the propositions assumed in the following remarks have not yet been accepted by the scientific world, yet, as they are popular in tone, and decidedly progressive and suggestive in character, we have no doubt our readers will feel an interest in their perusal, and derive profit from the views therein set forth.]

It is an old-time experience that the open, unconfined air has a favorable influence on sick organisms—improves the appearance, makes the muscles firmer; it is also a general experience that staying constantly in enclosed spaces, and even by staying a considerable length of time in our best houses, paleness of countenance, weakness and impaired power of withstanding chilly atmosphere, are induced, and the health finally is seriously impaired.

We naturally ask how it is possible that a body, which appears always so much the same as the air inside and outside of our dwellings, can have so different, indeed directly opposite effects.

Different effects on our bodies can only be produced by different substances which it has taken up. Hence we infer that the air inside and outside our dwellings, although it may appear always the same, always without color, taste or smell, *must* nevertheless have a different composition in the two cases; and we rightly demand that science should, if possible, disclose to us this hidden difference.

The First Proposed Solution of the Riddle.

When in the last part of the preceding century, it was ascertained that the air is a mixture, that it consists of two gases, oxygen and nitrogen, that oxygen is the more important element which the nitrogen serves to dilute; when it was found further that drawing in the breath means merely being hungry for oxygen and satisfying this hunger according to the needs of the body; when it was found that a grown person needs for his existence far more than 1,000 quarts (about 48 cubic feet) of oxygen every 24 hours, and that we can do without oxygen hardly for moments without danger of dying from suffocation; then people at that time called oxygen the air of life.

From the knowledge of these facts people thought that they could conclude that the different effects of free and confined air were due most probably to the presence of much oxygen and of little nitrogen in the open air, and of little oxygen and of much nitrogen in confined air.

But the investigations of the air of the highest hights and of the deepest depths of the mountains, fields and forests on the one hand, and of enclosed spaces, crowded theaters, churches and halls on the other, gave a very different result from what was expected. Everywhere oxygen and nitrogen were found present in a certain fixed proportion. In all places, at all times, under all conditions, the examination showed one-fifth oxygen and four-fifths nitrogen.

The riddle of the opposite effects of fire and confined air was, therefore, not solved. That the solution was no easy one is plain from the fact that, notwithstanding the great advances in science, it is only very recently that the solution has been found.

A Wonderful Creature in the Air.

In the air there are minute beings, too small to be visible to the naked eye, which are called *vibriones*. These beings, as Pasteur has shown, are the only exciters of putrefaction. By putrefaction we mean that decomposition through which nitrogenous plant or animal substances are changed into poisonous bodies.

If a vessel is closed with thick layers of cotton batting, the essential and the accidental gases of the air—or the oxygen and nitrogen and also carbonic acid, ammonia, etc.—penetrate the batting, but all solid bodies, and even the minute *vibriones*, are excluded. The result of this closing up of the vessel by a substance which filters the air is that putrefaction of any object in the vessel is prevented. All the disgusting appearances of putrefaction and decay, which we see in the dead bodies of plants and animals, are caused entirely by these minutest of beings and not by the gases of the air. That these beings are organized creatures is shown by their capacity of multiplying.

The *vibriones*, like all beings of the smallest class, are capable of limitless growth in numbers and would soon fill the air to such an extent that all plant and animal life would be ended, were not in the great household of Nature a gas constantly produced which serves to confine the multiplication of the *vibriones* within certain limits.

Now the surface of the earth is the hatching-place of the *vibriones* and the air is the place of generation of that gas which may be called the deadly enemy of the *vibriones* because it destroys them whenever it meets them.

A Wonderful Gas in the Air.

Of what nature is this gas? It is an oxygen, but oxygen of a higher, nobler kind. The common oxygen, as we know, forms one-fifth of the whole atmosphere; the higher kind of oxygen can be present in the open air only in exceedingly small quantities (up to one-ten thousandth) because in its contest with the ever-flowing stream of *vibriones* it disappears as rapidly as it is made.

The oxygen of the higher form is produced in large amounts during thunder storms by the flashes of lightning passing through the air; it flows out of the green leaves of plants; it is caused by combustion; it occurs wherever there is evaporation, as in the neighborhood of springs, especially where salt fluids evaporate, as on the surface of the ocean.

This excited oxygen, then, appears as an oxygen loaded with electrical power, an oxygen concealing in itself the glow of the sun's ray. It bears the same relation to common oxygen as the diamond does to graphite and to coal; these last three bodies, like our oxygen varieties, consisting of one and the same element—carbon—and having so different valuable properties because they carry bound up in them warmth and electricity—or elasticity in a word—in different amounts.

What superior properties are there which distinguish excited from common oxygen? The first is denser, one and a half times as heavy as the second; hence it sinks from the realms of the air to the surface of the earth, the domain of the *vibriones*. It has, farther, a distinct odor, (while common oxygen is odorless) which is somewhat similar to that of chlorine, and from this odor it derives its common name of *ozone*. Its third and most important property is that, at the temperature at which we live, it burns up all bodies except gold, platinum and water. This property is the weapon with which it destroys the *vibriones*.

That ozone has the strongest burning powers is easily understood from the manner of its generation. It carries to a certain extent into the realms of darkness, into the domains of the *vibriones*, the heat of the sun's ray, the consuming force of the lightning, through which it is formed out of common oxygen. It is likewise easily understood that it ceases to exist separately in the same measure that it gives out its inner force, and that it can be found in the air in the smaller amount the more *vibriones* rise from below, from the earth, to meet it.

Two Deadly Foes.

Vibriones and ozone cannot exist together, for the one is immediately destroyed by contact with the other. Where, therefore, *vibriones* are found in large numbers no ozone is present, and *vice versa* where the ozone is found continually the *vibriones* exist not at all or only in small numbers.

When ozone and *vibriones* contest with one another, that one always remains the victor which has entered the field with the most numbers. But the victory is dearly bought, for the loss of the one corresponds to an exactly similar loss of the other.

There is then on the earth an independent region of *vibriones*, in which these are the sole rulers and into which ozone enters only in small amounts or not all, and an independent region of ozone into which the *vibriones* enter only in small numbers or not at all. Where these two regions meet, there a deadly contest is waged night and day, so that the boundaries are constantly shifting as one or the other of the two parties has the advantage.

The True Solution of the Riddle.

The solution of the riddle of the opposite effects of free and of confined air is then this: the free air is the realm of ozone, while on the other hand, even our best houses come under the sway of *vibriones* which here, as in all spaces under the earth, have the mastery.

In order to be able to understand how it is that the *vibriones* injure the material condition and the functions of our bodies, but that the ozone constitutes a healing element of the air; that the air of our dwellings works with the power of a poison only through the *vibriones*, while the free air has the effect of a medicine through the ozone; a few facts may be given here.

Common oxygen is entirely inadequate to destroy *vibriones* at the common temperature. We should be then completely defenseless against the *vibriones* as long as we remained in our houses, were it not that our bodies have the power to manufacture ozone out of common oxygen. Through the chemical processes which go on in our bodies, not only ars warmth and motion generated, but also electrical currents are caused, and these last, as we have seen, give rise to the formation of ozone. But the power of manufacturing ozone decreases as we grow older, and this decrease is the essential cause of the final decay of our organs. Again, our bodies are built up not directly by our food, but by our food only after being subjected to the action of ozone. We have facts which force us to conclude that the building up of our bodies—at least of our nerve system—is due essentially to ozone; and that decay in old age, which occurs certainly despite the most nourishing food, is due to the deficiency in the supply of ozone.

In our dwellings every breath which we draw in carries many *vibriones* into our blood. To destroy these we use the ozone manufactured in our bodies. Thus our organs, especially the blood, muscles and nerves, are robbed of the ozone which they need so badly, and it can be easily understood how deficiency in building up our blood supply causes paleness and weakness. The worse our dwellings are, the more *vibriones* there are present and the more injurious is it to remain in the house. The ozone made in our bodies no longer suffices to destroy all the *vibriones*. These last increase in number and cause many forms of sickness according to the part of the body which they may attack. In the worst cases this grows so bad that the most serious epidemics arise.

What these Facts Teach Us to Do.

The knowledge that the *vibriones* work with the force of a powerful poison, the ozone acts as a powerful remedy, gives three things to do:

1st. To shun the localities where are decomposition and putrefaction—the strongest realms of the *vibriones*—as much as possible, especially during epidemics.

2d. To see that our houses are properly ventilated, so that we may have in them a constant inflow of pure air.

3d. Until the problem of perfect ventilation is solved, to manufacture ozone in our houses. It is to be recommended, especially in times of prevaling sickness, to place in our rooms saucers filled with salt water, these to be continually warmed or, better, evaporated by some mechanical contrivance.

We can easily ascertain how much ozone exists in the atmosphere where we happen to be. Strips of paper saturated with a solution of iodide of potash in starch paste are hung up so as to be protected from the rain and from the direct action of the sun. If no ozone is present the paper retains its color; a very little causes a reddish hue, considerable ozone gives a beautiful blue, and large amounts color blackish blue. "Ozonometers" are to be purchased which show very exactly just how much ozone is present.

We have seen how open air and confined air have different effects, how in nature, as in morals, there is ever going on a contest between an evil and a good spirit. Whether or no it will be possible that the doctors should be able to replace many of their prescriptions which often, as is well known, are poisons—it is not now the place to say. But one proposition cannot be too firmly remembered by the people, and that is this:

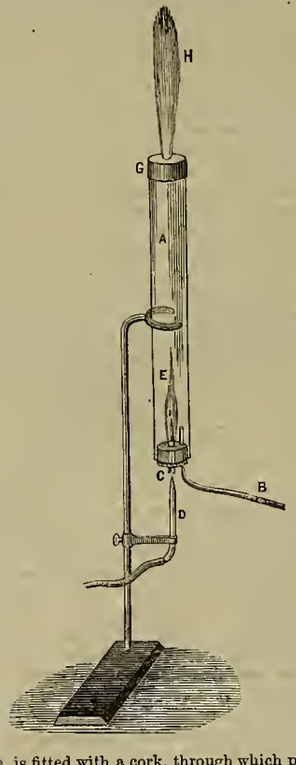
Every breath in our dwellings begins to poison and to weaken our bodies; every breath in the pure, free air begins of cast-out the poison and to strengthen us.—*N. A. Z.*

Useful Information.

An Interesting Experiment.

We transfer from the *American Artizan* the following illustration, which shows the reciprocal relation between bodies which burn and bodies which support combustion.

Referring to the accompanying figure. A glass cylinder, A, about 18 inches long and 3½



wide, is fitted with a cork, through which passes two tubes, one of which, C, about ⅜ of an inch wide and 3 inches long, is placed in the center of the cork, forming a perfectly free communication between the interior of the cylinder and the exterior air. The other tube, B, serves as a coal-gas supply when connected with any gas-tap. A cap, G, with a hole in the center, is placed on the mouth of the cylinder.

Now, if a supply of coal-gas be allowed to issue from ths tube, the gas will soon fill the cylinder, and the excess may be ignited at the top, as shown at H. The upward passage of the gas will occasion a certain amount of upward draught, which will draw in a small quantity of air through the tube, C. On carefully passing a lighted taper up this tube, this air may be kindled, and will continue to burn as an ordinary flame about four inches in length, E. The upper, exterior flame is thus coal-gas burning in air, the lower, interior flame, air burning in coal-gas.

But this experiment may be pushed still further. The interior of the flame, E, is hollow, and contains a quantity of uncousumed air: so, if a small, fine tube, with a small flame of coal-gas burning from its tip, be thrust up the tube, C, it will continue to burn in the flame, E, as shown at I. If pushed beyond the flame, E, the flame, I is at once extinguished, no oxygen being present in the cylinder, A, to maintain the combustion.

This experiment thus illustrates the reciprocity existing between those bodies that burn and those other bodies that support their burning, and it also forms an illustration of the fact that all ordinary flames are hollow, as if we consider, as we may do, that the interior of the cylinder, A, is simply a continuation of the hollow portion of the flame, H, we have three flames, each one burning in the hollow cone of another.

How to File a Saw.

The grand secret of putting any saw in the best possible cutting order consists in filing the teeth at a given angle to cut rapidly and of a uniform length, so that the points will all touch a straight-edged rule without showing a variation of a hundredth part of an inch. Besides this, there should be just enough set in the teeth to cut a kerf narrow as it can be made, and at the same time allow the blade to work freely without pinching. On the contrary, the kerf must not be so wide as to permit the blade to rattle when in motion. The very points of the teeth do the cutting. If one tooth is the twentieth of an inch longer than two or three on each side of it, the long tooth will be required to do so much more cutting than it should, that the sawing cannot be well done. Hence, the saw goes jumping along, working hard and cutting slowly. If one tooth is longer than those on either side of it, the short ones do not cut, although the points may be sharp. When putting a cross-cut saw in order, it will pay well to dress the points with an old file, and afterwards sharpen with a fine whetstone. Much mechanical skill is requisite to put a saw in prime order. One careless thrust with a file will shorten the point of a tooth so much that it will be utterly useless, so far as cutting is concerned. The teeth should be set with much care, and the filing should be done with great accuracy. If the teeth are uneven at the points, a large flat file should be secured to a block of wood in such a manner that the very points only may be joined, so that the cutting edge of the same may be on a complete line, or circle. Every tooth should cut a little as the saw is worked. The teeth of a hand-saw for all sorts of work, should be filed fleaming, or at an angle on the front edge, while the back edges may be filed fleaming, or square across the blade. The best way to file a circular saw for cutting wood across the grain is to dress every fifth tooth square across, and about one-twentieth of an inch shorter than the others, which should be filed fleaming at an angle of about 40°.—*Industrial Monthly.*

How Trees are Killed by Lightning.—All who have examined a tree which has been destroyed by a "thunderbolt," will have noticed not only how the layers of the wood have been shattered and separated into strips, as if full of "wind shakes," but also the dryness, hardness, and brittleness of the wood as though it had been through the process of curing in the kiln. This is attributed to the instantaneous reduction of the sap—the moisture within the wood—into *steam*. When this moisture is abundant, as in May or early June, the amount and force of the stem not only bursts and separates the layers and fibers, but rends the trunk in pieces or throws off a portion of it, down a line of greatest power or of least resistance. And when the amount of steam thus suddenly generated is less owing to the drier condition of the stem from continual evaporation and leaf exhalation, there may be no external trace of the lightning stroke; yet the leaves will wither after a few days, showing that the stem has been rendered incapable of conveying supplies, and the tree still partially or entirely die. Still lighter discharges may be conducted down the moist stem, without any lesion or hurt.

Tool Handles.—A matter of much utility to mechanics, would be instruction in the best methods of forming tool handles. Turners too often make the handles of gouges, chisels, augers, etc., exceedingly pretty to look at, yet a practical mechanic would presume to pare off the elaborated mouldings with which the handles were decorated, and excuse his presumption by saying they were, until so pared, all but useless in the hands of a tradesman, as they hurt his fingers, and he could not see his work over the flanges of the mouldings. It is quite a common fault with inexperienced turners to amuse themselves with making handles which a working carpenter would not accept.—*Cabinet Maker.*

Grease for Gas Fittings.—Dissolve one pound India rubber (not vulcanized rubber) in two pounds neats foot oil; the oil being carefully heated. Add one pound beeswax, mix when warm; let the mixture cool, and you will obtain the best grease for lubrication of gas stop-cocks, valves, etc. This grease has both valuable qualities of preserving the metal from gas corrosion, and of having a very prolonged influence.

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Our European Agency.—Frederick Brash, 21 South Grove East, Mildmay Park, London, is our general agent. Subscription £1 3s. 0d. for 12 months, or 12s. for six months, including postage. Friends at home and abroad will favor us by mentioning this agency to Europeans who would be interested in receiving this paper.

Illustrations and Reports of Mining Enterprises Wanted.—Drawings or photographs of mining works that are of general interest to our readers are solicited for publication in this journal. Official reports of Companies, and description of mines of importance, of special interest, are also desired. Sketches of any new method and discoveries will be very acceptable.

San Francisco:

Saturday Morning, Aug. 31, 1872.

Gold and Legal Tender Rates.

San Francisco, Thursday, August 29, 1872.—Legal Tenders buying, 88⅛; selling, 89. Gold in New York to-day, 113.

Table of Contents.

ILLUSTRATIONS.—Prof. Agassiz, 129. Budding Fruit Trees, 134. An Interesting Experiment, 135. An Improved Car Brake, 137.

EDITORIALS.—Boiler Iron; Our Distinguished Visitors, 136. The Diamond—No. IV; A Novel Carriage, 137. A New Empire—Our West, 138.

CORRESPONDENCE.—Notes of Travel in Lincoln Co., Nev. 130.

MECHANICAL PROGRESS.—Paper Armor—Plating for Vessels; Art in Metal Work; Obtaining Water from Ocean Depths; Engraving by Sun Light; Rivet Holes in Boiler Plate; Charcoal Iron; India Rubber Carriages, 131.

SCIENTIFIC PROGRESS.—Intelligence in Monkeys; Distribution of the Stars; Large Bone Cave in Bavaria; Spectrum of the Zodiacal Light; Something for the Wine Men, 131.

MINING SUMMARY from various counties in California, Nevada, Arizona, Colorado, Montana and Utah; Mining Shareholders' Directory, 132-3. Market Reports, 140.

GOOD HEALTH.—How the Air Gives Health and How it Causes Sickness, 135.

USEFUL INFORMATION.—How to File a Saw; How Trees are Killed by Lightning; Tool Handles; Grease for Gas Fittings, 135.

DOMESTIC ECONOMY.—Hints About Baking; Vegetable Beefsteak; Correct Way to Sweep a Carpet; Apple Pork Pie; Green Tomato Sauce; Graham Bread; Dairy Products Versus Beef for Food; Practical Receipts, 139.

MISCELLANEOUS.—Nevada Soda Company; United States Mining Laws and Regulations Thereunder, 134. Patents and Inventions; New Incorporations, 137. Coal in England; The Condor Mill; Mines Discovered on Scientific Principles, 139

Cope District.—Advices from Elko, state that the recent discoveries near Mountain City, Cope District, are even better than first reported—a somewhat unusual circumstance. The ledge varies from 22 to 25 inches in width and stands nearly perpendicular. The ore contains plenty of free gold, some horn silver, and is said to be free from "base metal." The ledge is situated half a mile west of Sugar Loaf Mountain on the head of Granite creek. It is supposed to be the source of the gold which is found in Grasshopper Gulch. It is stated that good judges consider that the ore is worth $6,000 per ton for the silver alone. The discovery has created great excitement and numbers of people are hurrying to the locality; so more strikes may be expected.

A New Mill.—The Miners' Foundry are getting up one of the largest and finest mills yet built for working ores by the Paul Process, which now bids fair to become an established system. In this mill all the recent improvements will be introduced which will overcome whatever difficulty has heretofore been felt. The mill is for McDonald, Stevens & Co., and is to be erected near Oroville, Butte Co., Cal., for working gold and silver ores.

A New Planet.—Dispatches from Utica report the discovery of a new planet by Professor Peters, of Hamilton College. It is the one hundred and twenty-fourth of a group of asteroids, and is bright and shining as a star of the tenth magnitude. Its position is 22 hours, 21 minutes and 22 seconds of Right Ascension, and 7 degrees, 18 minutes and 30 seconds of south declination.

The United States Mining Law and Regulations.—With this issue we conclude the new law and regulations thereunder, which have been continued through several numbers. It is now ready for sale in pamphlet form for the convenience of parties desiring it for ready reference. Price 25 cents, post paid.

Boiler Iron.

We are requested by a correspondent to answer the following question: "What is the law in regard to the quality of iron necessary to be used in the construction of steamboat boilers?"

The law provides that every plate of boiler iron or steel to be used in the construction of steamboat boilers, shall be permanently stamped by the manufacturer, in such places, if practicable, that the marks will be visible when the plates are made into boilers. These marks are, according to the rules and regulations of the Board of supervising inspectors, to be stamped at the diagonal corners of the plates about four inches from the edges, and also about the middle of the sheet. The marks are: the name of the manufacturer, the place where manufactured, and the number of pounds tensile strain it will bear to the sectional square inch. No iron or steel plates can be used in the construction of boilers for steam vessels unless they have been inspected by the proper authorities, and the working steam pressure allowable on such boilers when single-riveted, must not produce a strain to exceed one-sixth of the tensile strength of the plates, or rather of the plate which bears the mark of the least tensile strength. Where the longitudinal lape of the cylindrical parts of such boilers are double-riveted, however, and the rivet holes have been fairly drilled instead of punched, an addition of twenty per cent. to the working pressure provided for single-riveting may be allowed.

The plates to be used in the construction of steamboat boilers, whether iron or steel, which are subject to a tensile strain, as of course all are, are to be inspected so that the inspectors may ascertain the tensile strength, homogeneousness, toughness, and ability to withstand the effects of repeated heating and cooling. The law provides that no plates shall be used unless they have been so inspected; but it fails to provide for any means of testing them. An apparatus for testing the tensile strength, etc., would, we are informed, cost about $50,000, and no appropriations have ever been made for purchasing any, though in order to carry out fully the provisions of the act in this respect, one would be needed in each district. While the inspectors are required to satisfy themselves of the strength and value of material, they have no other means of doing so than by referring to the figures representing the tensile strength stamped on the plates. This stamping is left entirely to the manufacturers, and in order to comply with the law they are under the necessity of maintaining machinery to test the plates, or put down the figures on general principles. As no inspector of plates is provided for, it is highly probable that the figures do not always represent the actual strength. The inspectors are, as the law now stands, under the necessity of taking for granted that the tensile strength stamped is correct, and must make their calculations as to working pressure allowable from those figures. If the plate bears the necessary marks they have no more to say otherwise than by subjecting the boiler to the hydrostatic pressure required.

In subjecting high-pressure boilers to this test the inspector assumes one hundred and ten pounds to the square inch as the maximum pressure allowable as a working power for a new boiler forty-two inches in diameter, made in the best manner, of inspected iron plates one-fourth of an inch thick and of *a quality required by law*. The test applied must exceed the working power allowed in the ratio of one hundred and sixty-five to one hundred and ten. In low-pressure boilers the working power allowed is a pressure of only three-fourths the number of pounds to the square inch to which it has been subjected by hydrostatic test. All boilers to be used on steam vessels must be subjected to a hydrostatic test, in the ratio of one hundred and fifty pounds to the square inch to one hundred pounds to the square inch of working steam power allowed.

While the law provides that no plates shall be used in the construction of steamboat boilers which are less than one-fourth of an inch thick, or more than twenty-six one-hundredth of an inch, (the ends or heads of boilers only excepted in the latter instance) it nowhere provides any minimum tensile strength as a criterion for the inspectors to judge of the quality of the iron. And, as we before remarked, since they have no means of ascertaining personally the tensile strength of the iron, or, in fact, any thing about it, except as they may judge from appearances, the inspection as far as quality of iron is concerned, is a piece of red tape business. All the boiler plates coming to this market bear a uniform stamp, that of 55,000 pounds as the tensile strength. Whether this is correct or whether it is of first quality is left to the discretion of the inspectors, but we fail to see how they have any choice in the matter, since the plates are stamped in compliance with the law, and the inspectors have no right to doubt the authenticity of the stamps nor any means to institute a special test to determine the quality of the iron for their own satisfaction.

The clause of the act which provides that the plates shall be inspected in such a manner as to enable the inspectors to ascertain their tensile strength, etc., is, then, in effect a dead letter. They have no means of doing so; no authority to doubt the stamp of the manufacturer; no provision to guide them as to what shall be considered a proper strength, and still they must comply with the law. To obviate this difficulty the Board of Supervising Inspectors, at their last general meeting, adopted the following resolution, which, in accordance with law, has been approved by the Secretary of the Treasury.

Resolved, that for the present all iron and steel plates used in the construction of marine boilers, after the 28th of February, 1872, shall be considered as in compliance with the law on that subject, (Sections 36, 37, and 38 of the Steamboat Act of February 28, 1871) when the same are stamped according to Rule LXI, and examined by the inspectors before being used. The inspectors may require the iron or steel plates to be tested in order to satisfy them as to their quality and strength.

This rule, as a rule, may be a very good one, but in throwing any light on the subject of testing the plates, it is deficient. Rule LXI provides only what the marks on the iron shall be, and on what part of the plate they must be located. Section 36 provides that the plates be inspected to ascertain their strength, etc., etc.; Section 37 provides that the plates shall be stamped by the manufacturer with his name, the tensile strength, etc.; and section 38 provides for penalties in case the iron should be stamped falsely. Who is to inspect the plates, under section 36 does not appear. The inspectors have no means of doing so. Section 37 throws the *onus* of testing, on to the manufacturers, at great expense and inconvenience to them. This last provision and that specified in section 38 are evidently for the purpose of allowing parties injured in case of accident to call on the manufacturers of the plates for damages in case of poor iron in the boilers. This is of very little use, however, since it is well known that perhaps not one boiler in one hundred ever explodes from this cause, but rather from carelessness, low water, etc. If any minimum tensile strength were expressely specified, then parties injured might in case of accident from the use of bad iron come on the manufacturers of the iron for damages; but since they fulfilled the provisions of the law by merely stamping the necessary marks, which is all that is required of them, then if any accident occur from faulty iron, how injured parties could recover damages remains to be seen. They could not recover from the inspectors either, for they comply with the provisions of the Act when they see that the marks are stamped on the iron and subject the boiler to hydrostatic test as required. This being the case, there is no chance for any one to recover damages from either the manufacturers or the inspectors, so the provisions relating to this might just as well have been left out altogether.

The law really provides no particular kind of iron of any stated strength. It says "of the quality required by law," and requires no quality. It may be any kind of iron, American or English, and as long as it bears the marks referred to, must pass inspection. The Act of August 30th, 1852, provided that it was the duty of inspectors to ascertain the quality of material in the boiler plates of which steamboat boilers were to be constructed, and to satisfy themselves by any suitable means, whether the mode of manufacturing had been such as to produce iron equal to good wrought iron made with charcoal. That act is however repealed by the one which came in force February 28th, 1872.

The question resolves itself to this: There is really no law which restricts the *quality* of iron to be used in the construction of steamboat boilers. The manufacturers mark the tensile strength as they see fit, being under no inspection. The inspectors take such marks as correct, and allow the working pressure of the boilers made from the iron accordingly. There is no minimum tensile strength specified; they have no means of testing it; and since it bears the necessary marks, must accept it. The general impression is that the iron to be used must be American, charcoal hammered iron, No. 1, but the law nowhere specifies such to be the case. As the Government uses Pennsylvania iron, that is considered the best for the purpose, but there is, as far as we can see, no law on the subject. The inspectors themselves are perfectly aware of the discrepancies and faults in the law as it now stands but as yet have suggested no remedies. A National Convention of steamboat men is to be held in Cleveland, Ohio, in September, to discuss its provisions, and obtain if possible a change in certain portions pertaining to the use of patented appliances, etc., and if it is at all revised, it is probable that the more glaring imperfections will be amended.

Our Distinguished Visitors.

Ere these lines meet the eyes of the reader it is probable that the U. S. Steamer "Hassler" will arrive in our harbor, with the party of scientists on board, from whom we have heard so often during the past few months, and from whose observations the learned world are expecting much in the way of the advancement of science. The party is headed by Prof. Agassiz, whose portrait, with a brief sketch of his life, will be found on our first page.

The officers of the expedition, as detailed from the U. S. Navy, are as follows: Commander, P. C. Johnson; Lieutenant Commanding, C. W. Reed; Lieutenant, M. S. Day; Masters, E. W. Remey and H. M. Mansfield.

The scientific party consists of Prof. Agassiz, Prof. Hill, ex-President of Harvard University, Count Pourtales, one of the pioneers of deep sea sounding, Dr. Steintecken and Dr. White. Count Pourteles, left the expedition at Panama and returned to New York by steamer. Prof. Agassiz is accompanied by his wife.

The chief object of the expedition has been deep sea soundings and dredging, a matter to which much attention is now being paid, and from which much has already been gained. Russia, Germany, and France, have all been engaged in deep sea explorations in various localities, and the United States has been particularly active. The present expedition is the most complete which has ever been fitted out. The apparatus employed is something new—the invention of Mr. Sydney E. Morse, a brother of the celebrated electrician.

Other similar expeditions are about being fitted out for various parts of Europe, and this class of explorations will doubtless be continued until the bed of the ocean has been as completely mapped out, and its topography and surface geology as thoroughly studied as the great land areas of the globe.

Most marked attentions have been shown to the members of the expedition at whatever ports they have touched since leaving New York, and a most cordial welcome awaits their arrival at this port. The Academy of Sciences have appointed Gen. Hewston, Dr. Blake and Dr. Gibbons a committee to wait upon them in the name of the Association. Our public officers and citizens generally will also do all in their power to make their stay in this city as agreeable as possible, and profitable in the great scientific work in which they are engaged.

The Hassler will remain permanently on this Coast in connection with the Coast Survey.

Montana Mines.—A correspondent writes us from Helena, saying that silver mining in Montana is proving a success. Numerous mines are being opened and worked with flattering prospects. The ores prove to be rich. The Legal Tender mine of Clancy, Jefferson Co., at a depth of 110 feet with levels run 240 feet, is producing ore far ahead of any other mine, both in quantity and quality. The company are working 20 men and sacking ore for shipment, assaying from $1,000 to $1,200 per ton, producing from two to five tons daily.

Lecture on Preserving Fruit, Etc.—Dr. Ezra S. Carr will lecture at an adjourned meeting of the Oakland Farming Club, in the chemical lecture room of the State University, on Friday Eve., Aug. 30. A discussion will follow. Samples of a new style of California made packages for sealing and transporting fruit, lard and other kinds of food will be exhibited. The public are invited free to the meetings of this progressive institution.

The Horticultural Fair at the Floral Hall, on Stockton street, is daily thronged with visitors. It is a complete success.

The Diamond.—No. IV.

Down to a comparatively recent period India bas been ths only district of any importance whence diamonds have been obtained. Ths produce of tbsse mines was enormons both in regard to nnmber and size. In later times, however, this product has greatly fallen off, and for many years bas beeu almoet entirely snperceded by ths more recently discovered

Diamond Mines of Brazil.

The exietence of tbis new source of the precions gems was made known to the world by an accident in ths year 1727. A young Portuguese student who had some acqnintance with diamonds, whils visiting tho gold mines at Minos Gerdss, in Brazil, for tho purposs of obtaining mineral specimens, observed that the miners wsrs in the habit of using, as card counters, small whito stones which they occaeionally found wbere washing for gold. On examiuing tbem he felt very well assured that tbey were diamonds, and having procured quite a nnmbor, by hnutiug over the debris of the gold washings, returned to Lisbon, whero his suspicious wers fully confirmed. The fact soon bscame known in Brazil, and systematic search was commenced with most satiefactory results.

For the first few years tbe yield of the discovery locality averagsd about 144,000 carats (1,200 ounces) per annnm. Otbor and still more oxtensive diamond localities were discovered, from some of which enormoue yields even at first were obtained. Diamonds ars now found in Brazil ovor many tbouaand square miles of territory. Bnt latterly the yisld has largsly falleu, off and the average annual rsturns from the labor of 60,000 hands is now about 22,000 carats (184 ouncse). This large falling off has not been obsarved nntil within a few years, and had it not besn for ths South African discoveries, it was confidently expected tbat diamonds would soon have largely advanced in price.

Locality and Extent of the Diamond District.

Tbe diamond districts of Brazil ars epread over a region of country mnch larger than the entire State of California, and lyiug to ths south of the Amazon. Ths area is included betwesu latitnde 10° and 20° south, aud longitude 48° and 38° west. This region is broksn up into north and south mountain ranges, tbe valleys betwesn wbich are drained by rivere running into ths Amazon. Diamonds and otber precious stones, and in many localities gold is fonnd along nsarly all the mountain tributariee to tbeee rivers.

Rude Mode of Working.

Tbs labor of working for diamonds is conducted in the rudest manner. Barton, in his "Highlands of Brazil," eays that in tbs most advanced workings in ths country thers is no trace of crane, pulley, rail or bucket; no knowledge of tbs simplest contrivance of hoisting tackle. Notbing but the simplest tools are used. Two men witb bucket and windlass wonld raise twice as much gravel from a pit as a large gang of men are able to pack out by the means and appliancee tbero nsed.

The working scencs at many of the washiugs are said by Mr. Barton to be faithfully pictured in some of the old school geographies, where a long thatched roof is seen to cover a series of boxes tbrough wbich streams of water are conducted; while the four overseers are perched upon tall stools, armed witb formidable whips to keep in subjection tbe white kilted sable washers, who in a perepoctively vanishing line are seen bent painfully at their tasks; all but one, who is represented as throwing up his arms, to signify the welcome "Eureka," which secures him an immunity from toil for a longer or shorter period, according to the value of his find.

In tbo early daye of diamond eearching, the washings were mostly superficial—either in ehallow deposits of gravel, in little pan-like depressions near tbe foot of steep hills, along the banks of streams or in tbo shallow river bede. Pockets of immense wealth were eometimee found. One is noticed from which in a few hours, diamonds, all of comparatively emall size, were taken out by hand to the value of $400,000.

Of late yeare quite deep excavations are made, while the valueless surface deposits of clay and gravel are sometimee broken np by gunpowder. Theso excavations are generally what are supposed to he old river beds, hut euch as were formerly occupied by the etreams which now exiet. Tbe excavations are open pits, often of great length and considerablo hreadth—sometimss 50 or 80 fset deep. Ths eartb is carrisd from thess pits in small, shallow dishes npon ths heads of the miners (mostly slaves,) up steep inclinee to ths snrface; the pay dirt being deposited in ons place for wasbing. and tho wortbless dirt thrown by iteelf.

Nearly all ths diggings which are not near the rivers are found at ths bass of soms rocky hill or monntain, composed of ths well-known diamond-bearing strata, known as itacolnmite. Of courss, in such a vast area tbe valns of the ground ie greatly varied. Many miners have worked all their lives without finding a stone of ten carats weight. A two-carat diamond is considered large; but the most useful size is that of three carats.

The Diggings Exhaustless.

It may well be observed and with trutb that though ths Brazilian diamond fields have been worked for over 150 ysars, they have as yet been but harely ecratchsd. Norivsrs havs bsen turned; but fsw desp placere have besn opened, and little or no work has been done in many localities whers tbe precious stonss are known to exist in large numbers, but whsre water is scarcs for washing. It is very evidsnt that Brazil has a vast sxtent of diamontifsrous ground reeerved for future generations to work with intelligence and especially by the aid of machinery.

Formerly diamonds were easily found by roving prospectors, as shallow gold diggings were in the early days of California; but of late years more labor and some considerahle capital has to be employed in opening up diggings, and hence the business is rapidly falling into the bands of capitalists, some of whom employ from 100 to 300 hands each. Tho average daily expense per man is about $1.25. A great drawback to the business is the prevalence of theft. A receiver of stolen goode is found in almost every locality, who generally gots rich sooncr than does the prospector.

The univereal experience in diamond mining, thns far, is that wherever the precious etonee are found tbe deposite are likely to he widely scattered, liko gold. The inference from which would be, that if the reported discoverics in New Mexico are confirmed, we may look for a diamond region there which will give ample room and verge enough for twsnty or thirty thousand people. Hence, there is no need for any excitement. Enough will he found to go, any way, to settle the *status* of the question, so that those who remain quietly at home until definito information is received as to the truth of the reported find, will have ample opportunity to secure all the ground that may be needed.

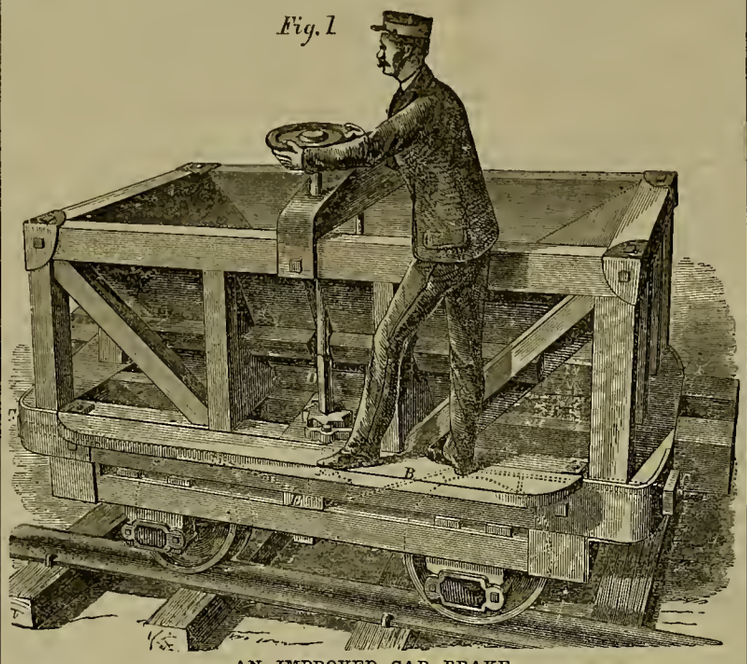
Railroad Car Brake.

Tbs improvsment in car brakes, which we herswitb illnstrate, is principally adapted for ues on four-wheeled coal cars, or such as are generally used about furnaces, etc. It has been in nse sometims on a gravity road in New Jersey, which was bnilt to carry iron ors from the mines to the Delaware, Lackawana and Western Railroad. Tbe road having a uniform grade of 200 fset to ths mile and being betwesn two and threo milss long with no level places to "brake np" on, tbe ordinary brakes were found inefficient. This braks was then applied to one of the cars and it was found possible to stop a train of five cars with it. It has been put upon all the cars of tho company and found to work with great efficiency and durability.

Fig. 1 represents a coal car witb the brake applisd to one pair of wbssls. Only tbs upright shaft and hand whssl ars shown in ths engraving, ths othsr portions of the braks being indicated by dottsd lines. Fig. 2 ehows ths side frams of the car, in section, with ths braks attached. At *A* ars shown ths braks blocks, which ars mads of wood or other suitable matsrial. These ars attached to a flexible iron strap, *B*, the ends of which are securcd to tbe frame of the car by the nuts and screwe shown at *C*. Thie strap is about three inches wide and a quarter of an inch thick. *D* is a vertical brake rod which is operated by the wheol seen in Fig. 1. On the lower part of the hrake rod is a ecrow which works in ths nut, *E*, attached to the frame of the car, and on its extreme end is the block, *F*, which has a groove lengthwise througb whicb tbe strap passes. It is kept from falling out hy a pin. Tbe end of tbe brake rod works in a socket in the hlock in such a manner as to raise or deprese the block without turning it. When it ie desired to apply the brakos, the rod is scrowed down by means of the wheel, and the strap is carried down with it. This brings the blocks, *A*, in contact with the wheels of the car and throwe part of the weight of the car upon the brakes. The amount of pressure applied to the brake block by the brakeman is dependent upon the pitch of the screw on the rod, *D*, and upou the diameter of its wbeel. When the hreak is not in use, the rod, strap, and hrake blocks are elevated sufficiently to relieve the wheels of all restraint. Sbould the strap stretch, it may be easily hronght to the propsr tension again by tightening the nnts at *C*.

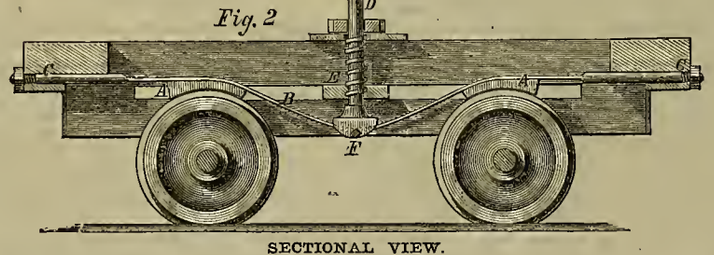
It will hs noticed that tbe brake blocke ars applied directly on top of the wbeels, which prsvent the strsin coming directly on ths boxes as it does when they are applied in any other position. Parties desiring further information can address ths patsntes, F. A. Canfield, Dover, N. J.

Fig. 1



AN IMPROVED CAR BRAKE.

Fig. 2



SECTIONAL VIEW.

Patents & Inventions.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[From Official Reports to Dewey & Co., U. S. and Foreign Patent Agents, and Publishers of the Mining and Scientific Press.]

For Week Ending July 30th, 1872.*

Beer-Faucet.—Patrick Francis Donnelly, San Francisco, Cal.

Railroad Tie.—John L. Boons, S. F., Cal.

Design.

Satchel.—Jamee H. Hitchings, S. F., Cal.

Trade-Marks.

Gloves.—P. and F. G. Conklin, S, F., Cal.

Note.—Copies of U. S. and Foreign Patents furnished by Dewey & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency

*The patents are not ready for delivery by the Patent Office until some days afterward.

A Novel Child's Carriage.

The baby wagon is a necssity in svsry well-regulated and flourishing houssbold. It savss many an aching arm and is a luxury to ths wse bit of humanity that occupies it. One objection to the uss of tbe child's carriags in a city, where street cars ars employed for carrying full grown humanity, is, that ths baby carriage occupies too much room to be taken into tbs cars, so that the baby must eitber be lsft at homs or carried in the arms. Appreciating this difficulty M. Ausiglioni, of No. 523 Pine St., in this city, has invented a folding carriage for children, whicb can bs folded up whsn dsired, into a spacs no larger tban that occupied by an ordinary carpet sack or eatcbsl, so that it can be taken into a car and placed in a position out of tbe way of ths passengere. The arrangemsnt and manner of folding it up is very ingenious and too complicated to bs described in this articls, but it is easily operated by any one after ones undsrstandiug its conetruction. By refsrring to our advertising colnmns it will be ssen that M. Aueiglioni desirss to dispose of ths invention. It is really a curiosity and is very ingeniously constructed.

New Incorporations.

Deer Creek Cons. G. and S. M. Co.—Aug. 22. Location: Sierra county. Capital, $3,000,000, divided into 60,000 shares. Trustees—Frank Corde, Lorin Goldstone, Charlee F. Webn, Fred. J. Wissing and W. L. Bromley.

Iron Rock Smelting Co.—Aug. 22. Location: Calaveras county. Capital stock, $2,000,000, in ehares of $100 eacb; Trustesse—Morris Cohen, S. Heydenfeldt, George D. Roberte, William Brown and Herman Wohler.

Howarn Hill G. M. Co.—Aug. 23. Location: Grass Valley, Nevada county. Capital stock, $100,000, iu 1,000 shares. Trustees—Peter Johnson, James McKenna and Frank G. Beatty.

Pirate Treasure Co.—Aug. 23. Object "to fit out an expedition to proceed to Cocoe Island for the purpose of obtaining the pirate treasure supposed to be secreted tbere." Capital etock, $5,000,000; 1,000 shares of the par value of $5,000 each. Trustees: E. D. Smith, B. Goodwin and Joel Jennings.

Albert S. M. Co.—Aug. 27. Location: Schell Creek and other mining districts, Wbite Pine. Capital stock, $3,000,000; in 30,000 shares. Directors: E. A. Head, George Treat, J. M. Dickinson, Jossph Clark and W. Thompson, Jr.

Baln Mountain G. M. Co.—Aug. 27. Location: Bald Mountain, Calaveras county. Capital stock, $300,100; in 15,000 sharee. Trustees—Thomas B. Clark, Cbarles W. Moore, A. Larcy, Louis Bush and J. L. Wilbirt.

Tuolumne Hydraulic M. Co.—Aug. 28. Capital stock, $3,000,000. Trustees—George W. Clark, S. D. R. Stewart, Jamee T. Maclean and John Mahu.

The Howarn Hill G. M. Co. filed a certificate of increaso of capital stock on the 26th, from $100,000 to $1,000,000.

From Aurora, Nevada.—A correspondent of the Sacramento *Union* at Aurora, Nevada, under date of August 14th, saye: A party of United Statee Government geological surveyors have heen within this vicinity for several days past, taking observations of the mountains and country generally.

DOMESTIC ECONOMY.

Hints About Baking.

The most difficult of the young honeewife'e dutiee ie that of haking. Food prepered in the best menner, mey be ruined by a fire which ie either too hot, or too slow, during any part of the process.

There are countless recipes for the preparation of food, but very little instruction as to the manner of baking it. Each one must learn by experience, and there are more provoking failures in thet direction then any other; and some, altbough they learn the facts, never learn the whys and wherefores of success.

I nsed to think that to hake anything well, the oven must be ae hot as it conld be without burning the article to be baked, all tbe time it was baking. Tbis is not the case with anything except crackers and cookies.

For biscuits, the oven should be eqnally hot when they are put in, but shonld begin to cool a little before they are taken out; tbis makes them very light, bnt one has to watch to keep tbem from being scorched; eigbt minutes are enough to bake them; if baked with such a fire as that reqnired for bread they are heavy.

For gems made of Graham flour and water, or for corn bread, tbe oven ehould be very hot, but the fire ehonld have been built sometime before they were put in, and begiu to go down by the time they are light; for if tbe oven remains as hot as was necessary to make them rise, tbey will burn before they are tboroughly cooked through.

Bread reqnires a much slower fire, but it shonld be even and steady from first to lest.

Cake reqnires a still slower fire than bread, bnt it mnst not be too slow or the cake will not be thoroughly cooked through, and will fall when taken from the oven. If the fire ie too hot at first, it will crust over before it is light, and hnrst through the crust and rise rough and homely. If the cake is large, eome nails or other bits of iron ehould he placed under it, and a paper spread over it, else it will scoroh before it is cooked through. Any kind of bread or pastry mixed with water requires a hotter fire than if mixed with milk.

Fruit pies require a hotter fire than bread, bnt steady from first to laet; if too hot at first the crust will cook before the fruit does; if too slow, towarde the last the crust will dry up before the fruit is done; if too hot, toward the last the fruit will stew out before the crnst is done. Pnmpkin pies require a fire as hot as can be without burning the crust.

Custards require a slow fire, else they will boil and whey ont before they ere doue. But puddings require a hot fire, particnlarly Indian pudding, for they are all the better for being wheyed out.

In baking meat pies always leave a hole in the top crust, else a poisonous gae will collect in it.

For baking meats the fire ehould never be hot enough to burn the grease; pork and chickens should require a hotter fire than beef.

We telk ahout hot, quick and slow ovens, but it takes a very long experience to enable one to tell by the feeling, or in any other practical manner, just how hot an oven is, until we see its effect on the articles cooked, and then it is too late; and it is impossible to communicate to any one else the precise temperature which is represented by our ideas of hot, quick, etc.

It is a matter of guess-work after all. In fact our whole system of cooking is more or less a patched up eystem of gness-work. We have rules and recipes for rich cakes and puddings, hut bread of all varieties, pies, butter, etc., are made by guess. And even in those recipes which we have, the ingredients are measured in all manner of vessels, and no two persons understand alike the terms which designate the quantitiee.

One of our friends has a stove with glass oven doors. Why could not a thermometer also be attached to them ?

I hope to eee the time when cooking shall become an exact science; wheu we shall not only measure the heat of our ovens with thermometere, and know the precise temperature of which they should be for each variety baked therein; but ehall also know the temperature at which our yeast and bread-sponge and cream shonld be kept; when we shall prepare all articles of food by correct rccipes, and measure all ingredients iu exact and staudard measures, which shall be alike all over the conntry, so that mistakes can only occnr when we fail to follow the rules.—*Mr. R. B. Hastings in Prairie Farmer.*

Vegetable Beefsteak.

This fungus *(Fistulina hepatica)*, which resembles a great red tongue protrudiug from tree stems, when once known can never be mistaken for any other species. When younq it is a dull, pale, purplish red, but becomes more red, and passee through brown to black as it decays; the under side is cream color, with minute red pointe occasionally, becoming yellowish-red as it grows. It generally confinee itself to old (and ofteu prostrate) oaks; hut iu Epping Forest, near London, it is not uncommon on the beech, and it has been observed on the cheetnut, walnut, willow and other trees.

Although such a large fungus, frequently weighing from fonr to six pounds, its growth is very rapid, eoon appearing and again disappearing on ancient trunks in tbe autumn. Wheu cut, broken, or bruised, it dietille a copions red juice like beef gravy. "When grilled," says Dr. Badbam, "it is scarcely to be distinguiehed from broiled meet;" end Berkley describee it es "one of the best things he ever ate, wben prepared by a ekillful cook." Tbere is a very slight acid flavor in the fungus when cooked which edds considerable piquency to the dish; it is extremely tender, succnlent, end resembles tender steek or tongue in a remerkable manner, tbe jnice it distills being in taste and appearance like gravy from en excellent broiled rump steak. Of course it shonld be gathered when quite young, fresh, and clean, end at once prepared for the table in the following menner: Wash and dry, cnt into inch slices half an inch wide, soak in scalding water for five minntes, and stew with butter and berbs; yolk of egg may then be added, and serve hot; or simply etew with a good steak, adding a scallion and parsley, salt, and pepper.

A New Empire.—Our West.

"Westward, the Star of Empire takes its Way."

It is nsual in the infancy of cities, states, and nations, for their peoplee to take hopefnl viewe of the future, and to picture to themeelves in bright colors, their coming wealth, power and glory. San Franciscans are not exempt from the pardonable pride, accordingly the literary world is flooded from time to time with enthnsiastic propbecies of the futnre of their city—the Queen city of the Pacific Coast. Trade, and trade alone is to make us rich and great, and to make our name as well known throughont the lands of earth, as wae Tyre and Carthage of old, or Venice and Genoa of more modern fame. The prevailing idea seems to have been that the westward flow of the human tide was arrested by the broad waters of the Pacific—"thus far ehall those go and no further." It never seemed to occnr to those seers that the fnture of that vast gronp of islands, the Indo Chinese Archipelago was inextricably bound up with our own. There lies a seat of future empire,—our west. The human flow will not be arrested on this Pacific Coast, in a few yeare as in the paet the cry will still he,—The West! the West! In a score of years, the thonsand and one islands lying between China, India and Anstralia, will be full of American trading posts, the nnclei of

Vast and Mighty Cities.

Fonnded hy San Francisco, and peopled by American citizens. Already the movement hae began. Honolnln ie our first outpost, a large, flonrishing and thoronghly American city. It already rules, and will continne to rnle, the destinies of the Hawaiian Archipelago. Ere long the semblance of snbjectiou to the nature authority will be cast off, and the confederated islands peopled by a population ini the main, Caucasian, will be known as the Hawaiian Republic. In China and Japan the settlemente of the great trading nations, from the proximity of this city, must be filled by an American trading popnlation to the exclusion of a Enropean. Great cities will grow up beside Yokohama, Yeddo, Canton, Shanghai, etc., bearing the same relation to them that did Golata of the middle agee, the Genoese trading city to Constantinople. As civilization advances, the West recedes. First it was fonnd at the Allegbanies, then the Mississippi made its bounds, the Rocky mountains next raised their snowy crests—an insurmountable barrier—there was the West, when lo they were scaled, and the explorer from the summite of their mighty passes, looking in imagination towards the Pacific, exclaimed, "There is the West!" And now the West beoomee the East. The fertile and beautiful islands lying between the tropice and between two great oceans invite us onward. They have an estimated popnlation of 23,000,000, ae great ae the whole of the Union thirty years back, a population far more enterprising than that of the Hawaiian Islands, and one that would want for more of the manufactured goods with which we could supply them. If an American city having one-third of the whole population of these islands has grown up there in tweuty years, it is not outside of the bounds of probability tbat the population of the American trading settlements in the Indo-Chinese archipelago will bear the same proportion to their present population, that Honolulu does that of the Hawaiian group now. These settlemente are certain to be made. We will not long remain content with lines of eteamships to Cbina and Japan, we mnst have them to Batavia and the Spice Islands.

Population and Settlement

Will follow. At first it will cousist entirely of traders and their dependents, hnt afterwards an agricultural one will follow, such an one as that which has filled the Southern Gulf States and the West Indiee. The greater part of these islands is still open to settlement. Java and Sumatra are the only ones having a population at all in proportion to their extent. Even then it is not more than one-half the density of that of New York, and only one-twelfth of the denoity of tbet of Englend. Tbe largeet and most fertile of the islends are ee spersely peopled as the western plains, and are occnpied by wild and savege tribes who bave not the remotest idea of the cultivation of tbe soil. Borneo, as large ae the New England and Middle States, has only a thin fringe of mixed Melay and Chinese civilization on its coset, and an equelly thin Dyek one in the interior. Papua, containing nearly half a million sqnare miles, eqnal in extent to one-third the country east of the Mississippi, ie tbinly inhabited by a sevage race, and is ae much open to settlement es were tbe great prairiee of the west helf a century since.

The Natural Productions

Of theee islends are the choicest on the face of the earth. Rice, sugar, spices, camphor, ivory, the sego, pelm, coffee, beeutiful and nseful woods, gold, antimony, tea and pearls abonnd. In making settlements in these islands and in developing their resources, we we will be providing new outlets for onr commerce and popnlation. Wheat does not grow there, and wool cannot be grown, the traders and other settlers, therefore, will have to be snpplied with breadstuffs and woolen goods from the Pacific coast forever. If tboronghly peopled, these islands wonld snpport ten times their present popnlation, eo tbat the work of development in them will go on for another half century. American settlement from the Pacific slope will develop them as English and Spanish settlement has developed America and Australia, and witb similar results. English and Spanish colonies developed English and Spanish commerce. England's commercial importance began on the day the first colony was settled iu Virginia, and progressed from that time till this hour, and hae grown precisely as has grown the United States and the coloniee of Australia. The history of all

Great Colonizing And Commercial Nations

Is precisely similar. Phœnicia first established trading stetions, these grew to be great cities, Phœnician colonies occupied the conntry aronnd them and became the nnclei of seats of empire. Greek trading etations gave birth to Greek colonization and Greek power, until the Greek cities abroad made those at home from which they sprung, pale before them iu wealth, popnlation and fame, as if they were mere villages. The history of the trading stations estahlished in connection with San Francisco amongst the islands of the east and on the ehores of China and Japan will be precisely similar. They will grow into great cities. Her rich men will develope the resonrcee of the conntry surrounding them, and found American settlemente close at hand, and this will go on till they will hecome as thoroughly American as New York or Pennsylvania. When that time comes we will he the grand centre towards which the commerce of a hundred mighty citiee founded by ns will tend, we will be the eeat of a new commercial empire which ehall cast all those that have ever flourished in the past far into the ehade. The stream of population will flow westward still, till to the new colonies fonnded by us we shall seem as far east as does New York and Philadelphia to an inhabitant of the Pacific slope. Wealth, commerce, enterpriee and popnlation still find their way west. Westward ho!

Coal in England.

Extended scientific explorations for supposed hidden coal measures are now being started in England, which, if successful in the anticipated discovery will exert a material influence on the iron trade of that country. The commissioners appointed in 1866 by the British Government, reported, it will be remembered, that within the known coal fields of Great Britain there are at present no fewer than 90,207 million tons of coal, while under the superincumbent rocks there are no fewer than 56,273 million tons, making an aggregate of 146,480 millions within 4,000 feet of the surface, which is the extreme limit at which coal can be dug, and which will last, according to some authorities, 276 years, according to others 110 years. In view of the probable exhaustion of the workable area of the British coal fields, scientific minds are discussing the probable existence at workable depth of productive coal fields under the secondary rocks in the southeastern counties. The interest which is felt in the problem has led a number of scientific gentlemen to solve the mooted question.

Godwin Austin was the first to point out, in 1856, the probable extension of the Belgium coal measnres under the southeast of England. The specific object of the proposed exploration is to discover whether the coal measures extend across the channel eastward into France and Belgium, and to go down 2,000 feet to find out. The utility of these coal beds will depend upon the thickness of the superjacent rocks. The carboniferous strata has been met with at a depth of 1,026, and in another place at 1,114 feet, while at Calais the coal measures were struck six feet lower. It is anticipated that coal-bearing strata can be found in England at a depth of 1,000 feet and less, which is less than the depth of strata which now cover the veluable and productive coal districts of Lancashire and Yorkshire.

The Somerset coal field is 8,500 feet in thickness and containe no less than fifty-five workable seams of coal; in Belgium they are 9,400 feet thick and contain 110 workable seams, and both disappear under the intervening secondary rocks. Both are isolated coal basins, and hence coal if found in England will be in a similar basin. The theory is that the coal fields of Somerset were once covered with secondary rocks as those in the southeast of England. The result of these experiments will throw much light on the coal-bearing strata of England.—*Iron Age.*

The Condor Mill.

The Pioche *Record* hes been examining tbe new Condor mill which ie of pecnliar construction; it says: Many in this vicinity have heen, aud still are very skeptical in their belief as to the ultimate snccess of the mill, eimply on account of them using rollers for crushing the ore instead of stampe, hence we feel that a general description of tbe machinery will not he nuinteresting to our readers.

The Mill Site

Is distant from Pioche about eight milee, and from Bnllionville about four milee, although off the main road to the latter place about three and a-half. A good natnral road, through a heavily wooded cañon, leads directly to the mill site. The gronnd selected is most elegible for the pnrpose for which it is intended, being a long flat stretch of ground, completely enrrounded by high rocky cliffs, from which there is apparently no outlet. A beautiful stream, containing 100 inches of water, miner'e measurement, courses through the cañon the entire distance. This will be dammed at a point opposite the mill and the water uecessary for nse will be pnmped up to a tank above the building. At present a road is being graded from the point below the mill to the ore platform, for the teams engaged in hauling.

The Machinery

Is now all upon the ground, and the work of pntting it in place was commenced yesterday. It consists of a 60-horse power engine, 14 inch hore and 30-inch stroke; a boiler 54 inches diameter, 16 feet long, with 64 three-inch tubes; one Brodie rock breaker; six pans; eix settlers, 7½ feet in diameter, and 4 feet deep each, and all the necessary shafting, machinery, etc.

The Rollers,

Which are to do the crushing instead of stamps, we deem worthy of more than a passing notice, ae thie will he the first attempt made to nee them in Eaetern Nevada. They are not, as generally snpposed, in the form of cylinders, bnt are of solid iron, about two feet in diameter, and about eight inches wide across the face. Their combined weight is 2,700 pounde, and with frame work and all the total weight is five tons. Theee rollere have been thoroughly tested in San Francisco with the hardest kind of rock, and fonnd to work enceeesfnlly under all circumstancee. They can be set to work coarse or fine, by means of ecrewe regulating it. The part which wears is easily removed and replaced, just the same as the shoe on the stem of a battery. In case of the face wearing unevenly, the rollers are allowed to run together during the night, and by moving the face ie entirely smooth. The rock ie fed to rollers, from the rock breakere, by means of a hopper. We eee no reason why they shonld not prove a success, but in the event of their failnre, etamps can be introduced into the mill at a light expense. It is estimated that the rollers will crush three tone of rock per hour, as their speed when running is 52 revolutione per minnte, and they will last three months without change.

For Prospecting,

A small pan and eettler have been provided, and parties having small lots of ore which they desire having crushed, can do so at this mill. Thie will be fonnd a great advantage to prospectore who dceire a few tons of rich rock cruehed, in order to enable them to procure meane to carry on the further development of their mines, and is eomething which has long been needed in our camp.

Miscellaneous.

The pans of the mill were built at the Occidental Foundry, San Francisco; the engine was built at the Pacific Fonndry; and the boilers, which were even bronght to thie State, were hnilt by Carry, of San Francisco, their conetrnction being pereonally supervised by Mr. P. McCurdy, the Superinteudent.

It is thought the mechinery will be in position and all other necessary work completed and in readiness to start up about the let of September.

THE electrical conducting power of a metal is diminished by heating it. A poor conductor is more easily heated by an electrical discharge thau a good conductor. Thus a stroke of lightning that would fuse an iron rod would not injure a copper rod of the same dimensions. The conducting power of copper is 120, while that of iron is ouly 24.

It is upon this principle that blasting by the aid of electricity is accomplished. The connecting link between the positive and negative wires is placed within the charge of powder and connects with a conductor inferior to the main wire, which thus becomes heated and ignitee the powder.

MINES DISCOVERED ON SCIENTIFIC PRINCIPLES.—The Sacramento *Record* of the 19th inst. gives the following account of the Ada Bell Mine, at Alta:

"The location of the claim was determined in pursuance of a theory promulgated by the State Geological Survey of the existence of an old river channel at that place. In sinking the shaft 140 feet of pipe clay was passed, then a gravel bed 50 feet in thickness was encountered. At the bottom of this a layer of "pay dirt" was found, from twelve to fifteen feet in thickness, which pays from ten to seventy-five cents to the pan, also large quantities of quartz boulders rich in free gold. The company owning the claim believe they have struck it rich. The capital stock of the company was divided into 1,000 shares. The company has expended $4,000 in the development of the mine, being a pro rata of $4 per share. Local interests are as as follows: L. S. Taylor, 100 shares; Geo. Rowland, 100 shares; Dr. Jacobs, 100 shares; J. V. Sims, 100 shares; P. Bohe, 50 shares; Mrs. Burney, 50 shares. Two hundred shares are owned in small quantities, and the remaining 300 shares are held by citizens of Alta. It is said that this is the first practical test to which the theories of the State Geological Survey—so far as relates to the locality in question—has been subjected. The vindication afforded seems to be highly gratifying to the holders of stock in the Ada Bell."

IT APPEARS that while the sugar cane contains nearly twice as much sugar as the beet root, in the process of extraction more sugar is obtained from the latter than the former. Millions of pounds of sugar are thrown away in Louisiana every year. The sugar exists in the cane in a crystallized form, and cannot be pressed out. It must be dissolved out by water.

The Mining and Scientific Press for 1872 is Still Marching Onward!

Our careful system of compiling, judiciously condensing, and conveniently arranging into regular departments, has been heartily endorsed. It renders the paper worth more to readers, who can find handily that which interests them most. This plan will be continued in Volume XXV.

The weekly issues of the PRESS will contain reliable

Information for Practical Miners,

Treating on the Opening of Mines; Mining of Ores; Milling of Ores; Smelting of Ores; Separation and Roasting of Ores; Amalgamation; Saving of Gold and all precious Metals; New Processes of Metallurgy; New Discoveries of Mines; Mining Engineering and Hydraulics.

For Inventors, Mechanics and Manufacturers.

All new and important developments in Scientific and Mechanical Progress; Patents and Inventions of the Pacific States; Progress of Home Industries; Hints for Local Manufacturers; Illustrations of New Machinery; Reports of Popular Scientific and Industrial Lectures.

Our Mining Summary

Gives the progress of mining work from week to week in the various counties and districts throughout the principal mining regions of the United States, arranged in alphabetical order. It is the most extensive record of mining operations published in the world. It affords the intelligent miner a rare opportunity to know and profit by the work and experience of his neighbors. Miners have few sources of practical information in their calling, and should embrace every reliable means for improvement. Mining Operators and Shareholders, at home and abroad, weekly examine our Summary with increased interest and profit.

For Self-Improvement,

Every issue of the PRESS abounds with articles of an elevating character, to stimulate the higher virtues and natures and progressive intellects of both men and women.

Our "Domestic Economy"

Embraces new and important facts which should be known in every cabin and household. Short and interesting—the articles under this heading are freely read and practiced with profit and improvement to the readers.

The PRESS is not strictly a "paper for professional, scientific men," but rather a

Liberal and Popular Scientific Journal,

Well calculated to make practically scientific men from our intelligent masses. This is our stronghold for accomplishing good. Plain, correct and pleasing language, easily comprehended by all, confined mostly to short articles, is our endeavor.

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Declared by Connoisseurs to be the only good SAUCE
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The success of this most delicious and unrivalled Condiment having caused certain dealers to apply the name of "Worcestershire Sauce" to their own inferior compounds, the public is hereby informed that the only way to secure the genuine is to ASK FOR LEA & PERRINS' SAUCE, and see that their names are upon the wrapper, labels, stopper and bottle.
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Ask for LEA & PERRINS' Sauce, and see name on wrapper, label, bottle and stopper.
Wholesale and for export by the Proprietors, Worcester; Crosse & Blackwell, London, &c., &c., and by Grocers and Oilmen universally. 15v24-eow-tf

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C. P. R. R.
COMMENCING
Monday, April 29th, 1872.
And until further notice, Trains and Boats will
LEAVE SAN FRANCISCO.
7.00 A. M. Overland Express Train for Sacramento, Marysville, Red Bluff, Colfax, Reno, Ogden and Omaha.
3.00 P. M. San Jose Passenger Train, stopping at all way Stations
4.00 P. M.* Passenger Train for Stockton, Merced and Sacramento.
6.30 P. M. Overland Emigrant Train, Through Freight and Accommodation.
7.30 A. M. Steamer New World (from Broadway Wharf) —Connecting at Vallejo with Trains of California Pacific Railroad.
4.00 P. M.* Sacramento Steamer (from Broadway Wharf). Connecting at Vallejo with trains of California Pacific Railroad.
2.00 P. M.* Steamer Antelope, from Broadway Wharf, connecting at Donahue with Trains of S. F. and North Pacific Railroad.
8.00 A. M. Excursion Boat (Sundays only) from Broadway Wharf, connecting with Special Train of S. F. & N. P. R. R. for Cloverdale and intermediate points, returning to San Francisco by 7 P. M.

OAKLAND BRANCH.—LEAVE SAN FRANCISCO, 7 00, 8 10, 9 2, 10 10 and 11 20 a. m., 12 10, 1 50, 3 00, 4 00, 5 15, 6 30, 8 00 9 20 and *11 30 p. m. (9 20, 11 20 and 3 00 to Oakland only).
LEAVE BROOKLYN, *5 20, 6 40, 7 50, 9 00 and 11 00 a. m., 1 30, 2 40, 4 55, 6 10, 7 40 and 10 10 p. m.
LEAVE OAKLAND, *5 40, 6 50, 8 00, 9 10, 10 00, and 11 10 a. m., 12 00, 1 40, 2 50, 3 50, 5 05, 6 20, 7 50 and 10 20 p. m.
ALAMEDA BRANCH.—LEAVE SAN FRANCISCO, 7 20, 9 00, and 11 15 a. m., 1 30, 4 00, 5 30, and 7 00 p. m. (7 20, 11 15, and 5 30 to Fruit Vale only).
LEAVE HAYWARDS, *4 30, 7 00 and 10 45 a. m., and 3 30 p. m.
LEAVE FRUIT VALE, *5 25, 7 55, 9 00 and 11 20 a. m., 1 30, 05 and 5 30 p. m. *Except Sundays.
T. H. GOODMAN, Gen'l Pass'gr and Ticket Agt. **A. N. TOWNE,** Gen'l Supt.

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THE DIAMOND FIELDS!
The New Golconda
DIAMOND MINING COMPANY
Has been incorporated with 50,000 shares of $100 each, to send a party of eight or ten picked men, under an able and reliable Superintendent well known in mining circles,
Off Immediately to the Diamond Fields,
By the Denver route. The party is in possession of maps and reliable information as to the locality, not only of the Diamond Fields of Harpending & Co., but of
RICH GOLD AND SILVER MINES,
Also, in the adjacent mining regions of Arizona and New Mexico, some of which will be secured for this Company, without delay, whether valuable diamond mines can be obtained or not.
Twenty thousand shares of stock are set aside for a working capital, of which A LIMITED NUMBER ONLY will be offered for sale at present, at the very low rate of $2 per share, in order to insure a quick sale and a speedy departure of the party.
In order to insure the fidelity of those who form the prospecting party, each member is to receive 1,000 shares of the stock of the Company, and good wages at the end of six months' faithful service, besides their outfit and expenses from the start. An assayer and a physician, who are themselves experienced prospectors, are included in the party.
Articles of Agreement,
Protecting the rights of Stockholders from the acts of dishonest Directors, are embraced in the Certificate of Incorporation and cannot be evaded.
NO ASSESSMENT CAN BE LEVIED
Until the working capital is exhausted, and no stock can be issued (except to raise the fund to send the party to the fields) UNTIL CLAIMS ARE SECURED for the Company, and active operations commenced to develop them.
THIS COMPANY MEANS BUSINESS,
And will not lose a moment's time in getting its party on the ground.
The following well known citizens compose the Board of Directors:
GEORGE W. SMILEY, GEN. GEO. P. IHRIE,
H. H. FLAGG, SETH COOK,
J. C. BOWER, C. A. MATHIEU,
JAMES WILSON.
Subscriptions Received for Stock,
AT $2 PER SHARE,
At the office of the Company, under Donohoe, Kelly & Co.'s Bank, southeast corner of Sacramento & Montgomery streets.
JAMES WILSON, Secretary.
San Francisco, August 16, 1872. 8v25tf

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DR. PAYNE,
Is now at his Private Parlors, 37 and 38 Russ House ready to wait on Gentlemen.
LECTURES at Mercantile Library Hall again next week.

THE WHELPLEY & STORER PULVERIZER.—In our issue of May 25th, we called the attention of our readers to this improved machine for reducing orea to fine powder, and gave an illustration and a somewhat detailed description of its operation. After a careful examination of the machine and witnessing its operation on ore for several hours, we were profoundly impressed with its results and gave it our approval as a perfect quartz pulverizer in principle. A mutual attrition of the particles is a system that is both economical and practical, and the principle is being applied to quartz grinding machinery with success. The speedy adoption of the machine for grinding ores in many of the Eastern reduction works, throws very much credit upon Messrs. Whelpley & Storer for the originality and perfection of a machiue so valuable to our coast.

We are pleased to state that we find this Eastern invention very handsomely endorsed by many leading practical men of our Eastern reduction works, who are using it to a great extent, also to learn of its speedy adoption on our own mines.

Parties desiring to see the machine in operation, or of obtaining further information, are advised to call on the Pacific Coast Agent, Mr. Geo. D. Wyman, No. 430 Montgomery St., in this city.

UTAH ITEMS.—The total cash mining sales in Salt Lake City for two weeks previous to the 24th amounted to over $300,000. The Emma Hill Consolidated Co. last week sold 300 tons of ore from the Vallejo tunnel, on the dump for $44 per ton. The Montezuma, Savage, Hiawatha and Last Chance mines, in Little Cottonwood, were sold on the 25th inst, to a New York company for $406,000. They have $100,000 additional for working capital. Geo. Hearst has bought the Ontario mine in Parley's Park for $27,000. Very rich gold-bearing rock has been brought in from Tintic.

A GRAND MINING ENTERPRISE.—The Virginia *Enterprise*, of August 7th, says: Fountain, the well known mechanical engineer, left last evening for Silver City, Alpiue county, California, for the purpose of drawiug plans for two sets of hoisting works, a saw mill and other works for a London company who have purchased several mines in that region. Among the other improvements to be made is the enlargement of a mill now on the ground. The company which is putting up these extensive works is the same that some months since was negotiating for the purchase of the Dunderberg mine, Iuyo county, California, owned principally by Dr. Munckton, of Carson City.

San Francisoo Metal Market.

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, August 29, 1872.

IRON.—			
Scotch Pig, Iron, ₱ ton	$65 00	@	— —
White Pig, ₱ ton	55 00	@	— —
Refined Bar, bad assortment, ₱ lb	— 04½	@	— 5
Refined Bar, good assortment, ₱ lb	— 05	@	— 5½
Boiler, No. 1 to 4	— 05½	@	— 06
Plate, No. 5 to 8	— 06½	@	— 07
Sheet, No. 10 to 13	— 07½	@	— —
Sheet, No. 14 to 20	— 07½	@	— —
Sheet, No. 24 to 27	— 08	@	— —
Horse Shoes	8 00	@	
Nail Rod	10		
Norway Iron	8		
Rolled Iron	5		
Other Irons for Blacksmiths, Minere, etc.	5½	@	5½
COPPER.—			
Sheathing, ₱ lb	— 40	@	— 45
Sheathing, Yellow	— 28	@	— 30
Sheathing, Old Yellow	— 12	@	— 12½
Composition Naile	— 28		— 30
Composition Bolts	— 28		— 30
TIN PLATES.—			
Platee, Charcoal, IX ₱ box	17 50	@	— —
Plates, I C Charcoal	15 50		— —
Roofing Plates	15 50		16 —
Banca Tin, Slabs, ₱ lb	— 50		— 55
STEEL.—English Cast, ₱ lb	— 18		— 20
Drill	18		20
Flat Bar	18		20
Plough Points	3 75		4 00
Resea (for mould boards)	12½		15
QUICKSILVER.—₱ lb	— 85		— 87½
LEAD.—Pig, ₱ lb	— 05¾		— 06
Sheet	— 10		— —
Pipe	— 9		— 10
Bar	— 06¾		07
ZINC.—Sheets, ₱ lb	— 11		— 11½
BORAX.—Refined	— 28		— 30
Borax, crude	— 5		— —

Leather Market Report.

[Corrected weekly by Dolliver & Bro., No. 109 Post st.]

SAN FRANCISCO, Thursday, August 29, 1872.

SOLE LEATHER.—The Eastern market is higher, and some tanners have advanced their prices here. We quote as below:

City Tanned Leather, ₱ lb	26@29
Santa Cruz Leather, ₱ lb	28@29
Country Leather, ₱ lb	25@28
Stockton Leather, ₱ lb	26@29

French skins continue firm. All California skins are scarce and bring full prices.

Jodot, 8 Kil., per doz	$60 00@
Jodot, 11 to 19 Kil., per doz	68 00@ 88 00
Jodot, second choice, 11 to 15 Kil. ₱ doz	56 00@ 75 00
Lonoune, 16 to 18 Kil., ₱ doz	75 00@ 77 50
Levin, 12 and 13 Kil., per doz	68 00@ 70 00
Cornellian, 16 to 19 Kil., per doz	63 00@ 65 00
Cornellian, 12 to 14 Kil., per doz	80 00@ 85 00
Ogerau Calf, ₱ doz	54 00@
Simon, 18 Kil., ₱ doz	55 00
Simon, 20 Kil. ₱ doz	68 00
Simon, 24 Kil. ₱ doz	72 00
Robert Calf, 7 and 8 Kil.	35 00@ 40 00
French Kips, ₱ lb	1 10@ 1 30
California Kip, ₱ doz	60 00 to 80 00
French Sheep, all colors, ₱ doz	15 00
Eastern Calf for Backs, ₱ lb	1 15@ 1 25
Sheep Roane for Topping, all colors, ₱ doz	9 00@ 13 00
Sheep Roans for Linings, ₱ doz	8 00@ 10 50
California Russett Sheep Linings	1 75@ 5 50
Best Jodot Calf Boot Legs, ₱ pair	5 25
Good French Calf Boot Legs, ₱ pair	4 50@ 5 00
French Calf Boot Legs, ₱ pair	4 00
Harness Leather, ₱ lb	30@ 37½
Fair Bridle Leather, ₱ doz	48 00@ 72 00
Skirting Leather, ₱ lb	34@ 37½
Welt Leather, ₱ doz	30 00@ 50 00
Buff Leather, ₱ foot	18@ 21
Wax Side Leather, ₱ foot	20@ 22

IN TOWN.—Mr. L. P. McCarty, corresponding agent of the SCIENTIFIC PRESS and PACIFIC RURAL PRESS, two first-class illustrated Pacific Coast weeklies, arrived in town yesterday. He will remain here a few days canvassing for the journals he represents as correspondent and agent. Mr. McCarty has visited most of the prominent mining districts east of here, and the result of his observations has been published in the SCIENTIFIC PRESS in several interesting and instructive communications from Schell Creek, Pioche, Eureka and other towns that he has visited. He proposes furnishing for that journal an elaborate description of the mines of this district; and as his communications are very extensively copied by all the aclentific and mining journals, we shall watch with considerable interest for his letter from this place, and we trust that our citizens will render him all the assistance in their power both by subscribing liberally for the journals he represents and by furnishing him information concerning our mines and other matters of general interest.—*Reese River Reveille, August 19th.*

SEND US NOTICE.—In some instances, by order of agents or others, we have continued for a time to send this paper beyond the time paid for. As we do not intend to send it to a single individual who does not wish it, we earnestly request such specially treated subscribers, who may not wish the paper, to send in the amount of arrearages with order to stop. A second visit will not be necessary if you give us your postoffice address with your name. Don't rely on P. M.'s to notify us. We cannot find the name on our large list by a subscriber's simply returning the paper without the town or city accompanying his name upon it. Papers returned are not so sure as letters to reach the publishers' desk. lambp

Our Agents.

OUR FRIENDS can do much in aid of our paper and the cause of practical knowledge and science, by assisting Agents in their labors of canvassing, by lending their influence and encouraging favors. We intend to send none but worthy men.

FRANK S. CHAPIN—California.
WM. F. SPENCER—California.
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FOR SALE.

An interest in a Valuable Invention.

A NEW, FOLDING, CHILD'S CARRIAGE.

Call and examine at 523 Pine street.

M. ANSIGLIONI, San Francisco, Cal.

N. B.—The above invention has been protected by Caveat. 9v25 2m

THE Gardner Steam Governor

Is acknowledged by engineers to be, as an engine regulator, without an equal. We have all sizes of these Governors on hand, with also a full stock of Engineers' and Mining Supplies. TREADWELL & CO., San Francisco. ☞ Send for Price List. 9v25eow

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Marine, Locomotive and Stationary Engines Quartz Crushing and Amalgamating Machines, Mill Irons and Brass and Iron Castings, of every description, made to order.

Steamboat Repairing, Boiler Making, Turning and Finishing,

EXECUTED WITH DISPATCH.

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A complete set of Machinery of our own design and patent for extracting oil from Castor Bean, dispensing with Hair Cloth. Also Machinery for Flax Seed Oil, Mustard Seed Oil, and Sun Flower Seed Oil.

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For sawing Marble of any thickness or size.

Irrigating Pumps. Steam Pumps.

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4v24-1yalamr

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$1,000 REWARD! For any case of Blind, Bleeding, Itching, or Ulcerated Piles that Dr. Bing's Pile Remedy fails to cure. It is prepared expressly to cure the Piles and nothing else. Sold by all Druggists. Price $1.00.

C. F. RICHARDS & Co., Agents, corner Clay and Sansome streets, San Francisco, Cal.

MORSE'S PATENT.

BOILER TUBE CLEANER.

The Neatest and Cheapest thing in the market for cleaning Boiler Tubes For sale by TREADWELL & CO., Machinery and Supply Depot, San Francisco. 9v25eow

Mining and Other Companies.

Owing to the time necessary to mail the present large edition of the M. & S. Press, we are obliged to go to press on Thursday evening—which is the very latest hour we can receive advertisements.

Beckwith Mining Company, Ely Mining

District, Lincoln County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees, of said Company, held on the 19th day of August, 1872, an assessment of Twenty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, Room 5, No. 302 Montgomery street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Saturday, the 28th day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the 23d day of October, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery St., San Francisco.

Corona Consolidated Mining Company—

Location of works, Eureka District, Lander County, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 25th day of June, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Charles Hanson	229	100	$10 00
Charles Hanson	230	100	10 00
Charles Hanson	233	50	5 00
Charles Hanson	234	20	2 00
Charles Hanson	238	50	5 00
Charles Hanson	239	50	5 00
Charles Hanson	240	50	5 00
Charles Hanson	241	50	5 00
Charles Hanson	242	50	5 00
Charles Hanson	272	50	5 00
Charles Hanson	274	50	5 00
Charles Hanson	275	25	2 50
Charles Hanson	276	25	2 50
Charles Hanson	277	25	2 50
J M Folcy	151	4000	400 00
D H Hall	324	500	50 00
D H Hall	325	500	50 00
D H Hall	325	500	50 00
D H Hall	327	500	50 00
D H Hall	328	200	20 00
D H Hall	329	200	20 00
D H Hall	330	100	10 00
D H Hall	331	100	10 00
D H Hall	332	100	10 00
D H Hall	333	50	5 00
D H Hall	334	50	5 00
D H Hall	335	50	5 00
D H Hall	336	50	5 00
D H Hall	337	25	2 50
D H Hall	338	25	2 50
D H Hall	339	25	2 50
D H Hall	340	25	2 50
H P Coon, President	150	4000	400 00
H P Coon, President	151	4000	400 00
H P Coon, President	206	3000	300 00
E A Richardson, Trustee	163	200	20 00
E A Richardson, Trustee	164	200	20 00
E A Richardson, Trustee	165	400	40 00
E A Richardson, Trustee	166	500	50 00
E A Richardson, Trustee	167	500	50 00
E A Richardson, Trustee	169	500	50 00
E A Richardson, Trustee	170	500	50 00
E A Richardson, Trustee	171	500	50 00
E A Richardson, Trustee	172	500	50 00
E A Richardson, Trustee	173	200	20 00
E A Richardson, Trustee	175	200	20 00
E A Richardson, Trustee	177	200	20 00
E A Richardson, Trustee	179	100	10 00
E A Richardson, Trustee	180	100	10 00
E A Richardson, Trustee	181	100	10 00
E A Richardson, Trustee	182	100	10 00
E A Richardson, Trustee	183	50	5 00
E A Richardson, Trustee	184	50	5 00
E A Richardson, Trustee	185	50	5 00
E A Richardson, Trustee	186	50	5 00
E A Richardson, Trustee	187	50	5 00
E A Richardson, Trustee	188	250	25 00
E A Richardson, Trustee	190	50	5 00
E A Richardson, Trustee	191	50	5 00
E A Richardson, Trustee	192	50	5 00
E A Richardson, Trustee	193	50	5 00
E A Richardson, Trustee	194	50	5 00
E A Richardson, Trustee	195	50	5 00
E A Richardson, Trustee	195	50	5 00
E A Richardson, Trustee	197	50	5 00
E A Richardson, Trustee	198	100	10 00
E A Richardson, Trustee	199	100	10 00
E A Richardson, Trustee	200	100	10 00
E A Richardson, Trustee	201	100	10 00
E A Richardson, Trustee	202	100	10 00
E A Richardson, Trustee	203	20	2 00
E A Richardson, Trustee	204	20	2 00
E A Richardson, Trustee	210	1000	100 00
E A Richardson, Trustee	211	500	50 00
E A Richardson, Trustee	212	500	50 00
E A Richardson, Trustee	213	250	25 00
E A Richardson, Trustee	214	250	25 00
E A Richardson, Trustee	215	100	10 00
E A Richardson, Trustee	216	100	10 00
E A Richardson, Trustee	217	100	10 00
E A Richardson, Trustee	218	100	10 00
E A Richardson, Trustee	219	100	10 00
E A Richardson, Trustee	220	100	10 00
E A Richardson, Trustee	221	50	5 00
E A Richardson, Trustee	222	50	5 00
E A Richardson, Trustee	223	50	5 00
E A Richardson, Trustee	224	50	5 00
E A Richardson, Trustee	225	50	5 00
E A Richardson, Trustee	226	50	5 00
E A Richardson, Trustee	268	25	2 50
E A Richardson, Trustee	269	25	2 50
E A Richardson, Trustee	270	25	2 50
E A Richardson, Trustee	271	25	2 50
W H Adams	205	10	1 00
W H Adams	267	20	2 00
L S Adams	207	200	20 00
L Dutton	208	200	20 00
C J Collins	227	100	10 00
C J Collins	311	1000	100 00
C J Collins	314	250	25 00
C J Collins	315	250	25 00
C J Collins	317	150	15 00
C J Collins	318	100	10 00
C J Collins	319	100	10 00
C J Collins	320	100	10 00
C J Collins	343	25	2 50
C J Collins	344	10	1 00
C J Collins	345	5	50
C J Collins	345	5	50
C J Collins	347	5	50
H A Cheever	244	500	50 00
H A Cheever	245	500	50 00
H A Cheever	246	500	50 00
H A Cheever	247	200	20 00
H A Cheever	248	200	20 00
H A Cheever	250	200	20 00
H A Cheever	251	200	20 00
H A Cheever	252	100	10 00
H A Cheever	253	100	10 00
H A Cheever	254	100	10 00
H A Cheever	255	100	10 00
H A Cheever	256	100	10 00
H A Cheever	257	50	5 00
H A Cheever	258	50	5 00
H A Cheever	259	50	5 00
H A Cheever	260	50	5 00
H A Cheever	261	50	5 00
H A Cheever	262	50	5 00
H A Cheever	263	50	5 00
H A Cheever	264	55	5 00
H A Cheever	265	50	5 00
J Clem Uhler, Trustee	279	500	50 00
J Clem Uhler, Trustee	280	500	50 00
J Clem Uhler, Trustee	281	250	25 00
J Clem Uhler, Trustee	282	250	25 00
J Clem Uhler, Trustee	283	250	25 00
J Clem Uhler, Trustee	284	250	25 00
J Clem Uhler, Trustee	285	100	10 00
J Clem Uhler, Trustee	286	100	10 00
J Clem Uhler, Trustee	287	100	10 00
J Clem Uhler, Trustee	288	100	10 00
J Clem Uhler, Trustee	289	100	10 00
J Clem Uhler, Trustee	290	100	10 00
J Clem Uhler, Trustee	291	100	10 00
J Clem Uhler, Trustee	292	100	10 00
J Clem Uhler, Trustee	293	100	10 00
J Clem Uhler, Trustee	294	100	10 00
J Clem Uhler, Trustee	295	100	10 00
J Clem Uhler, Trustee	296	100	10 00
J Clem Uhler, Trustee	297	100	10 00
J Clem Uhler, Trustee	298	100	10 00
J Clem Uhler, Trustee	299	100	10 00
J Clem Uhler, Trustee	300	100	10 00
J Clem Uhler, Trustee	301	100	10 00
J Clem Uhler, Trustee	302	100	10 00
J Clem Uhler, Trustee	303	200	20 00
J Clem Uhler, Trustee	305	100	10 00
J Clem Uhler, Trustee	306	20	2 00
J Clem Uhler, Trustee	307	20	2 00
J Clem Uhler, Trustee	308	20	2 00
J Clem Uhler, Trustee	309	20	2 00
J Clem Uhler, Trustee	310	20	2 00
P H Sullivan	304	25	2 50
T F Cronise, Trustee	323	1000	100 00
J Cassell, Trustee	341	100	10 00
J Cassell, Trustee	342	100	10 00
W J Ranken	350	100	10 00
W J Ranken	351	100	10 00
W J Ranken	352	100	10 00
W J Ranken	353	100	10 00
Amasa Clark	349	100	10 00
H P Coon	158	2000	200 00

And in accordance with law, and an order of the Board of Trustees, made on the 26th day of June, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction at the office of the Company, 409 California street, San Francisco, Cal., on the 22d day of August, 1872, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale. T. F. CRONISE, Secretary.

Office, 409 California street, San Francisco, California.

At a meeting of the Trustees, held this day, the above sale was postponed to Thursday, the 19th of September, A. D. 1872, at the same place and hour.

T. F. CRONISE, Secretary.

San Francisco, August 22, 1872.

Cottonwood Creek Gold Mining Com-

pany.—Location of Works, Shasta and Tehama Counties, State of California.

Notice is hereby given, that at a meeting of the Trustees of said Company, held on the 19th day of August, A. D. 1872, an assessment of seven cents per share was levied upon the capital stock of said Company payable immediately, in United States Gold Coin, to the Secretary, at the office of the Company, No. 411 California street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Tuesday, the 24th day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the 15th day of October, 1872 to pay the delinquent assessment, together with costs of advertising and expenses of the sale.

JOS. L. KING, Secretary.

Office, No. 411 California street, San Francisco, Cal.

Louise Mining Company—Location of

works, Ely Mining District, Pioche, Lincoln County, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the third (3d) day of July, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Adams, Q L	152	10	$1 00
Adams, Q L	153	10	1 00
Burke, John	213	50	5 00
Burke, John	216	50	5 00
Burke, John	217	100	10 00
Burke, John	218	100	10 00
Burke, John	223	200	20 00
Coburn, S A	85	100	10 00
Coburn, S A	89	100	10 00
Coburn, S A	90	100	10 00
Chase, A K, Trustee	110	25	2 50
Chase, A K, Trustee	111	50	5 00
Chase, A K, Trustee	113	50	5 00
Chase, A K, Trustee	154	10	1 00
Chase, A K, Trustee	155	10	1 00
Englander, L	298	50	5 00
Fischer, A	259	100	10 00
Fischer, A	260	100	10 00
Fischer, A	261	100	10 00
Fischer, A	262	100	10 00
Fischer, A	263	100	10 00
Gelcich, V	158	50	5 00
Gelcich, V	159	50	5 00
Golding, J	148	10	1 00
Goldiug, J	149	10	1 00
Golding, J	150	10	1 00
Golding, J	151	10	1 00
Grattan, C M	227	50	5 00
Grattan, C M	231	200	20 00
Ingerson, A W	245	50	5 00
Ingerson, A W	247	100	10 00
Raymond, S A	126	100	10 00
Raymond, S A	130	100	10 00
Winter, T P, Trustee	171	10	1 00
Wakelee, C H, Trustee	290	100	10 00
Wakelee, C H, Trustee	291	200	20 00
Watson, Geo P J, Trustee	294	50	500 00
Wilson, Wm M	306	100	10 00
Wilson, Wm M	311	66	6 60

And in accordance with law, and an order of the Board of Trustees, made on the 3d day of July, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, Room 5, No. 302 Montgomery street, San Francisco, Cal., on Saturday, the 7th day of September, 1872, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

WM. H. WATSON, Secretary.

Office, room 5, No. 302 Montgomery street, San Francisco. jul6.

Marcelina Silver Mining Company—Lo-

cation of works, Eureka Mining District, Lander County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trusteca of said Company, held on the 24th day of July, 1872, an assessment of Thirty (30) Cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, 419 California street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 9th day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 30th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees. CHAS. E. ELLIOT, Secretary.

Office, 419 California street, San Francisco, Cal.

The First Annual Meeting of the Stock-

holders of the Golden Chariot Gravel Mining Company, for the election of Trustees and any other business that may properly come before them, will be held at the office of the Company, No 906 Market street, San Francisco, California, the 25th day of September, 1872.

S. W. COLLINS, Secretary.

San Francisco, Aug. 31, 1872. au31-4t

Mina Rica Mining Company—Location of

works, Auburn Mining District, Placer county, State of Nevada.

Notice is hereby given that at a meeting of the Trustees of said Company, held on the 6th day of August, 1872, an assessment (No. 7) of Twenty (20) cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, 330 California street, Room 5, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 10th day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on the 30th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees. GEO. E. SPINNEY Secretary.

Office, No. 220 California street, Room No 5, San Francisco, Cal. Aug 9 4t

Morning Star Gold and Silver Mining

Company—Location of works, Great Mogul District, Alpine County, State of California.

NOTICE.—There are delinquent upon the following described Stock, on account of Assessment levied on the 12th day of July, 1872, the several amounts set opposite the names of the respective Shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Abbott, J K	263	1	$1 00
Blum, Charles	231	3	3 00
Cassidy, E	211	5	5 00
Culver, Mrs E	221	40	40 00
Coates, W H	94	22	22 00
Dandel, C	247	5	5 00
Dandel, C	244	5	5 00
Dandel, C	243	5	5 00
Domett, Mrs A	265	4	4 00
De gleman, J	210	5	5 00
Dungan, G W	117	5	5 00
Ensign, G H	263	1	1 00
Eagin, P B	267	1	1 00
Gilman, L	72	10	10 00
Gilman, L	269	10	10 00
Gilman, L	270	10	10 00
Gilman, L	271	5	5 00
Gilman, L	493	5	5 00
Gresham, Wm	611	5	5 00
Gadsby, E H	269	1	1 00
Gall, C P	215	5	5 00
Harvey, Alameda	239	20	20 00
Hyndman, Wm	205	20	20 00
Hill, Mary	229	5	5 00
Kilgour, C H	434	3	3 00
Kelly, William	257	15	15 00
Litton, Thomas	220	10	10 00
Mansell, Frederick	266	10	10 00
Marston, J C	219	2	2 00
O'Donnell, James	261	5	5 00
Palmer, Margaret	228	15	15 00
Reed, Mrs J M	246	5	5 00
Scott, L	271	1	1 00
Swartz, Mrs A	251	10	10 00
Tabor, Isaac	273	1	1 00
Vance, James	235	1	1 00
Wegeforth, George	249	10	10 00
Webster, G G	277	1	1 00
Webster, G G	279	1	1 00
Wally, David	235	5	5 00
Wally, David	235	10	10 00
Wally, David	250	15	15 00
Wally, Mrs H J	262	5	5 00
Wanken, Herman	247	5	5 00
Wanken, Herman	291	5	5 00
Wanken, Herman	218	1	1 00
Wanken, Herman	248	5	5 00
Young, Almira	296	10	10 00
Young, Almira	278	10	10 00

And in accordance with law, and an order of the Board of Trustees, made on the 12th day of July, 1872, so many shares of each parcel of said Stock as may be necessary, will be sold at public auction, at the office of the Company, Room No. 43, New Merchants' Exchange, California street, San Francisco, on the 14th day of September, 1872, at the hour of 1 o'clock P. M., of said day, to pay said delinquent Assessment thereon, together with costs of Advertising and expenses of sale.

O. H. BOGART, Secretary.

Office—Room 43, Merchants' Exchange, (3rd floor) California street, San Francisco, Cal. au24

Mount Jefferson Milling and Mining Com-

pany.—Location of works, Firet Garotte, Tuolumne county, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the Twenty-fifth day of July, A. D. 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Kingsley, S B	98	1000	$100 00
Lewis, L J, Trustee	53	200	20 00
Lewis, L J, Trustee	58	50	5 00
Lewis, L J, Trustee	59	50	5 00
Richardson, E A, Trustee	67	100	10 00
Richardson, E A, Trustee	75	100	10 00
Richardson, E A, Trustee	81	200	20 00
Sherwood, Robert	94	40	4 00

And in accordance with law, and an order of the Board of Trustees, made on the 25th day of July, 1872, so many Shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of said Company, on Monday, the 16th day of September, 1872, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. W. CLARK, Secretary.

Office, 418 California street, Room No. 2, San Francisco, Cal. aug31-3t

Norman Gold Mining Company---Location

of works, Aquednct Mining District, Amador County, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 27th day of June, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Eldridge, G C	17	100	$5 00
Eldridge, G C	18	100	5 00
Hosmer, D M, Trustee	43	300	15 00
Hosmer, D M, Trustee	44	500	25 00
Hallet, G H	19	100	5 00
Humphreys, W P	26	100	5 00
Humphreys, W P	27	100	5 00
Hynemann, S	55	100	5 00
Levingston, J	7	100	5 00
Owens, Thurston C, Trus.	155	500	25 00
Owens, Thurston C, Trus.	156	500	25 00
Plummer, M D, Trustee	2	500	25 00
Plummer, M D, Trustee	34	300	15 00
Plummer, M D, Trustee	33	80	4 00
Plummer, M D, Trustee	153	100	5 00
Sheppard, J	54	100	5 00
Stewart, G W	66	200	10 00
Sewall, G, Trustee	131	100	5 00
Sewall, G, Trustee	132	400	20 00
Thompson, J M, Trustee	14	500	25 00
Thompson, J M, Trustee	49	600	25 00
Thompson, J M, Trustee	50	300	15 00
Thompson, J M, Trustee	107	3000	150 00
Thompson, J M, Trustee	109	200	10 00
Thompson, J M, Trustee	111	75	3 75
Teewilliger, N B	16	100	5 00
Wayman, W G	21	500	25 00
Wayman, W G	22	300	15 00
Wayman, W G	47	300	15 00
Wade, Rufus	24	100	5 00
Watson, Wm H, Trustee	63	1167	58 35
Watson, Wm H, Trustee	64	1000	50 00
Watson, Wm H, Trustee	67	100	5 00
Watson, Wm H, Trustee	68	100	5 00
Watson, Wm H, Trustee	69	100	5 00
Watson, Wm H, Trustee	70	100	5 00
Watson, Wm H, Trustee	71	100	5 00
Watson, Wm H, Trustee	72	100	5 00
Watson, Wm H, Trustee	73	100	5 00
Watson, Wm H, Trustee	74	100	5 00
Watson, Wm H, Trustee	75	100	5 00
Watson, Wm H, Trustee	76	100	5 00
Watson, Wm H, Trustee	77	50	2 50
Watson, Wm H, Trustee	78	50	2 50
Watson, Wm H, Trustee	79	50	2 50
Watson, Wm H, Trustee	80	50	2 50
Watson, Wm H, Trustee	81	50	2 50
Watson, Wm H, Trustee	83	50	2 50
Watson, Wm H, Trustee	83	50	2 50
Watson, Wm H, Trustee	84	50	2 50
Watson, Wm H, Trustee	86	50	2 50
Watson, Wm H, Trustee	87	20	1 00
Watson, Wm H, Trustee	88	20	1 00
Watson, Wm H, Trustee	89	20	1 00
Watson, Wm H, Trustee	90	20	1 00
Watson, Wm H, Trustee	91	20	1 00
Welson, Wm H, Trustee	92	20	1 00
Watson, Wm H, Trustee	93	20	1 00
Watson, Wm H, Trustee	96	20	1 00
Watson, Wm H, Trustee	97	30	1 50
Watson, Wm H, Trustee	98	30	1 50
Watson, Wm H, Trustee	99	30	1 50
Watson, Wm H, Trustee	100	30	1 50
Watson, Wm H, Trustee	101	30	1 50
Watson, Wm H, Trustee	102	30	1 50
Watson, Wm H, Trustee	103	30	1 50
Watson, Wm H, Trustee	104	30	1 50
Watson, Wm H, Trustee	105	30	1 50
Watson, Wm H, Trustee	100	30	1 50
Watson, Wm H, Trustee	108	666	33 30
Watson, Wm H, Trustee	130	100	5 00
Wurkheim M	110	25	1 25

And in accordence with law, and en order of the Board of Trustees, made on the 27th day of June, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, Room 5, No. 302 Montgomery street, San Francisco, Cal., on Thursday, the 22d day of August, 1872, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

WM. H. WATSON, Secretary.

Office—Room 5, No. 302 Montgomery street, San Francisco. au3-3t

POSTPONEMENT.—The above sale is postponed until Tuesday, the Seventeenth (17th) day of September, 1872, and will be held at the same hour and place. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

San Francisco, August 22, 1872.

Nevada Land and Mining Company—Lo-

cations, Spruce Mountain, Clifton, and Antelope Mining Districts, Elko County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 19th day of July, 1872, an assessment of Eight Cents per share was levied upon the capital stock of said Company, payable immediately in United Stated gold coin, to the Secretary, at his office. Any stock upon which said assessment shall remain unpaid on Saturday, the 31st day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the 19th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees. WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery street, San Francisco, California. jul20-4t

Piermont Milling and Mining Company—

Location of works, Piermont Mining District, White Pine County, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the Tenth (10th) day of July, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Briggs, Charlee A	15	583½	$350 00
Briggs, Charles A	47	101	65 60
McClure, R A	25	583½	350 00
McClure, R A	48	111	65 60
Perkins, J E, Trustee	21	1000	600 00
Perkins, J E, Trustee	23	1000	600 00
Perkins, J E, Trustee	41	381	228 50

And in accordance with law, and an order of the Board of Trustees, made on the 10th day of July, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of said company, on Tuesday, the 10th day of September, 1872, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

au17-4t J. W. CLARK, Secretary.

Office, Room No. 2, 418 California street, San Francisco, Cal.

Quail Hill Mining and Water Company—

Location of works, Calaveras county, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 22d day of August, 1872, an assessment of five dollars per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary, at the office of the company, No. 409 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the 2d day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the 24th day of October, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. F. CRONISE, Secretary.

Office—409 California street, San Francisco, Cal. au31

Silver Sprout Mining Company—Location

of works and mines, Kearsarge District, Inyo county, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said company, held on the 26th day of August, 1872, an assessment of fifty cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary at the office of the company, No. 318 California street, S. F.

Any stock upon which said assessment shall remain unpaid on the eighth day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the eighth day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. B. WINGARD, Secretary.

Office—Room No. 1, second floor, No. 318 California St., S. F. ag31-4t

Spring Mountain Tunnel Company—Lo-

cation of works, Lincoln County, Nevada.

NOTICE.—There are delinquent upon the following described Stock, on account of assessment, No. 3, levied on the 9th day of July, 1872, the several amounts set opposite the names of the respective Shareholders as follows:

Names.	No. Certificate.	No Shares.	Amount.
J M Buffington, balance	6	955	286 50
David Leahy	132	1233	369.90
S M Keeler	23	665	199.80
F A Munroe	29	50	15.00
F A Munroe	31	25	7.50
F A Munroe	33	25	7.50
Ann O'Neill	93	1333	399.90
W J Jeffards	95	20	6 00
Geo E Rogers, Trustee	120	1333	399.90
J T Pomeroy, Trustee	151	100	30.00
J T Pomeroy, Trustee	152	300	90.00
J M Buffington, Trustee	91	360	108.00
Ford H Rogers	124	1333	399.90

And in accordance with law and an order of the Board of Trustees, made on the 9th day of July, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction on the 9th day of September, 1872, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. M. BUFFINGTON, Secretary.

Office, room 37, Merchants' Exchange, California St., San Francisco, Cal.

The Piedmont Land Company—Location

of property, Alameda County, State of California.

Notice is hereby given, that at a meeting of the Directors of said Company, held on the twentieth day of August, 1872, an assessment of Two Dollars, gold coin, per share, was levied upon the capital stock of said Company, payable immediately to the Secretary of said Company, at his office, No. 522 California street, San Francisco, California. Any stock upon which said assessment shall remain unpaid, on the twenty-first day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on the second day of October, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale.

FRANK JAYNES, Secretary.

Office, No. 522 California street.

San Francisco, Cal., August 20th, 1872.

Victoria and Imperial Tunnel and Mining

Company.—Location of works, Little Cottonwood Mining District, Utah Territory.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 14th day of August, 1872, an assessment of Ten Cents (10c) per share was levied upon the capital stock of said Company, payable immediately in United States gold coin to the Secretary, at the office of the Company, Room 5, No. 302 Montgomery street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Wednesday, the 18th day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 12th day of October, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery street. au14 4t

William Penn Consolidated Gold and Sil-

ver Mining Company—Location of works, Devil's Gate District, Storey County, State of Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment (No. 2) levied on the third day of July, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Thomas Flnn	Unissued.	630	$63 00
D Murphy	Unissued.	40	4 00
H Toomy	Unissued.	1700	170 00
Thos McNamarra	Unissued.	500	50 00
H F Cutter	Unissued.	1060	105 00
B M Hartshorns	Unissued.	600	60 00
John Hewston, Jr	Unissued.	250	25 00
Chas Minturn	Unissued.	500	50 00

And in accordance with law, and en order of the Board of Trustees, made on the third day of July, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public anction, at the office of the Company, No. 6 Montgomery street, San Francisco, California, on Monday, the 2d day of September, at the hour of 2 P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

JNO. F. POPE, Secretary.

Office, No. 6 Montgomery street, San Francisco, California. aug10-4t.

Winnemucca Chief Silver Mining Com-

pany—Location of Works, Humboldt County, State of Nevada.

NOTICE.—There are delinquent upon the following described stock, on accont of assessment levied on the 19th day of June, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
John Robine	159	100	$15 00
John Robins	160	100	15 00
John Robins	161	100	15 00
John Robins	162	100	15 00
John Robins	163	100	15 00
John Robins	164	100	15 00
John Robins	165	100	15 00
John Robins	166	100	15 00
John Robins	167	100	15 00
John Robins	168	100	15 00
John Robins	176	100	15 00
John Robins	177	100	15 00
John Robins	178	100	15 00
John Robins	179	50	7 50
John Robins	209	500	75 00
John Robins, Trustee	9	500	75 00
John Robins, Trustee	19	500	75 00
John Robins, Trustee	20	500	75 00
John Robins, Trustee	21	100	15 00
John Robins, Trustee	22	100	15 00
John Robins, Trustee	23	100	15 00
John Robins, Trustee	24	100	15 00
John Robins, Trustee	25	50	7 50
John Robins, Trustee	26	50	7 50
John Robins, Trustee	27	50	7 50
T F Cronise, Trustee	111	600	75 00
T F Cronise, Trustee	112	500	75 00
T F Cronise, Trustee	113	200	30 00
T F Cronise, Trustee	114	200	30 00
T F Cronise, Trustee	115	200	30 00
T F Cronise, Trustee	116	200	30 00
T F Cronise, Trustee	117	200	30 00
T F Cronise, Trustee	118	100	15 00
T F Cronise, Trustee	119	100	15 00
T F Cronise, Trustee	120	100	15 00
T F Cronise, Trustee	121	100	15 00
T F Cronise, Trustee	122	100	15 00
T F Cronise, Trustee	123	100	15 00
T F Cronise, Trustee	124	100	15 00
T F Cronise, Trustee	125	100	15 00
T F Cronise, Trustee	126	100	15 00
T F Cronise, Trustee	127	100	15 00
T F Cronise, Trustee	128	100	15 00
T F Cronise, Trustee	129	100	15 00
T F Cronise, Trustee	130	100	15 00
T F Cronise, Trustee	131	100	15 00
T F Cronise, Trustee	132	100	15 00
T F Cronise, Trustee	133	100	15 00
T F Cronise, Trustee	134	100	15 00
T F Cronise, Trustee	135	100	15 00
T F Cronise, Trustee	136	100	15 00
T F Cronise, Trustee	137	100	15 00
T F Cronise, Trustee	138	50	7 50
T F Cronise, Trustee	139	50	7 50
T F Cronise, Trustee	140	50	7 50
T F Cronise, Trustee	141	50	7 50
T F Cronise, Trustee	142	50	7 50
T F Cronise, Trustee	143	50	7 50
T F Cronise, Trustee	144	50	7 50
T F Cronise, Trustee	145	50	7 50
T F Cronise, Trustee	147	50	7 50
T F Cronise, Trustee	148	50	7 50
T F Cronise, Trustee	149	50	7 50
T F Cronise, Trustee	150	50	7 50
T F Cronise, Trustee	151	50	7 50
T F Cronise, Trustee	152	50	7 50
T F Cronise, Trustee	153	50	7 50
T F Cronise, Trustee	154	50	7 50
T F Cronise, Trustee	155	50	7 50
T F Cronise, Trustee	158	50	7 50
T F Cronise, Trustee	157	50	7 50
T F Cronise, Trustee	172	100	15 00
T F Cronise, Trustee	173	100	15 00
A C Peachy	52	3000	450 00
A C Peachy	53	1000	150 00
P H Crossman	74	200	30 00
J D Minor	11	100	15 00
M S Thompson	12	100	15 00
J J Lynn	13	100	15 00
O W Carter	14	100	15 00
M S Bonnifield	16	50	7 50
M S Bonnifield	17	50	7 50
T J Poulterer, Trustee	28	500	75 00
T J Poulterer, Trustee	29	500	75 00
T J Poulterer, Trustee	30	500	75 00
T J Poulterer, Trustee	32	500	75 00
T J Poulterer, Trustee	33	500	75 00
T J Poulterer, Trustee	34	500	75 00
T J Poulterer, Trustee	35	500	75 00
T J Poulterer, Trustee	36	500	75 00
T J Poulterer, Trustee	37	500	75 00
T J Poulterer, Trustee	38	500	75 00
T J Poulterer, Trustee	39	500	75 00
T J Poulterer, Trustee	40	500	75 00
T J Poulterer, Trustee	41	500	75 00
T J Poulterer, Trustee	42	500	75 00
T J Poulterer, Trustee	43	500	75 00
T J Poulterer, Trustee	44	500	75 00
T J Poulterer, Trustee	46	500	75 00
T J Poulterer, Trustee	47	500	75 00
T J Poulterer, Trustee	48	500	75 00
T J Poulterer, Trustee	49	500	75 00
T J Poulterer, Trustee	50	500	75 00
T J Poulterer, Trustee	51	500	75 00
T J Poulterer, Trustee	75	500	75 00
T J Poulterer, Trustee	76	200	30 00
T J Poulterer, Trustee	77	200	30 00
T J Poulterer, Trustee	78	100	15 00
T J Poulterer, Trustee	79	100	15 00
T J Poulterer, Trustee	80	100	15 00
T J Poulterer, Trustee	81	100	15 00
T J Poulterer, Trustee	82	100	15 00
T J Poulterer, Trustee	83	100	15 00
T J Poulterer, Trustee	84	50	7 50
T J Poulterer, Trustee	80	50	7 50
T J Poulterer, Trustee	87	50	7 50
T J Poulterer, Trustee	88	50	7 50
T J Poulterer, Trustee	89	50	7 50
T J Poulterer, Trustee	91	50	7 50
T J Poulterer, Trustee	93	25	3 75
T J Poulterer, Trustee	95	25	3 75
T J Poulterer, Trustee	96	25	3 75
T J Poulterer, Trustee	109	25	3 75
T J Poulterer, Trustee	110	25	3 75
T J Poulterer, Trustee	169	100	15 00
T J Poulterer, Trustee	170	100	15 00
T J Poulterer, Trustee	171	100	15 00
J Clem Uhler, Trustee	54	500	75 00
J Clem Uhler, Trustee	56	500	75 00
J Clem Uhler, Trustee	57	500	75 00
J Clem Uhler, Trustee	58	500	75 00
J Clem Uhler, Trustee	59	200	30 00
J Clem Uhler, Trustee	60	100	15 00
J Clem Uhler, Trustee	61	100	15 00
J Clem Uhler, Trustee	62	100	15 00
J Clem Uhler, Trustee	63	100	15 00
J Clem Uhler, Trustee	64	100	15 00
J Clem Uhler, Trustee	65	100	15 00
J Clem Uhler, Trustee	66	100	15 00
J Clem Uhler, Trustee	67	100	15 00
J Clem Uhler, Trustee	68	50	7 50
J Clem Uhler, Trustee	69	50	7 50
J Clem Uhler, Trustee	70	50	7 50
J Clem Uhler, Trustee	71	50	7 50
J Clem Uhler, Trustee	72	50	7 50
J Clem Uhler, Trustee	73	50	7 50
J Clem Uhler, Trustee	180	500	75 00
J Clem Uhler, Trustee	181	500	75 00
J Clem Uhler, Trustee	182	500	75 00
J Clem Uhler, Trustee	183	500	75 00
J Clem Uhler, Trustee	184	100	15 00
J Clem Uhler, Trustee	185	100	15 00
J Clem Uhler, Trustee	186	100	15 00
J Clem Uhler, Trustee	187	100	15 00
J Clem Uhler, Trustee	188	100	15 00
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J Clem Uhler, Trustee	190	100	15 00
J Clem Uhler, Trustee	191	100	15 00
J Clem Uhler, Trustee	192	100	15 00
J Clem Uhler, Trustee	193	100	15 00
J Clem Uhler, Trustee	194	100	15 00
J Clem Uhler, Trustee	195	100	15 00
J Clem Uhler, Trustee	196	100	15 00
J Clem Uhler, Trustee	197	100	15 00
J Clem Uhler, Trustee	198	100	15 00
J Clem Uhler, Trustee	199	50	7 50
J Clem Uhler, Trustee	200	50	7 50
J Clem Uhler, Trustee	201	50	7 50
J Clem Uhler, Trustee	202	50	7 50
J Clem Uhler, Trustee	203	50	7 50
J Clem Uhler, Trustee	204	50	7 50
J Clem Uhler, Trustee	205	50	7 50
J Clem Uhler, Trustee	206	50	7 50
J Clem Uhler, Trustee	207	50	7 50
J Clem Uhler, Trustee	208	50	7 50
L L Robinson	210	500	75 00

And in accordance with law, and an order of the Board of Trustees, made on the 19th day of June, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, No. 409 California street, San Francisco, California, on the 20th day of August, 1872, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

T. F. CRONISE, Secretary.

Office, 409 California Street, San Francisco, California.

At a meeting of the Board of Trustees held this day, the above sale was postponed to Monday, the 16th day of September, 1872, at the same place and hour.

T. F. CRONISE, Secretary.

San Francisco, Cal., August 19, 1872.

THE "LEFFEL" TURBINE Water Wheels

All sizes, and adapted to from 3 to 500 feet head

Parties desiring to economize in water power will find it for their interest to send for a catalogue and price list of the "Leffel." Power pledged equal to any Over shot in the world. Address

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LECTURES at Pacific Hall (California Theater Building) again next week. 7v25tf

Blowers, Steam Pumps, Hair Felt, Mining Tools

PORTABLE ENGINES, TURBINE WATER WHEELS, Wood and Iron Labor-Saving Machinery, Hardware, Belting, Lacing, Packing, and a general stock of Engineers', Miners', Farmers' and Mechanics' Tools and Mill Supplies.

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Steam Engines and Boilers,

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Foundry and Iron Works.

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MANUFACTURERS OF

STEAM ENGINES,

Quartz, Flour and Saw Mills,

Hayes' Improved Steam Pump, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

E. corner of Tehama and Fremont streets, above Howard street, San Francisco. 3-qy

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MACHINE WORKS,

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These Works have lately been increased, by additional Tools, and we are now able to turn out any kind of work, equal to and cheaper than any establishment in the State; that is to say:—

STEAM ENGINES,

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QUARTZ MACHINERY

Printing Presses,

AND MACHINERY MADE OF EVERY DESCRIPTION.

Improved Safety Store Hoists,

Fitted with Cutting's Patent Cams, unequaled for safety, convenience and cheapness. This Hoist can be built for about half the price of any other in use. To be seen at HAWLEY & CO.'S.

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TURNING LATHES, Etc., constantly on hand.

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Dunbar's Patent Self-Adjusting Steam Piston

PACKING, for new and old Cylinders.

And all kinds of Mining Machinery.

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RAILROAD AND OTHER IRON

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Every Variety of Shafting,

Embracing ALL SIZES of

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Of every description and size.

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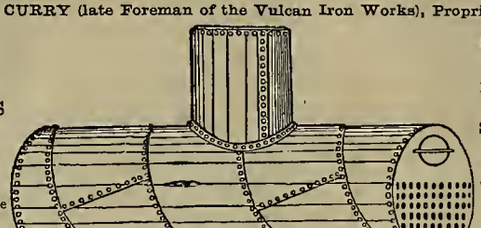
F. I. CURRY (late Foreman of the Vulcan Iron Works), Proprietor.

High and Low Pressure BOILERS of all descriptions.

SOLE Manufacturers of the CELEBRATED SPIRAL BOILER.



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All kinds of JOBBING and Repairing Promptly Attended to.

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MINING STEAM PUMPS.

DAVID STODDART,

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THE LIGHTNING MILL.

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LIGHTNING MILL,

For Pulverizing Quartz, "Charleston Rock," and all Native Phosphates, Flint, Feldspar, Iron Ore, Manganese, Antimony, Carbon, Corundum, Old Crucibles, Barytes, Brimstone, Slate, Soapstone, Graphite, Glass, Marble, Plaster, Anthracite and Bituminous Coals, etc.

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Patent Bone Mills and Crushers.

For Grinding Bones, Rock, Quartz, and all hard substances; also, Corn, Wheat, Oats, Barley, Coffee, Spices, etc.

WALKER BROS. & CO., Twenty-third and Wood Streets, Philadelphia, Sole Manufacturers of Stewart's Celebrated Patent Bone Mills and Crushers, A. W. Straub & Co.'s Patent Revolution French Burr Mill and A. Duval's Patent Centrifugal Pumps.

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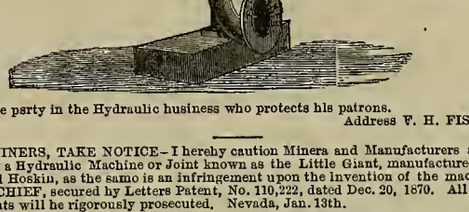
FISHER'S KNUCKLE JOINT AND NOZZLE IS THE Cheapest and Best Hydraulic Machine in use.



MACHINES Manufactured TO ORDER, to throw from One to an eight-inch STREAM.

The only reliable party in the Hydraulic business who protects his patrons.

9v23-tf Address F. H. FISHER, Nevada, Cal.

HYDRAULIC MINERS, TAKE NOTICE—I hereby caution Miners and Manufacturers against making, buying, selling or using a Hydraulic Machine or Joint known as the Little Giant, manufactured and sold by R. R. & J. Craig and Richard Hoskin, as the same is an infringement upon the invention of the machine known as FISHER'S HYDRAULIC CHIEF, secured by Letters Patent, No. 110,222, dated Dec. 20, 1870. All parties participating in such infringements will be rigorously prosecuted. Nevada, Jan. 13th. F. H. FISHER.

PORTABLE

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THORNE & DE HAVEN,

Twenty-third and Cherry Streets, Philadelphia.

These machines can be placed with as much facility as a ratchet brace, and can be used in any position, at any distance, and in any direction from the power.

The No. 1 is capable of drilling up to 1¼ inches in diameter; the No. 2 up to 1¾ inches; and the No. 3 up to 2½ inches, and boring up to 4 inches.

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2v25-3m

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EUREKA FOUNDRY,

129 and 131 Beale street, between Mission and Howard, San Francisco.

LIGHT AND HEAVY CASTINGS,

of every description, manufactured 24v16qr

Miners' Foundry and Machine Works,

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Machinery and Castings of all kinds.

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Machine Bolts, Bridge Bolts, and Ship or Band Bolts,

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Improved Stop Governor,

Manufactured at the CYCLOPS MACHINE WORKS, 113 and 115 Beale street, San Francisco.

3v24-3m WM. CALDWELL.

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Iron and Locomotive Works.

INCORPORATED.....APRIL 30, 1868.
CAPITAL.....$1,000,000.

LOCATION OF WORKS:
Corner of Beale and Howard Streets,
SAN FRANCISCO.

Manufacturers of Steam Engines, Quartz and Flour Mill Machinery, Steam Boilers (Marine, Locomotive and Stationary), Marine Engines (High and Low Pressure). All kinds of light and heavy Castings at lowest prices. Cams and Tappets, with chilled faces, guaranteed 40 per cent. more durable than ordinary iron.

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James D. Walker.

WM. H. TAYLOR.....President.
O. E. McLANE.....Vice President.
JOSEPH MOORE.....Superintendent.
LEWIS R. MEAD.....Secretary.

24v17-oy

GEO. W. PRESCOTT. C. W. SCHEIDEL. W. H. ECKART

PRESCOTT, SCHEIDELL & CO.,

MARYSVILLE FOUNDRY.

Corner of B and Fourth streets, Marysville, Cal.

MANUFACTURERS OF

STEAM ENGINES,

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SAW AND GRIST MILLS,

Hydraulic Machinery,

Quartz Crushing and Amalgamating Machinery

Of every description, constantly on hand.

Plans and estimates furnished upon application. Repairs upon all kinds of Machinery promptly made, and at moderate charges.

Having unrivalled facilities, we are prepared to make to order, at short notice, anything required in our line.

Specimens of our work may be seen in all the mining regions on this coast.

OSCAR LEWIS. S. S. MORRILL.

CITY IRON WORKS,

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Manufacturers of all kinds of Architectural and Ornamental Iron Work,

LAUNDRY MACHINERY, STEAM ENGINES, ETC.

Agricultural Work and all kinds of Blacksmithing and Johhing done with promptness and at reasonable prices. Orders from the country promptly executed.

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IRON CASTINGS of all descriptions at short notice.

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Repairing done on very Reasonable Terms and in the best manner. No. 32 Fremont street, S. F. 19v23-3m

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Portable Mills, Eureka Smut Machines
Bran Dusters, Dufour & Co.'s Celebrated Dutch Anchor Bolting Cloths, and General Mill Furnishing.

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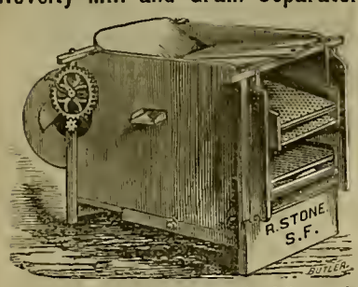
THE PATENT
Novelty Mill and Grain Separator



one of tha greatest improvements of tha aga for cleaning and separating Grain, whila it combines all tha essential qualities of a first-class Fanning Mill. It also far excels anything that has been invented for tha separation of Grain. It has been thoroughly tested on all the different kinds of mixed Grain. It takes out Mustard, Grass Seeds, Barley and Oats, and makes two distinct qualities of wheat if desired.

For further information apply to

R. STONE,
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Varney's Patent Amalgamator.

These Machines Stand Unrivaled.

For rapidity pulverizing and amalgamating ores, thay hava no equal. No effort has been, or will ha spared, to have them constructed in tha most perfect manuer and of the great numaher now in operation, not ona has ever required repairs. Tha constant and increasing damand for them is sufficient evidenca of their merits.

They are constructed so as to apply steam diractly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of tha muller forces tha pulp to the center, whera it is drawn down through the apperture and between tha grinding surfaces.—Thence it is thrown to the periphery into tha quicksilver. Tha curved plates again draw it to tha center, whera it passes down, and to tha circumferenca as hefore. Thus it is constantly passing a regular flow between tha grinding surfaces and into tha quicksilver, until tha ora is raduced to an impalpahla powder, and tha metal amalgamated.

Setlers mada on tha sama principla axcel all others They hring the pulp so constantly and parfectly in contact with quicksilver, thut tha particles are rapidly and completely absorbed.

Mill-men ara invited to axamina thesa pans and setlers for themselves, at tha office, 229 Fremont Street, San Francisco.

P. J. POTTER. J. W. HOFFMAN.

POTTER & HOFFMAN,
Railway, Engineer and Machinists' Supplies,

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Hava a large stock of all leading articles constantly on hand at lowest market rates.

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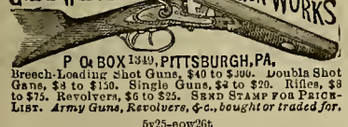

Breech-Loading Shot Guns, $40 to $300. Double Shot Guns, $8 to $150. Single Guns, $3 to $20. Rifles, $8 to $75. Revolvers, $6 to $25. SEND STAMP FOR PRICE-LIST. *Army Guns, Revolvers, &c., bought or traded for.*

5v25-eow26t

Notice is hereby given, that the copartnership heretofore existing hetween A. J. Severanca, Charles W. Randall and J. Gus. Burt, under the firm nama of "Severance, Holt & Co.," is this day dissolved by mutual consent. A. J. Severance, having purchased all the interest of his lata partners, will continue the business of manufacturing and selling Diamond Drills, as hefore, nnder tha style of A. J. Severanca & Co.

Datad San Fraucisco, Nov. 24, 1871.
Office, 315 California street. A. J. SEVERANCE,
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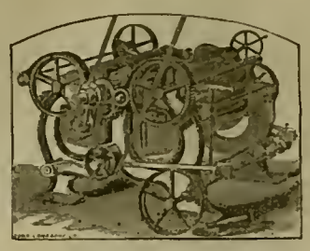

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Building Fronts, Water Pipe,
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Filters, etc., etc.,

Together with Ransome's Celabrated Frea-Grit Grindstones, all of which wa guarantee superior, and at a price far helow that of hand-cut work.

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ANTIOCH, Lake Co., Ill., Aug. 16, 1872.

Messrs. DEWEY & Co., San Francisco, Cal.—Gentlemen: Your favor of the 3d inst., informing me of the extension of my patent for apparatus for feeding quartz and other substances to crushing and grinding mills, came duly to hand. I thank you for your congratulations, but especially do I appreciate your successful management of my application.

Very respectfully yours, C. P. STANFORD.

C. P. R. R.

COMMENCING

Monday, August 26th, 1872.

And until further notice, Trains and Boats will

LEAVE SAN FRANCISCO.

7.00 A. M. Atlantic Express Train for Sacramento, Marysville, Redding, Colfax, Reno, Ogden and Omaha.

7.30 A. M. Steamer New World (from Broadway Wharf) —Connecting at Vallejo with Trains of California Pacific Railroad.

8.00 A. M. Excursion Boat (Sundays only) from Broadway Wharf, connecting with Special Train of S. F. & N. P. R. R. for Cloverdale and intermediate points, returning to San Francisco by 7 P. M.

2.00 P. M.* Stockton Steamer (from Brodway Wharf), touching at Vallejo, Benicia, and Landings on the San Joaquin river.

2.00 P. M.* Steamer Antelope, from Broadway Wharf, connecting at Donahue with Trains of S. F. and North Pacific Railroad.

3.00 P. M. San Jose Passenger Train, stopping at all way Stations.

4.00 P. M.* Sacramento Steamer (from Broadway Wharf). Touching at Vallejo, Benicia, and Landings on the Sacramento river.

4.00 P. M.* Passenger Train for Lathrop, Merced, Visalia, Tipton and Los Angeles, Stookton and Sacramento.

6.30 P. M. Overland Emigrant Train, Through Freight and Accommodation.

OAKLAND BRANCH.—LEAVE SAN FRANCISCO, 7 00 8 10, 9 2 , 10 10 and 11 20 a. m., 12 10, 1 50, 3 00, 4 00, 5 15, 6 30, 8 15 9.20 and *11 30 p. m. (8 20, 11 20 and 3 00 to Oakland only).

LEAVE BROOKLYN (for San Francisco), *5 30, 6 40, 7 50, 9 00 and 11 00 a. m., 1 30, 2 40, 4 55, 6 10, 7.55 and 10 10 p. m.

LEAVE OAKLAND, *5 40, 6 50, 8 00, 9 10, 10 00, and 11 10 a m., 12 00, 1 40, 2 50, 3 50, 5 05, 6 20, 8.05 and 10 20 p. m.

ALAMEDA BRANCH.—LEAVE SAN FRANCISCO, 7 20, 9 00 and 11 15 a. m., 1 30, 4 00, 5 30, and 7 00 p. m. (7 20, 11 15, and 5 30 to Fruit Vale only).

LEAVE HAYWARDS (for San Francisco), *3 45, 7 00 and 10 45 a. m., and 3 30 p. m.

LEAVE FRUIT VALE, *4 40, 7 35, 9 00 and 11 20 a. m., 1 30 4 05 and 5 30 p. m. *Except Sundays.

T. H. GOODMAN, Gen'l Pass'gr and Ticket Agt. A. N. TOWNE, Gen'l Supt.

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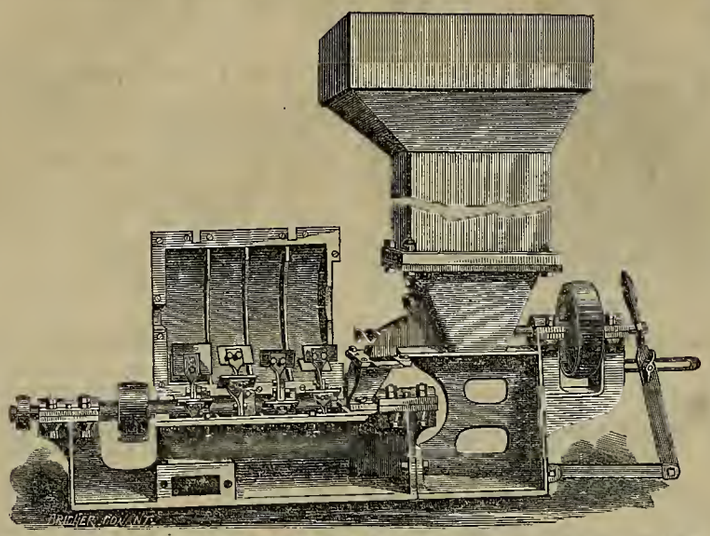

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Extract from Official Report of Mechanics' Institute Fair of San Francisco, 1871.

"In the foregoing trials it appears that the most efficient Pump on exhibition is the KNOWLES. The workmanship on this Pump is also very good. We would therefore recommend that this Pump receive a Silver Medal. (Diploma awarded). Signed by the Committee:

G. W. DICKIE, CHAS. R. STEIGER, W. EPPELSHEIMER, H. B. ANGELL, MELVILLE ATWOOD."

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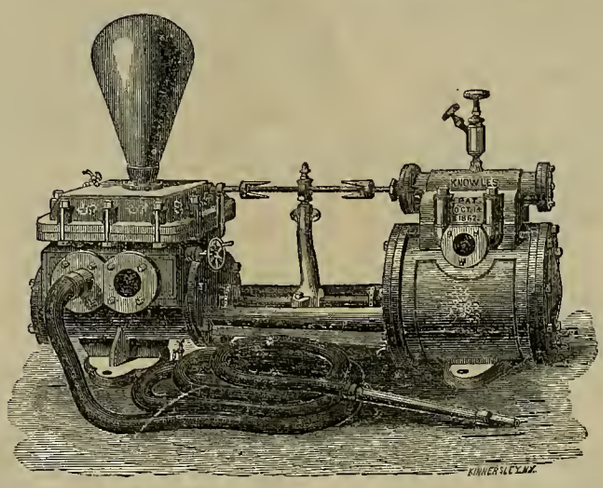

It has no Cranks or Fly-Wheel, and has no dead points where it will stop, consequently it is always ready to start without using a starting-bar, and does not require hand-work to get it past the center. Will always start when the steam cylinder is filled with cold water of condensation.

The trial of Steam Pumps at the Eighth Industrial Fair in San Francisco, by a Committee of Five of the most thoroughly practical mechanics on this coast, showed the Knowles Pump to lose but 11¼ per cent., while others lost as high as 40 per cent., showing great difference in economy.

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A. L. FISH, Agent Knowles' Steam Pump—Dear Sir: In answer to your inquiries, we state that the highest award for Steam Pumps at the Eighth or last Mechanics' Fair in San Francisco, was a *First Premium* and Diploma, awarded to the Knowles' Patent Steam Pump, as published in the Official List September 23d, 1871.

A. S. HALLIDIE, President Board of Managers.

W. H. WILLIAMS, Sec'y Board of Managers Eighth Industrial Exhibition, M. I.

BLAKE'S PATENT STEAM PUMP.

SALEM, Oregon, January 16th, 1872.

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Yours, respectfully, W. F. BOOTHY, Pres't Salem Water Works.

All sizes, for Mining, Tank and other purposes, for sale at TREADWELL & CO.'S Machinery Depot, San Francisco, where may be seen the largest stock of **Mining, Mechanical** and **Mill,** and **Agricultural Machinery,** *Portable and Hoisting Engines, Steam Pumps, Hardware,* etc., to be found in the country. 8v25eow-bp

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MACHINES, ETC.,

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Address TREADWELL & CO.,
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MINING AND SCIENTIFIC PRESS.

An Illustrated Journal of Mining, Popular Science and Progressive Industry.

BY DEWEY & CO., Patent Solicitors.

SAN FRANCISCO, SATURDAY, SEPTEMBER 7, 1872.

VOLUME XXV. Number 10.

Agassiz in the United States.

Since 1846 the biography of Prof. Agassiz belongs to the history of scientific research in the United States. In the autumn of that year he arrived in Boston from Paris, which had been for some time his home, having a two-fold object in his visit. First, the fulfilment of a mission suggested by the King of Prussia to study the natural history of this country; second, to meet an invitation extended to him to deliver a course of lectures before the Lowell Institute of Boston. Two years were allotted for the mission, the expenses of the same to be borne by the Prussian Government. In the prosecution of his object he visited New York, Philadelphia, Charleston, etc., studying, lecturing and teaching as he traveled.

How He Came to fix Upon the United States as His Future Home.

In the prosecution of his researches and studies, as above, the Professor at an early day made the acquaintance of Mr. Bache, the Superintendent of the United States Coast Survey, who cordially invited him to make free use of the facilities of the survey for the furtherance of his investigations. He was informed that he would be able to visit, without difficulty and at will, every point on the coast from Maine to Texas, in well equipped vessels built on purpose for shore navigation. Vessels, men, transportation and subsistence, were thus furnished him in just the form best adapted to the prosecution of his researches.

The offer was so liberal and the facilities so superior to anything within his reach in Europe, and moreover the field was so novel and inviting, that this distinguished lover of science could scarcely credit his good fortune. He immediately accepted the proffered favor and made his first and second trip along the coast of the southern part of Cape Cod, visiting and examining the islands of Martha's Vineyard and Nantucket with most satisfactory results. He subsequently visited other localities, everywhere meeting with great success, in a scientific point of view, with so much favor from all with whom he came in contact and with such unequalled facilities for carrying on his investigations, that he began to think seriously of making this country his permanent home.

About this time Abbott Lawrence, of Boston, founded the Scientific School at Cambridge, the professorship of zoology and geology in which, was offered to Mr. Agassiz. That offer fully decided him in his purpose to remain for the rest of his days in the rich field of research which he had here found, and that too, notwithstanding high honors, and positions promising princely returns in wealth were freely offered him if he would return to Europe.

From that period to the present, Professor Agassiz has devoted all his time and energies to original investigations connected with the geology and natural history of this Continent and its adjacent waters. He has traversed from time to time, the whole extent of the United States, from the great lakes to the Gulf of Mexico; both along the shore line and inland, as far as Lake Superior and the Mississippi; he has made an extended tour up the Amazon into the interior of South America, and has now just arrived at San Francisco from a coast and deep sea exploration, extending completely around the southern extremity of the Continent. Of course his customary success has attended this trip, also, and he has made what is probably the most extensive collection that has ever crowned any single expedition of the kind.

The Result of his Labors.

Before coming to this country Mr. A. had already obtained a world-wide reputation, and had published many valuable and extensive works upon natural science. Since his residence here he has far more than doubled the extent of such publications, the chief of which may perhaps be considered his great work under the modest title of "Contributions to the Natural History of the United States," of which four volumes have already appeared, but which will be extended to ten or more, forming a most magnificent contribution to science, and executed in the highest style of art.

Among his other works published in this country may be mentioned the report of his investigations upon the Lake Superior country; monographs upon shells, living and fossil; his researches on fossil fishes showing the relation between the living and fossil; his investigations upon past glacial action upon this Continent; preliminary reports of his examination of the Florida reefs, and various other sections of the Union, and elaborate reports of his South American expedition. He has also, during the time, been a frequent and copious contributor to the leading scientific journals of both Europe and America, and has furnished many valuable communications to various learned societies.

The collections which he has made illustrative of the various branches of natural history and which are preserved in the museum at Cambridge, are already the most extensive and valuable in the world, and we are told that additional buildings will have to be constructed in which to display the numerous additions which he will take home with him from his present trip.

And yet this lover of science, now over 65 years of age, is still thirsting to obtain and impart knowledge, in the pursuit of which he scorns wealth, declaring that "he has no time to make money," and will not allow himself to take even a moiety of the ease and comfort usually so longed for and imperatively needed by men of his age. But, while ignoring what most deem wealth, he is actually possessed of riches and honor, which future generations will recognize as of far higher value than gold or silver.

The activity and untiring energy which has ever been displayed by this devotee of science is something of itself remarkable. He is a man of great physical vigor, and possesses a constitution which has passed unharmed through most gigantic labors, and from which many years more of fruitful activity may be expected. His influence upon scientific development in the United States has been most wonderful, and will be far-reaching; for, by his example, his enthusiasm and his personal instructions he has called into energetic action a large body of young men, who are already laboring in every field of investigation and of science with a spirit of enthusiasm which no other man, living or dead, could have inspired. No other man ever possessed in such an eminent degree, the priceless faculty of inspiring in the minds of pupils such a thorough love of science, and so determined a purpose to execute. Nearly, if not all the pupils that pass under his magic influence go out into life with the same spirit which has ever animated their great master, and many will doubtless write their names high on the temple of Science.

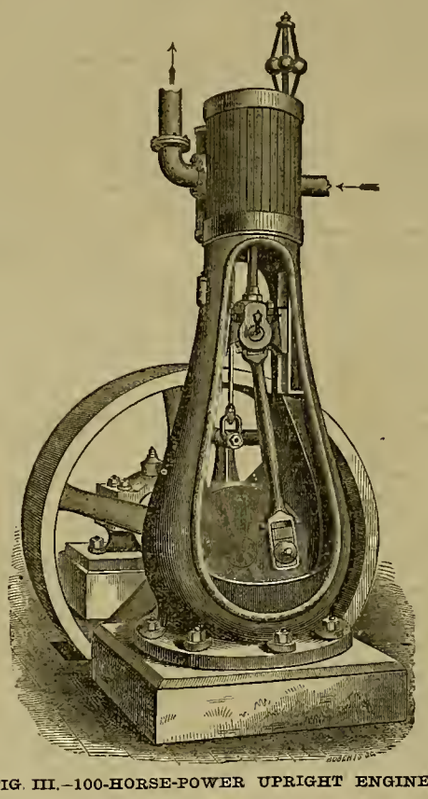

FIG. III.—100-HORSE-POWER UPRIGHT ENGINE.

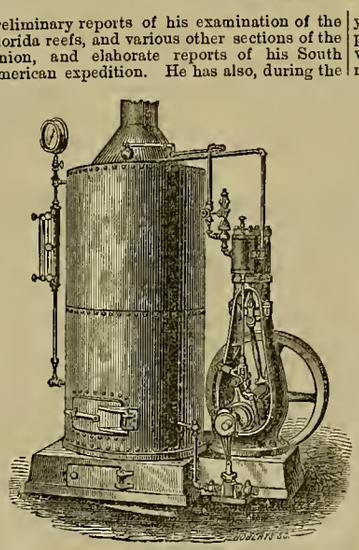

Fig. I.—Safety Upright Portable Engine & Boiler.

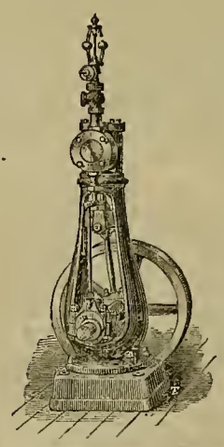

Fig. II.—2-Horse Power Engine.

Upright Portable Engines.

There has been a want long felt for a small first-class two to six-horse power portable engine and boiler, of moderate cost. The firm of Treadwell & Co., who have met with success in the introduction and improvement of the Hoadley Portable Engine, have had an engine built for them, which they are confident answers the demand, and the illustrations of which we present to-day, give a fair idea.

These engines are built by the New York Safety Steam Power Co., a very successful incorporation, (successors to Babcock & Wilcox, whose engines have been justly celebrated throughout the country for many years,) having extensive works for their manufacture at Hope Valley, Rhode Island, and ware-rooms at No. 30 Cortlandt St., New York.

Fig. 1 is an illustration of a two-horse power upright portable engine and boiler combined. The engine has a 3-inch cylinder, 5-inch stroke, which, being vertical, avoids any wear of either it or the piston. The balance wheel, from which the power is taken, being near the base, there is no vibration and that inclination to top-heaviness is entirely overcome. The engine is provided with governor and all necessary fixtures; so also, with the boiler, having safety valve, steam and water gauges, blow-off cock, gauge cocks, etc. The Davis patent balanced piston valve is used in all these engines, and an automatic cut-off put on when desired.

The boilers are of the upright tubular style, with internal fire box, and the company claim they are made of the best material and workmanship and are all tested to 150 pounds pressure per inch. The heating surface and area of grate are in excess of the quantities usually allowed for the same power and it is therefore unnecessary to purchase a greater rated power than that required for actual use.

The engine is not fastened to or upon the boiler, and is, therefore, not affected by the expansion, nor are the bearings overheated by conduction, or the ascending heat from the boiler.

These engines with boilers complete, are built from 2 to 10 horse-power, and the parts duplicated by special machinery which secures great accuracy and uniformity of workmanship, and allows of any part being quickly and cheaply replaced, when worn or broken by accident. The space occupied by the 2-horse power size is less than a yard square, thereby making them specially convenient, where economy of space is an object.

This portable engine may be entirely disconnected from the boiler, if required, and run with any other boiler—the boiler and engine being each independent of the other, and complete in itself. Fig. 2 shows the 2-horse power engine separated from the boiler—being an independent upright stationary engine.

The largest cut of engine without boiler, (Fig. 3) is a representation of the heavy 50 and 100-horse power upright engine, of similar style—but having an outside bearing to crank shaft.

Treadwell & Co. have now on exhibition at their salesrooms several sizes of these engines and will hereafter keep supplied with all sizes from 2 to 10-horse power, both with and without boilers. Parties interested can learn all further particulars from them.

CORRESPONDENCE.

Notes of Travel in Lincoln Co., Nev.

[By our Traveling Correspondent.]

Piocbe, Ely District, Nsv., now one of the most important in this State, (ontside of ths Comstock lode), in regard to the prodnction of bullion, will be my apology for trespassing upon your columns, to such length at this time. Tbs only mine in tbis celsbrated district, tbat I was allowsd no nnderground information from, was tbe

Meadow Valley.

Althougb I was treated in' ths kindest way by the gentlemanly Superintendent, Capt. Day, wbo is acting under ordere from the President, and Trusteee of tbe Company in your city. Tbe following facte I gleaned from the citizens of Pioche. It is an incorporation of $6,000,000 capital stock, in 60,000 shares; T. W. Colburn is Secretary, and Capt. H. H. Day is Superintendent. This corporation claim 34,023 feet of locatione, less than 1,000 feet of whicb lie between the Raymond & Ely, Ligbtner sbaft location, and tbe Washington & Creole mine, on the east and west ore body of this district. The balance of tbeir locations are eituated at a point rnnning at an obtuee angle from near the center of tbeir above-mentioned ledge, bearing north of east to the boundary line of the Pioche S. M. Co's. ground, wbicb is less tban 2,500 feet in lengtb. If this company do poesess 24,000 feet of locations, tbey must be situated a mile or more distant from the present workings, which are developed by three principal sbafts, known ae No. 3, Summit and No. 7, and vary from 350 to 500 feet deep. Fine boisting works run by eteam, are erected over each of the above named ehafts, throngh which tbie mine ie principly worked. A tunnel is also run to their branch ledge of this mine, tapping the same at a deptb of ahout 200 feet, at a point near their No. 7 ehaft wbich is sitnated near the line of the Piocbe Co., the Meadow Valley Co'e. eaetern boundary. At tbie writing, Ang. 7th, this company were extracting but little ore, proportionate to the number of men employed; doing principally dead work, sinking, etc. This corporation aleo own a fine mill located in Dry Valley, some nine milee east of Pioche; 250 men find employment in and aronnd this company's mine. Next adjoining tbe Meadow Valley on the east is the .

Pioche Silver Mining Company.

Thie company is an incorporation of $2,000,000 capital stock, in 20,000 shares; J. Fry, Pres.; Chas. E. Elliott, Sec., and J. R. Jamee, Supt.; R. B. Ross, principal Foreman. This company now own 2,400 feet on tbe ledge, extending from the Meadow Valley S. M. Co'e. line on the east, to the Pioche extension and other emaller companiee on tbe west; (1,400 feet hae heen added for tbis company's new strike.) A visit through thie finely and extensively developed mine, (througb tbe politeness of the gentlemanly Foremau, Mr. Rose,) exhibited to ns its underground working. This Co. have the second largeet hoisting works in this district: the engine is of 35 horee-power, erected over their principal ebaft which ie down 564 feet vertical, at the bottom of which a drift is run to the eontb 284 feet, to the ledge. At t his point it is drifted west 64 feet to the Meadow Valley line, and east 180 feet on tbe ledge, which ie a little over 2 feet thick, runs east and west, and dips to the south. Rising 100 feet to station No. 4, etarting from the ehaft at this point, a drift is run 220 feet to the ledge; this station is also drifted to tbe Meadow Valley line on the west, and for 280 feet to the eastward, all of which sbow tbe best of ore. No work is now being done on the 3d level, at this writing, but on the 2d level a drift from the shaft to the ledge running soutb, etrikes the eame at a distance of 100 feet; at this point the ledge ie drifted to the Meadow Valley line on the west, and for 220 feet also splendid ore of the eame tbicknese on the Meadow Valley side as on tbe 4th and 5th levels, but on the east it has inoreased to 3 feet thickness. Rising to the 1st level (which is within 204 feet of the surface) a drift ie run soutb 80 feet to the ledge, and drifted to the M. V. Co'e. line on the west, and for 240 feet to tbe eaetward, sbowing the eame continuous body of ore from top to bottom. Rising from station No. 1 to within 110 feet of the surface, we enter a drift, extending southwest 41 feet, and we have the same ledge as before, not as yet stoped in either direction. In driving northwest in thie station, at a distance of about 60 feet, ie a new ledge known here as

The New Strike,

Of 4 or 5 feet thickness, 3½ feet of wbich is immeneely ricb. This new deposit rune nearly north and soutb, and rests nearly perpendicular. This company employ 35 men and are extracting about 15 tons daily; a great deal of dead work haa been and is now being done on this mine, but sbortly double thia amount will be extracted. Tbia company have no mill of tbeir own, but are having tbeir rock cruabed at the Bowery Mill located at Bullionville, 12 miles distant. It costs $5 per ton to transport; tbeir rock will average tbem about $2.50 per ton; some spscial lots have assayed as higb as $3,000 psr ton; tbis mine is well worked and judiciously managed.

Chief of the Hill M. Co.

This company is incorporated witb $3,000,000 capital stock, in 30,000 shares; Jessie Wall, Pres., Chas. S. Neal, Sec., and D. Hardy, Genl. Supt. The company own 800 feet of a ledge, dipping about the same angls as all other locations on this hill. Tbe location is between the American Flag (on the south) and the "Bnrk" and "Creole" (on the north) belonging to tbe "Raymond and Ely," and parallel with tbe same. Their improvemsnt and developments consist of two shafts snnk on the ledge, one of which is 40 feet deep; from the bottom of this they bave driftsd west on the ledgs 150 feet; during their drifting to this latter point, tbe ledge averaged about four feet tbick, and over two feet of it was first class ors. At the end of tbis 150 foot drift, another sbaft is sunk following the ledge on an incline of 72 feet to a depth of 109 feet. At a point 50 feet down in this latter shaft, a drift is run eaet 100 feet, and weet from the eame point 50 feet. On tbis eaet drift they have a fine ledge two and one-half feet thick, and on the west the ledge is three and one-balf feet tbick in very fine ore, assaying as bigh as $800 per ton. At the bottom of this 109 foot shaft, which is 230 feet from the enrface, a drift ie run 105 feet west, which sbows a very fine five-foot ledge. The average assay of tbe ores of thie mine will run between $150 and $250 psr ton; tbey are working 16 men and have 300 tons of first clase ore on the dumpe. Arrangements will be entered into immediately to erect fine hoisting works; at present working by windlass. A custom mill is shortly to be erected at Pioche City, with the proprietors of whicb arrangements have already heen perfected to crusb this company's ores. Thie corporation have as fine prospecte in view ae any mine in the dietrict tbat ie no furtber developed.

American Flag M. & M. Co.

This is an incorporation of $3,000,000 capital stock, in 30,000 sharee, owning 2,600 feet of locations; O. F. Giffin Pres.; Geo. R. Spinney Sec.; Saml. McMaeters, Snpt., and J. C. McDonald principal Foreman. Tbie company's mine is located three quartere of a mile southwest of Pioche city, high up on Spring mountain, just above tbe "Chief of the Hill." This mine is developed by three ehafts, one of wbich ie down 80 feet, the eecond is down 180 feet, and their principal shaft is down 280 feet, npon wbich extensive hoieting worke are in course of construction, which are expected to be completed and in running order by August 20th; tbe power of the engine is 25-horee. At the bottom of this sbaft a drift ie run 12 feet east on the ledge, whicb variee from one to three feet thick, runs east and west and dips south, at an angle of about 71°; at present, working 30 men, but wben their hoisting works are completed, 75 men will be put on this mine. The ore is considered a fair average of the dietrict. This company aleo own a 15-stamp mill, located at Bullionville, which is distant 12 miles, a little south of east. Tbe engine at tbeir mill is of 35-horse power, and the capacity of this mill ie 22 tons daily; working about 15 men. Tbe mill will start up ahout September 1st.

Sunbeam S. M. Co.,

Not incorporated: owned personally by Wm. H. Raymond and euperintended hy A. Caldwell. It ie located about one mile eaet of Pioche, one-half mile north of tbe Mocking Bird and about one-half mile east of the "American Flag mine" and supposed to be on tbe same vein. This claim (inclnding the purchase of the "Barton mine") consists of 3,000 feet of locations. Two shafte are sunk upon it 220 feet apart, to a deptb of 201 feet each. These shafte are perpendicular and cross the ledge at a depth of 25 feet, the ore body runs north of west hy south of east and pitchee southerly at an angle of about 80°. At the bottom of one of these sbafte a drift is run 80 feet south, tapping the vein at that point, whicb is ahout 2 feet thick; with a little variation the second shaft is similar to the first, arriving at tbe eame ore body at the depth obtained; at present, working 30 men. They have 200 tone of $150 ore on the dump; tbie inclndes about $35 per ton that this ore carries in gold, the halance is eilver. Exteneive hoisting works are in course of constrnction and will be in running order by September 1et. About 80 rods nortb of the "Sunbeam" is located the

Excelsior Silver Mine,

Belonging to tbe eame party, and euperintended by A. Caldwell, Esq. There is 1,000 feet in thie location—not incorporated. Two vertical ehafts are sunk npon this mine, one to the depth of 107 feet; this ehaft crosees the vein at a depth of fifty feet. From the bottom of this shaft a drift is run fifty feet south, tapping the ore body, at which point the ledge ie two and a balf feet thick, from tbis drift a level bas been run upon the vein eighty feet east, taking out splendid chloride ore, averaging about $200 per ton. The ore body in this mine runs east and west, aud dips to the eoutb, at an angle of about 70°. The second ebaft runs down vertically for 70 feet, then by incline, following the ore body for a depth of 80 feet farther. At the foot of the 70 foot level they bave drifted on the vein for 70 feet east, and about 40 feet west, in similar ore to the first sbaft, but witb a somewhat atronger ledge; working 28 men; have about 600 tons of ore on the dump; raising by whim. A mill is in course of construction (at Bullionville, 12 miles diatant) to crusb the orea of both thia and the Sunbeam, and ia expected to be running by Sept. 1st; the mill will be of 10 stamps witb all the necessary equipments to run a mill of tbat capacity. Ahout three-fourtbs of a mils east of tbe abovs, and one and a half miles from Piocbe City, is tbs

Alps S. M. Co.,

An incorporation of $3,000,000 capital stock, in 30,000 sbares; J. D. Fry, Pres.; S. M. Neal, Sec.; and J. B. Dayton, Supt. This company claim 800 feet of location, the ore body of which runs nearly east and west, and pitches north, at an angle of about 60°. This mine is dsveloped by four sbafts varying from 40 to 165 feet deep. Tbe principal working shaft is down 155 feet. At a deptb of 60 feet from ths surface, in this shaft, a drift is run east on ths ors body 55 feet. The ledgs varies from six inchss to four feet thick. At the bottom of this 115-foot shaft, a drift is run east 78 fset on the vein, varying as abovs stated. At the end of this drift a winze is snnk 25 feet deeper on the ledge. About 300 tons of ore has heeu extracted from this mine, tbs larger portion of which bas been milled; it assayed $150 per ton; the balance, eay about 75 tons, remaine on the dump. Working regnlarly 7 men; sinking on their main vertical shaft, over which, in course of time, hoisting works will be erected, to more thoroughly work the mine. About one-half mile east of the American Flag mine, is located the

Peavine S. M. 'Co.'s

Mine, an incorporation of $3,000,000 capital, in 30,000 shares; C. W. Fox, Pres.; Chas. F. Balcom, Sec.; and J. B. Dayton, Supt. This company claim 1,000 feet of location, running nearly northeast and soutbwest, tbe ledge pitcbing eouth. One shaft is down on an incline following tbe ore body for 87 feet, the first 30 feet of whicb the ledge runs 18 inchee thick; from there down it is quite narrow. At a point 30 feet from tbe surface a level is run to the west on the ledge for 40 feet, at the end of whicb tbey bave a two-foot ledge, whicb assays $200 per ton. At thie point they are about 50 feet from tbe surface, running into tbe bill, obtaining greater depth from the surface as they advance. Working nine men. The ore of this mine has in tbe past averaged about $100 per ton; they have now abont 40 tons on the dump that will go about $140 per ton.

Stirling Silver Mining Co.,

Is an incorporation of $3,000,000 capital stock, in 30,000 sbares, J. D. Frey, President; H. C. Kibbe, Secretary; and J. C. Lennon, Superintendent. Located three-quarters of a mile eaet of Pioche (Ely District), on a line with the Burk mine, and east of tbe same. This corporation own 1,200 feet on the ledge, which runs east and west, and dips to tbe south at an angle of 60°. One incline shaft is sunk near tbe center of this claim following the ledge, now down 175 feet; the ledge matter from the top down is from four to 10 feet thick. The pay ore however averages but two feet, between regularly defined walla of quartzite, as emootb ae your hand. At a depth of 200 feet (25 feet farther down) this company will commence drifting on the ledge. Steam hoisting worke are already in course of construction, to be completed within 30 daye. At present 6 men are employed on this mine by contract. Next above, and 400 feet farther up tbe hill to tbe south is the

Mocking Bird S. M. Co.'s

Mine, whicb is also an incorporation of $3,000,000 capital stock, in 30,000 shares. J. D. Frey, President; H. C. Kibbe is Secretary, and J. C. Lennon Superintendent. This company claim 1,000 feet on tbe ledge, which rune east and west, and dips eaet of eouth, at an angle of 70°. It ie east and next adjoining the "Silver Peak" mine, and on tbe eame ledge as tbe "American Flag." One incline shaft ie eunk on this mine (following the ledge) to a depth of 70 feet. After obtaining a depth of 100 feet, it is the intention of tbis company to drift upon the ledge, and mill the ore from that on. They have 160 tons of first-class ore on the dumps at this writing, obtained in course of sinking on the ledge. At present working by windlass, and employing eeven men regularly; the ore of this mine assays from $50 to $450 per ton. Passing east from tbe above, or about two miles from Piocbe City, is the.

Condor M. Co.'s

Possessions. This incorporation has a capital stock of $2,500,000 in 25,000 sharee; Wm. H. Sears, President; H. C. Kibbe, Secretary, and J. C. Lennon Superintendent; this company own 1,000 feet of a ledge running north and south, and dipping east at an angle of about 65°. They have eunk two ehafts upon this mine, one 36 feet deep, and another to a depth of 156 feet. Both of these shafts are on an incline following the ledge. From the bottom of tbis latter-mentioned ehaft, a drift is run to the south for 16 feet, sbowing a ledge from three to three and a balf feet thick, hetween regularly defined walls. The rock from thie ledge prospects from $80 to $300 per ton. They have about 150 tons of milling ore on the dumps, and are working regularly seven men. A mill of 30 tons capacity, is in course of construction for this company, located abont nine miles east of Pioche. Thie mill will be completed and in running order by Sept. 1st. It will be of the new style of rollers with rock-breaker, and amalgamation will be effected by pan process.

Pacific Tunnel M. Co.,

An incorporation of $3,000,000 capital in 30,000 shares. Chas. A. Washburn, Pres.; Wm. H. Knight, Sec., and S. R. Nichols, *acting* Supt. H. C. Church, Superintendent; residence, San Francisco, Cal. This tunnel site is located at Pioche, Nev., in Ely District, at the southeastern base of Spring Mountain, running southwest; destination to tap Spring Mountain under tbe American Flag mine, and to locate snch blind leads as may fall in their course; located in May, 1870. This tunnel is now in 875 feet.; working sevsn men by contract; eight hour shifts; size of tunnel six and a half by four feet grade; one-half inch rise to ths rod; 400 feet from the sntrance a ledge of three feet in thickness was cnt, running at right angles with tbe course of the tunnel, since which no bodies of ore have been passed through. Ths character of the formation passed through to the present working, is gray quartzite, now softer and more broken, and yellow stains of mineral-bearing rock appear, indicating the approach of a ledge. At the present writing, seven feet per day (24 bonrs,) is mads in the face of this tunnel.

Maggie Silver Mine,

Incorporated in San Francisco. Capital stock $2,500,000 in 25,000 shares. Wm. Blanding, Pres., and J. B. Martin, Supt. This company claim 1,000 feet of the lode; location, running east and west, and situated between the American Flag and Washington & Creole minee, in Ely District, abont half a mile south of Pioche. It is developed by an incline shaft, following tbe ore body for a depth 130 feet. The ledge at this point averages about three feet thick and assays from $30 to $125 per ton. Tbis company are still sinking, and working regularly six men. When a sufficient depth is obtained, boisting works will be erected, and drifts started on the ore body.

The Anna Mine,

Whicb ie the east extension of the Cbief of the Hill, is owned (hy purchase,) by the same parties interested in the latter-mentioned mine; 1,200 feet is claimed, running east; at present not being worked. It will be incorporated in a few days and men put to work immediately thereafter. The discovery shaft of the Chief of the Hill was on this company's ground and is worked up to tbe line of the Anua, whicb shows a fine, well-defined ledge of over two feet thick, running east at tbat point.

The first annual meeting of the

"The Pioche, Bullionville and Utah Railroad,"

Resulted in the election of tbe followiug officers: Pres., Gen. A. C. Page; Vice-Pres., Henry Raymond; Treas., B. F. Sides; Trustees: Col. C. W. Leighton, Henry Raymond, B. F. Sides, A. H. Emanuel and W. H. Bishop; Attorneys for the Company, Bishop & Sabin. The route is being surveyed and found to be much more practicable than wae first anticipated. As soon as tbe preliminary survey has been completed, active operations will be commeuced for the early completion of the road. Tbe road wheu completed will be one of the best paying roads in the United States. The heaviest grade will not exceed 250 feet to the mile. The gauge will be three feet; rail 20 ponnds to the yard; estimated cost per mile, $12,000. Gen. Page will go East in a few days for iron and machinery for the road. The miniug interests of Pioche will be greatly benefitted by it, as it will reduce tbe price of hauling ore one-half; saving the Raymond & Ely Co. alone $75,000 per annum in the cost of transportation of ore; Meadow Valley $60,000, and other miues in the same proportion. Sucb an enterprise mnst reenlt in the general good of tbe commnnity.

Bullionville—Mills and Furnaces.

This town is about 12 miles, sontheast of Pioche. It contains about 450 iuhapitants; they have five quartz mills and one Stedefeldt furnace, rnnning in full blaet, and one 10 etamp mill under way, that will be completed within tbree or four weeke. This place takes its name from the fact tbat all the bullion ie reduced here from tbe ores extracted at and around Piocbe.

To enumerate tbe mills of tbis place, we will mention the Raymond & Ely mills (there are two), one of 30 etamps (dry crnsher) and a 20 stamp mill working by wet crushing process, both of which are run by steam, with engines of capacity to rnn their extensive machinery, which is complete in every department. Thos. D. McMasters superintends both of the above mills. Their capacity to reduce is ahont 80 or 85 tons; sometimes, however, they reduce as high as 90 tous in 24 hours. The next in size is the American Flag Mill, the property of the American Flag M. and M. Co.; this mill superintended by Saml. McMasters, Esq., has 15 stamps, run by steam, (dry crushing) reducing about 20 tons daily.

The next is the Bowery Mill, the property of tbe Bowery M. and M. Co., this mill has ten stamps, run hy steam, (dry crushing) redncing about ten tons daily; John Collier ie Supt. of this mill.

Tbe next is tbe Pioneer Mill, tbe property of W. H. Raymond, Esq., This mill has just been thoroughly overhauled, is of five stamps, wet crusher with two settlers, and four pans; has a capacity of reducing ten tons daily; not running at this writing; this little mill was the first erected in this district; it has been a success in every particular, and was the testing aparatus, that proved this district a success.

The next, a new mill just being erected, is the Magnet Mill, Owned by W. H Raymond, being built to reduce the ores of the Sunbeam and Excelsior mines at Pioche. It is of ten stamps, double discharge, with eight pans; and four settlers, to work by dry crushing process. It is expected to be completed hy the 5th of Sept.; ia auperintended by Albert Barber; 24 men are engaged in building it; 51 men havs been employed for the last month.

The Chief District,

Discovered in Nov. of last year, to which considerable attention is being drawn at

present, is located about 12 miles south of Bullionville. There are already about 40 locations made there, the principal of which, are the Huber and the Black Hawk; six men are at work on the former, and four on the latter mentioned, taking out and assorting ore; these ledges are found three and one-half to five feet thick, running north and south, pitching west at an angle of about 40°, situated between a quartzite and porphyry formation. The Huber Co. have about 100 tons of ore on the dumps, 15 of which will, it is estimated, mill $300 per ton; the balance $100 per ton. This district contains all free milling ores.

Panaca.

This quiet little village of 250 inhabitants is located about one mile southeast of Bullionville, in Meadow Valley, Lincoln Co., Nev. It was first settled by the Mormons in the summer of 1853. The inhabitants are principally engaged in agricultural pursuits. Mr. T. J. Jones is the proprietor of the only mercantile establishment in the place, and F. M. Merrell, is the "Village Blacksmith." Its citizens are quiet and industrious people, and raise and manufacture nearly all they consume. The town is very picturesquely situated, having Court House Rock and other prominent points located in the suburbs.

The Mendha S. M. Co.,

Incorporated with a capital stock of $5,000,000, in 50,000 shares. O. F. Giffin, Prss.; Trustees: Thos. Bell, C. J. Brsnham, O. F. Giffin, James Findlay and Henry Raymond: and Henry Mathey, Supt. This corporation's mines (for there are several) are located in Highland District, seven and a half miles in a northerly direction from Pioche, in Lincoln Co., Nevada, at an elevation of about 2,000 feet higher than that of Pioche. This company own a large number of locations by purchase and location; the principle ones, however, are the Mendha and Arizona. It is estimated by competent judges that there is upon the Arizona location 7,000 or 8,000 tons of ore in sight, that will average over $100 per ton. Judging from the assays taken from different parts of the ledge, its peculiarities are many. First—its croppings are all over the hill, for hundreds of feet in every direction. Secondly—after opening up a cut for some 70 feet, the ledge is defined to run flat with the surface of the earth, and lie at this point from three to seven feet thick; which cut runs east and west. A tunnel is also run in a southerly direction into the hill for about 60 feet, finding the ledge at this point of the same dimensions and position as above mentioned.

On an adjoining mountain, at a lower elevation, about one-half mile distant from the Arizona, is located the Mendha ledge, upon which a shaft is sunk to a depth of 200 feet. From near the surface in this shaft they had about three feet of an ore body running east and west, and standing perpendicular. At a point 30 feet down, this ledge dwindled down to the thickness of a knife blade. But at a depth of 60 feet the ledge widened out to several feet, and at still greater depth, say 100 feet, a ledge 13 feet thick was passed through—again running down to a mere trace, until at a depth of 200 feet (the present depth) they have the ore body again. Working similar to the deposits on the Comstock lode. Over this shaft steam hoisting works are erected, by which all the hoisting is being done. At the depth of 100 feet in this shaft a drift is run eastward about 130 feet, and west about 120 feet, with the character of ledge, as above described. This company are about to erect a fine mill immediately; they have upon the dumps of the Mendha at this writing over 1,000 tons of ore, supposed to average $90 per ton.

Starting from the shaft of this mine, running west 250 feet, a tunnel is run into the adjoining hill for a distance of 270 feet, following the ore body all the way, which averages from one to three feet thick. From the end of the tunnel, as far as pierced, it is 160 feet to the surface; ore assays from $30 to $480 per ton; the croppings show themselves on the whole length of their location. The main portion of the lumber that supplies the city of Pioche comes from near this point, in this district, and the water that supplies the citizens of Pioche is brought in pipes from Highland District.

L. P. MC.

Flanking the Prohibitionists.—A London chemist has flanked the prohibitionists completely. He has discovered a new way of getting "discouraged," by the use of a beverage made from naphtha and ether. The most reliable M. P.'s have tested its qualities, and declare that the "how come you so" resulting from its use is far more agreeable than that of the old orthodox distillations. As it is not a distilled spirit, it does not come within the English excise law, and a special act of Parliament will be necessary to stay its manufacture and sale. And there is the difficulty. The Lords look at the conundrum very much as our M. C.'s do the franking privilege—they sort of like the thing—and Victoria has got to issue a crown writ for the creation of a new batch of peers before the knight of the mortar and pestle can be voted a nuisance by the the law-makers of the realm.

Magnetic Storms have frequently interfered so seriously with the working of the railway telegraphs in England, that before their action was understood the superintendents on the lines repeatedly reported that some one had been playing tricks with the instruments and prevented their working.

Scientific Progress.

Amalgam of Mercury and Steel and of Mercury and Cast Iron.

Mr. Verplanck Colvin, a young chemist of much promise, recently read before the Albany Institute, a paper entitled "New Phenomena in Chemistry," from which we extract the following:

I have shown that the combination of mercury and iron was long since effected; I have now to claim as a discovery the direct amalgamation of steel, even when of the toughest and hardest character. The blade of the best penknife is readily amalgamated, and suffers from the contact, while a plate of fine sheet steel, used in the manufacture of superior instruments, is easily coated with mercury and made to resemble a sheet of silver. By magnetizing soft steel, reducing a sufficient amount of it to filings, and dissolving the filings in mercury, I have procured a magnetic amalgam, in the presence of which an astatic needle is decidedly bewildered. The horse-shoe magnet which has this evening been exhibited brightly coated with and upholding an inverted arch of fluid, dripping mercury, lifts quicksilver, it is true, but quicksilver loaded with an amalgam of magnetized steel; an attraction much stronger than that evinced for an iron amalgam.

A glass tube properly charged with the magnetic amalgam exhibits the polarity of the compass needle, and has its extremities attracted and repelled by the poles of the magnet in the same manner that the poles of the compass needle are attracted and repelled. This property of the magnet amalgam is interesting, as it proves that, however minutely divided, the atoms of steel still retain their magnetism and are still influenced by the directive currents of the earth. I have not yet been able to make a very powerful needle of this kind; but, though my observations are very imperfect, am able to say that it seems to point a little more truly to the magnetic north, and from its greater inertia, to be less subject to irregular changes of variation, than the ordinary compass needle. The inertia is to be attributed to the assumption by the magnetized steel of a certain portion of the weight or specific gravity of the mercury. When this amalgam is exposed to the oxydizing influences of the atmosphere, it is gradually decomposed, carbon being liberated, and the permanent magnetism vanishing, while iron amalgam remains. This will also finally decompose, pure mercury and ferrous oxyd resulting.

Another discovery that I may claim is the direct amalgamation of cast-iron, even of the most brittle and highly carburetted character. This was first effected by means of a compound amalgam of potassium, sodium, and 'ammonium' with water; but I have since found that a simple amalgam of potassium or sodium is generally sufficient to effect the result. The surface of cast-iron may be amalgamated by placing an electro-positive or active amalgam upon it with water or an acid; a true amalgam may be similarly formed with filings.

Is Carbon a Metal?

In the course of the experiments which led to this discovery, it was my fortune to observe a phenomena of an extraordinary character. The usual brilliant surfaces of mercury is produced when cast-iron is treated with the electro-positive amalgam, and the iron is rapidly 'cut' or dissolved. The impurities of the iron, with considerable carbon, are released, and form a black mud around the bottom of amalgam.

If at this moment, before all the positive metal has been oxydized, the amalgam be removed, washed and allowed to stand, particles of amorphous carbon will be seen to emerge and float upon its mirror-like surface. Whence comes this carbon; why was it not given up before? Has it been amalgamated; and if so, has it not a metallic character? It has been suggested to me that particles of undissolved iron, containing carbon, have been carried bodily into the amalgam, and afterwards dissolved, releasing their carbon. However, this is but a conjecture; the reaction certainly deserves study.

The mere intimation that carbon, the great protean thing in nature, may after all have a metallic origin is very interesting. Those who believe in the ammonium of Berzelius or the hydrogenium of Graham, need not fear to examine the claims of carbon to a metallic parentage, nor does the existence of such a metal seem so improbable when we remember the electric conductibility of two of the allotropic forms of carbon, gas-coke, and plumbago; the first already replacing, in the voltaic batteries of the present day, the electro-negative elements, plantinum, copper, etc., while the latter replaces similar electro-negative elements when brushed, in the form of plumbago powder, upon the surface of the mold or plaster-cast which the electro-plater desires to coat with copper or other metal.

If metallic carbonium exists, it may be assumed to be an electro-negative metal. It is true that some forms of carbon are highly inflammable, but are they more so than Graham's hydrogenium? Graphite at ordinary temperatures is far from combustible, and when it burns, or when the diamond burns in oxygen gas, wrought-iron will burn also. No one doubts that iron is a metal, yet one of its purest forms is pyrophoric, taking fire and burning on contact with the atmosphere. To associate graphite with sulphur and phosphorus is to place it, a good conductor of electricity, side by side with the very enemies of traveling magnetism. For how many ages was molybdenite undistinguished from graphite, and who is there now that can instantly distinguish the one from the other? It is true that molybdenite is a sulphide of molybdenum and graphite a pure allotropic form of carbon, but may there not be one more form of carbon? There is no substance in nature more readily recognized as a metal by the unlearned than graphite; to this day it is impossible to take from it the improper title of blacklead. The experiments of Sir Benjamin Brodie with graphite, his discovery of graphic acid and its combination with ammonia (graphate of ammonia?), afford another analogy; for molybdenum has its molybdic acid, and what chemist is there that is familiar with molybdate of ammonia?

The Pneumatic Tube.

Are we on the eve of another great revolution? Not a civil war, but such a revolution as resulted from the invention of the locomotive and electric telegraph. Only thirty years ago Professor Morse was struggling to get aid of Congress to make a trial of his wonderful invention. And now another has gained permission of the Government to make another experiment, which may yet become as interesting an event in history as the trial of the famous electric wire between Baltimore and Washington.

The coming man is Albert Brisbane, for a time a resident of Irvington, and his invention is a kind of pneumatic tube, by means of which time and space are to be annihilated. His unremitting efforts last winter succeeded in getting from Congress an appropriation of $15,000, for the purpose of laying a tube between the Capitol at Washington and the Government printing office—a distance of a half-mile, and if this experiment proves satisfactory another appropriation will be granted for the construction of a tube between Washington and Baltimore—the ground of the first telegraph triumph.

This method of transit will be by hollow spheres propelled through the tube by compressed air, and some idea of the velocity with which they can be given may be got from Mr. Brisbane's prophecy that the New York papers will be sent to Chicago and St. Louis in time for eight o'clock breakfast tables. The general establishment of this mode of transportation would be a sad blow to the railroad system of the country. An immediate loss of all freight traffic would ensue to the railroads, and they with steamboats that ply our rivers would be consigned to the insignificance of mere pleasure excursion party conveyances. Although Mr. Brisbane's invention has been achieved upon the basis of an old theory, he will deserve none the less credit in case of success, for the man who most deserves the world's gratitude is he by whose effort the world derives practical benefit. The inventors's confidence in the result, and the generally acknowledged feasibility of a practical application of the pneumatic theory seem to promise success, and it is to be hoped that this coming experiment may be a satisfactory one.—*Exchange.*

Apparatus for Obtaining Water from the Depths of the Ocean.—An apparatus for obtaining water from the depths of the ocean has been invented in Germany. An open vessel of suitable form and size is lowered by means of a rope, and when the desired depth has been reached an electrical current is transmitted through a wire that accompanies the lowering rope, and this current, inducing activity in an electro-magnet attached to the apparatus, releases powerful springs, which act upon stop-cocks, thus enclosing the water at any degree of depth. Some useful experiments in the determination of the carbonic acid in sea-water have been made through the agency of this apparatus.

Sensation in the Mouse's Ear.—Dr. Schobl of Prague has made the distribution of nerves to the ear of the mouse a subject of special examination, and calls attention to the fabulous richness of this organ in nerves, the bat's wing being in comparison but poorly supplied. According to the doctor's estimate, a mouse's ear of ordinary size presents on an average 6,000 nerve terminations, or, for both ears, 12,000. The function of this elaborate development is probably, as in the case of the bat's wing, to enable the animal to guide its way through dark narrow passages.

A New Blue Color.—If metallic antimony be dissolved in *aqua regia*, after filtering through granulated glass, a solution of prussiate of potash being added as long as any precipitate is produced, a beautiful and permanent blue color is exhibited which can scarcely be distinguished from ultramarine. With chrome or zinc yellow it gives a green, almost equal in color to Schweinfurth green and far less poisonous.—*Drug Circular.*

Electricity is developed in metallic wires by merely bending them, and the development appears to be independent of any thermic action.

Mechanical Progress.

Novel Application of the Screw Principle.

Sanguine expectations appear to be entertained in some mechanical quarters that the principle of the screw will soon be successfully applied to give power to railroad brakes, instead of the lever as at present applied. A Massachusetts artisan, indeed, is said to be engaged in the invention of a screw brake which bids fair to ultimately fulfill all the conditions and answer all the tests required of it. Should this invention turn out to be possessed of the value expected for it, it will be a great desideratum, and will add one more to the long list of discoveries which are as surprising for their simplicity as for the best amount of ingenuity expended in their search. But it must be remembered that the pressure of the screw, if applied directly, is absolute, and not relative to the force applied to it. Neither is there any giving or elasticity to be expected from it. Apply power enough to the screw, and the effect is almost a dead block, and it would seem as if this must necessarily subject running gear to a jerk or strain altogether incompatible with durability. But no such effect occurs from the application of the lever brake.

The pressure is cumulative and gradually felt, and even when brought to its maximum and checked there, the train gets the advantage of all the elasticity in the material of the brake, lever, chain, or whatever apparatus is employed in applying pressure, so that if something is lost in promptness of action, more is gained in diminishing strsiniug. These are some of the reasons why it would appear to be doubtful whether the application of the screw principle will be found a practical improvement on the power of the lever, as at present employed in governing the motion of railway traine. Still the subject is one of sufficient importance to enlist the attention of our mechanics and inventors, and we hope it may be further investigated.—*Am. Manufacturer.*

Incidents in Engineering.

A late correspondent of the *Scientific American*, furnishes that paper the following with regard to "low-water" in boilers:—"I have had a considerable experience with steam, having designed, built, and run several styles of engines and boilers. When experimenting, I have several times evaporated every particle of water out of a boiler without any injurious effects, except perhaps to make the boiler leak a little. Of the boiler explosions throughout the country, one half the verdicts rendered assign the cause to low water. But simply low water will not cause explosion. The following incident will confirm this statement.

An engineer of my acquaintance, who runs a propeller engine, was at one time on Lake Michigan in sight of Milwaukee when the pumps stopped working. It being very rough weather, it was considered dangerous to stop the engine. The captain became much excited and thought the boat would be lost. The engineer told the captain that he would run the boat as far as Milwaukee without any additional water, if he would be responsible for the boiler. "Go ahead," says the captain, "I don't care a fig for the boiler, if we can get the boat and crew safe into port." The pumps were shut off, so that, if they got to working, no water could enter the boiler. They arrived safely in port with a boiler one-third full of water; the upper flues were red hot and considerably sprung, but the furnace doors were closed tight, all air drafts being stopped with ashes. The fire on the grate was allowed to die out and the boiler gradually cooled off. Strange as it may appear, the flues became straight again, and no perceptible injury to the boiler was afterwards discovered.

Crystallization in Wrought Iron.—Mr. Rosbling states that the most fibrous bar may be broken so as to show a granular and somewhat crystalline fracture, and this without undergoing any molecular change in the texture. "Take," he says, "a fibrous bar, say 10 feet long, nip it in the center all round with a cold chisel, then poise the bar upon the short edge of a large anvil and a short piece of iron placed eight or nine inches from the edge on the face of the anvil, and strike a few heavy blows upon the nip so that each blow will cause the bar to rebound and to vibrate intensely, and the result will be a granular and somewhat crystalline fracture. Now take up the two halves and nip them all around again, about one or two inches from the fractured ends, and break them off by easy blows over the *round* edge of the anvil, and the fiber will appear again. This experiment proves that a break caused by sudden jare and intense vibration may show a granular and even crystalline fracture, without having changed the molecular arrangement of the iron.—*Sci. Amer.*

Hydraulic power on the great scale (10,000 horse-power) is to be established at Bellegarde, on the Rhone, by drawing off one-third of the water of the river through a tunnel 550 yards long. The hight of the fall will be fifty feet, and it is hoped to induce the Alsatian manufacturers to settle there and establish a second Lowell.

OUR MINING SHAREHOLDERS' DIRECTORY.

[Compiled Weekly from Advertisements in Mining and Scientific Press and other S. F. Journals.]

ASSESSMENTS.

Name of Co.	Location.	Secretary.	S.F.Office.	Assm't.	Levied.	Delinq't.	Sale.
Adams Hill C. M. Co.	Eureka Dist.	W. W. Traylor.	419 Cal. St.	25.	Aug. 9.	Sept.12.	Oct. 2.
Alaska Con. M. Co.	Lyon Co., Nev.	G. R. Spinney.	320 Cal. St.	25.	Sept. 6.	Oct. 7.	Oct. 28.
American Flag M. Co.	Ely District.	Geo. R. Spinney.	320 Cal. St.	$2 50.	Sept. 2.	Oct. 8.	Nov. 1.
Arizona & Utah M. Co.	Washoe	C. H. Fish.	419 Cal. St.	$1 00.	Aug. 14.	Sept 17.	Oct. 7.
Arkansas M. Co.	Ely Dist. Nev.	Geo. Davidson.	734 Mont'gry St.	25.	July 23.	Aug. 30.	Sept. 23.
Baltimore American.	Gold Hill, Nev.	J. L. King.	411 Cal. St.	$1 00.	July 13.	Sept. 2.	Sept. 20.
Beach & Paxton.	Storey Co.Nev.	Ed. Landers.	507 Mont'gry St.		Aug. 6.	Sept. 10.	Sept. 30.
BECKWITH M. CO.	Ely District.	Wm. H. Watson.	302 Mont'gry St.	20.	Aug. 19.	Sept. 28.	Oct. 23*
Bowery Cons M. Co.	Ely Dist., Nev.	Chas. E. Elliot.	419 Cal. St.	75.	July 9.	Aug. 15.	Sep. 9.
Calaveras G. M. C.	Calaveras Co.	T. B. Wingard.	318 Cal. St.	50.	Aug. 26.	Oct. 1.	Oct. 22.
Con. Antrim M. Co.	California.	B. Voegman.	411 Cal. St.	$5 00.	Aug. 3.	Sept. 24.	Oct. 16.
Cook & Geyer M. Co.	Storey Co. Nev.	C. H. Fish.	419 Cal. St.	50.	Sept. 4.	Oct. 8.	Oct. 28.
COTTONWD CR'K M.CO.	California.	Jos. L. King.	411 Cal. St.	7.	Aug. 19.	Sept 28.	Oct. 15*
Daney M. Co.	Lyon Co., Nev.	Geo. R. Spinney.	320 Cal. St.	$1 00.	Aug 29.	Oct. 2.	Oct. 23.
Empire M. Co.	Grass Valley.	S. Pinkham.	401 Cal. St.	$40.	July 22.	Sept. 7.	Sept. 27
Empire M. Co.	I. T.	C. F. Balcom.	428 Mont'gry St.	50.	Aug. 5.	Sept. 6.	Sept. 30.
Fallis S. M. Co.	Ely District.	A. Treadwell.	Merc'nants' Ex.	25.	Aug. 26.	Oct. 2.	Oct. 22.
Francis M. Co.	Mariposa Co.	T. F. Cronise.	409 Cal. St.	75.	Aug. 20.	Sept. 20.	Oct. 15.
Giltis G. M Co.	Tuolumne Co.,	Daniel Buck.	331 Mont'gry St.	10.	July 20.	Aug. 19.	Sept. 20.
Globe M. Co.	Gold dill.	W. E. Dean.	419 Cal. St.	$1 00.	Sept. 4.	Oct. 7.	Oct. 25.
Gould & Curry S. M.Co,	Washoe.	A. K. Durbrow.	Merchants' Ex.	$15	Aug. 8.	Sept. 12.	Oct. 2.
Greenhorn G M. Co.	Grass Valley.	J. F Lightner.	438 Cal. St.	$1 50	Aug. 9.	Sept. 11.	Sept. 30.
Hale & Norcross S. M. Co.	Washoe.	J. F. Lightner.	438 Cal. St.	$5 00.	Aug.22.	Sept. 26.	Oct. 16.
Hercules S. M. Co.	Nye Co., Nev.	J. T. Milliken.	606 Merchant St.	20.	Sept. 3.	Oct. 10.	Oct. 31.
Hermes M. oC.	Ely Dist.	B. B. Minor.	411½ Cal. St	$1 00.	July 13.	Aug. 15.	Sep. 14.
Hermiguera M. Co.	Lower Cal.	J. H. Applegate.	729 Mont'gry St.	$3 00.	Sept 3.	Oct. 5.	Oct. 23.
Huhn & Hunt M. Co.	Ely District.	L. Kaplan.	M rchants Ex.	$1 00.	Aug. 30.	Oct. 4.	Oct. 24.
Ingomar S. M. Co.	Ely Dist.	C. S. Neal.	419 Cal. St.	50.	Aug. 12.	Sept.18.	Oct. 10.
Ivanhoe S. M. Co.	Ely Dist.	Daniel Buck.	331 Mont. St.	50.	Aug 10.	Sept. 10.	Oct. 1.
KINCAID FLAT M. CO.	Tuolumne Co.	R. H. Cornell.	220 Clay St.	$3 00.	July 17.	Aug. 23.	Sept. 14.*
Kinsman M. Co.	Ely District.	L. Kaplan.	Merch'nts' Ex.	50.	Aug. 26.	Oct. 1.	Oct. 21.
Lane & Kurtz M. Co.	Brit. Columbia.	B. B. Minor.	411½ Cal. St.	$5 00.	July 23.	Aug. 26.	Sept. 14.
Lemon M. & M. Co.	Eureka Dist.	I. T. Millikin.	606 Merchant.	$1 50.	Aug.14.	sept. 17.	Oct. 21.
Lyons & Wheeler M. Co.	Arizona.	T. W. Colhurn.	409 Cal. St.	10.	Sept. 2.	Oct. 4.	Oct. 21.
MARCELINA S. M. CO.	Eureka Dist.	Chas. Elliot.	419 Cal. St.	30.	July 24.	Sept. 9.	Sept. 30*
Minnesota G. & S. M.Co.	Idaho.	Wm. Willis.	419 Cal. St.	50.	Sept. 4.	Oct. 12.	Nov. 2.
Monitor Belmont M. Co.	Nye Co., Nev.	B. B. Minor.	411½ Cal. St.	$1 00.	Aug. 20.	Sept. 23.	Oct. 14.
MORNING STAR M. CO.	Alpine Co., Cal.	O. H. Bogart.	Merchants' Ex.	$1 00.	July 12.	Aug. 20.	Sept. 14.
MINA RICA M. CO.	Storey Co.	Geo. R. Spinney.	320 Cal. St.	20.	Aug. 5.	Sept. 10.	Sept. 30.*
MT. JEFFERSON M. CO.	Tuolumne Co.	J. W. Clark.	418 Cal. St.	10.	July 25.	Aug. 26.	Sept. 16.*
National M. Co.	Nye Co., Nev.	B. B. Minor.	411½ Cal. St.	50.	July 4.	Aug. 19.	Sept. 14.
National M. Co.	Nye Co., Nev.	B. B. Minor.	411½ Cal. St.	50.	Aug. 21.	Sept. 23.	Oct. 14.
Nevada L and M. Co.	Elco Co., Nev.	Wm. H. Watson.	302 Montgomery.	8.	July 18.	Aug. 30.	Sept. 30
NORMAN G. M. CO.	Amador Co.Cal.	Wm. H. Watson.	302 Montgomery.	5.	June 27.	Aug. 1.	Sept. 17.
North Oro Fino.	Idaho.	C. F. balcom.	426 Mont'gry St.	50.	Aug. 22.	Sept. 28.	Oct. 19.
Ophir S. M. Co.	Virginia, Nev.	Jos. Marks.	Merchants' Ex.	$5 00.	July 17.	Aug. 21.	Sept. 11.
O. H. Treas.	White Pine.	D. A Jeunings.	401 Cal. St.	$1 50.	Aug. 9.	Sept. 16.	Oct. 8.
Page & Panaca S.M. Co.	Ely Dist.	L. Kaplan.	Merchants' Ex.	$5 00.	Aug. 14.	Sept. 19.	Oct. 11.
Pennsylvania.	White Pine.	Daniel Buck.	331 Mont'gry.	$1 20.	Aug. 9.	Sept. 9.	Oct. 5.
PIERMONT M. & M. CO.	White Pine.	J. W. Clark.	418 Cal. St.	60.	July 10.	Aug. 12.	Sept. 10.*
Pioche W. Ex. Co.	Ely District.	T. W. Colhurn.	419 Cal. St.	30.	July 12.	Aug. 22.	Sept. 16.
Pride of Mountain M. Co.	Winnemucca.	T. W. Colhurn.	419 Cal. St.	5.	Aug. 26.	Sept. 30.	Oct. 21.
QUAIL HILL M. & W. Co.	Calaveras Co.	T. F. Cronise.	409 Cal. St.	$5 00.	Aug. 22.	Oct. 3.	Oct. 24.
Rival Slope S. M. Co.	Ely District.	E. F. Clark.	331 Mont'gry St.	25.	Aug. 24.	Sept. 24.	Oct. 16.*
Rising Star M. C o	Idaho.	Wm. Willis.	419 Cal. St.	$1 00.	Aug. 10.	Sept. 13.	Oct. 4.
SILVER SPROUT M. Co.	Kearsarge Dist.	T. B. Wingard.	318 Cal. St.	50.	Aug. 26.	Oct. 8.	Nov. 8.*
Silver West Con. M. Co.	Eureka Distrct.	F. R. Bunker.	Mont'gry Block.	50.	Aug. 26.	Oct. 5.	Oct. 30.
SPRING MT. TUNNEL.	Ely Dist., Nev.	J. M. Elington.	419 Cal. St.		July 5.	Aug. 16	Sept. 23.*
Sterling M. Co.	Ely Dist. Nev.	H. C. Kibbe.	419 Cal. St.	50.	July 15.	Aug. 21.	Sept. 12.
Tattulah M. Co.	Humboldt, Nev.	Geo. A. Hill.	18 Mont'gry St.	$3 00.	Aug. 26.	Sept. 24.	Oct. 15.
Tecumseh G. S.&M.Co.	Calaveras Co.	F. J. Hermann.	634 Wash'n St.	15.	Aug. 9.	Sept. 12.	Oct. 7.
TELLURIUM G.& S.M.CO.	Amador Co., Cal.	Wm. H. Soery.	Cr.Clay & Kirry.	$1 00.	Sept. 3.	Oct. 5.	Oct. 25*
Tehama Cons.	Schell Creek.	W. W. Stateon.	414 Cal. St.	$2.00.	Aug. 2.	Sept. 14.	Oct. 5.
Union Cons. S. M. Co.	Virginia, Nev.	B. M. Gunn.	Merchants' Ex.	50.	Aug. 7.	Sept. 10.	Sept. 30.
VICTORIA & IVP. M. CO.	Utah T.	Wm. H. Watson.	302 Mont'gry St.	15.	Aug. 14.	Sept. 18.	Oct. 12*
WINNEMUCCA CHIEF.	Nevada.	T. F. Cronise.	409 Cal. St.	15.	June 19.	July 30	Sept. 16.*
Yule Gravel M. Co.	Placer Co. Cal.	W. H. Watson.	302 Mont'gry St.	25.	Aug. 3.	Sept. 5.	Sept. 15.

MEETINGS TO BE HELD.

Name of Co.	Location.	Secretary.	Office in S.F.	An'l or Sp'l.	Date.
Baltic S. M. Co.		D. W. Davies.	608 Merchant St.	Annual.	Sept. 12.
Cook & Geyer.	Storey Co., Nev.	C. H. Fish.	419 Cal. St.	Annual.	Sept. 23.
Cosala S. M. Co.	Mexico.	Chas Baum.	510 Battery St.	Annual.	Sept. 16.
Crown Point Ravine M. Co.		B. M. Gunn.	Merchants' Ex.	Annual.	Sept. 23.
Gen. Lee S. M. Co.	White Pine.	C. F. Schultze.	426 Mont'gry St.	Annual.	Sept. 17.
Golden Chariot G. M. Co.	Idaho.	S. W. Collins.	906 Market St.	Annual.	Sept. 28.*
McMahon S. M. Co.	Schell Creek.	Geo. R. Spinney.	320 Cal. St.	Annual.	Sept. 16.
Victoria & Imperial T. M. Co.		W. H. Watson.	302 Mont'gry St.	Annual.	Sept. 12.

LATEST DIVIDENDS—Within Three Months.

Name of Co.	Location.	Secretary.	Office in S. F.	Amount.	Payable.
Belcher M. Co.	Washoe.	B. C. Kibbe.	419 California St.	$3.00	Aug. 10.
Black Diamond Coal Co.	California.			½ per cent,	June 28.
Crown Point G. & S. M. Co.	Washoe.	C. E. Elliot.	419 California St.	$3 00.	July 5.
Eastport Coos Bay Coal.	Oregon.	I. L. Pool.	Merchants' Ex.	$5 00.	Aug. 12.
Keystone Quartz M. Co.	California.	L. Vesaria.		50.	July 10.
Mahogany G. & S. M. Co.	Idaho.	T. J. Owens.	402 Mont'gry. St.	$1 50.	Aug. 7.
Meadow Valley M. Co.	Ely Dist., Nev.	T. W. Colhurn.	419 California St.	$1 00.	June 20.
Raymond & Ely M. Co.	Ely Dist., Nev.	A. J Moulder.	419 California St.	$7 00.	Aug. 10.
Pioche S. M Co.	Ely Dist., Nev.	C. E. Elliot.	419 California St.	$81 00.	Aug. 10.

—* Advertised in this journal.

Stock Sales for Week ending Sept. 7—S. F. Stock & Ex. Board.

[Entered according to Act of Congress, in the Office of the Librarian of Congress, Washington, D. C., 1872.]

NAMES OF CO'S.	Past.	Shs. in ft.	FRIDAY. Shs	Prices.	SATURDAY. Shs	Prices.	MONDAY. Shs	Prices.	TUESDAY. Shs	Prices.	WEDNESD'Y Shs	Prices.	THURSDAY. Shs	Prices.	Tot'l Sh's Sold.	Aver.	Advnc	Declin
Alpha	300	20	120	44¾@47	20	48 @49	65	40 @42½	20	36	60	42½@47	25	42 @43	310	43 45	4	
Ad'ms Hill	6400	8	200	2½@ 2¾					150	2	10	1⅞@ 2	120	2 05	280	2 05		½
Alps	800	37½	60	4½	100	4¾	100	4¾	325	4¾@ 4¾	400	4¾@ 4½	255	4¾@ 4¾	1210	4 37		⅛
Am. Flag	2800	11⅛	1000	17⅝@18¾	370	19 @20½	840	18½@20	540	16¾@17	280	17 @17½	170	17 @17¼	3200	19 11	1	
Ariz&Utah	1900	19⅝	100	1⅞	50	1			200	90c	210	85c @ 1¾	550	906	1120	1 01		⅛
Belcher	1040	10	375	116 @118	135	112¾@116	370	105 @110	400	110 @112	60	109 @110	235	109 @110	1575	111 45	8	
Baltimore	1200	20	250	3½@ 3⅝	495	3 @ 3½					30	3⅛	220	3½@ 3⅝	995	3 31		¼
Bal'ter Am	1200	20	200	3⅛											200	3⅛		
Bowery	1000	30					60	3	445	3 @ 3½	475	3¼@ 3½	210	3¼@ 3⅜	1190	3 3		
Bacon											75	2¾			195			
Buckeye		70	230	3	50	3										2 30		
Best&Bel'r	224	100									240	63@ 7	200	6⅜	1060	6 71		¼
Belmont			200	6¾	300	6⅝@ 6¾	100	6¾			125	74 @75⅜	52	69 @70	952	69 41		1
Chollar	800	10	315	69 @71	170	69 @70	30	65 @67½	240	69 @74	290	44 @46	320	42¾@45	2.05	44 62		5
Caledonia	5000	4	810	46¾@50	225	44 @49	420	43 @45	140	41 @43½	435	40 @42½	305	37 @30	2325	27 7		
Cs Virginia	1160	20¾	210	26 @30	40	27	350	23½@24½	935	28 @31	220	83@ 9	210	124 @128	115	121 @124	916	126 95		14
Confidence	130	19½	210	9¾@10	140	10¾@11					210	124 @128						
Crown Pt.	100	16⅝	201	130 @133	185	131 @132	130	124 @160	85	133 @124								
Central	70	357																
Calaveras	3200	6½									655	2¾@ 3	775	2¾@ 3	2835	274		¾
Condor			180	2½@ 2⅝	200	2⅝	510	2½@ 2¾	475	2¾			770	1⅝@ 1¾	720	1 36		½
Chaoman		12	50	1¾	200	1 @ 1⅛	100	1¾	200	1	395	8 @ 8¾	560	8¾@ 8⅞	5010	6 05		⅛
Chf'f of Hil	1000	30	695	6¾@ 7	2075	7 @ 10	300	6¾@ 8	985	8¾@ 9	50	1¾	50	1¾	150	1 41		
Daney	1000	12			50	1⅜					295	1¾@20½	215	19¾@20	2390	20 71		1¾
Eureka Cs.	1000	30	555	20 @21¾	470	22 @22½	390	21½@22	465	19¾@20	10	15			10	15		
Eureka	1650	12									10	16	40	15½	390	16 11		½
Exchequ'r	400	20	200	15¾@16	10	18	30	16 @16½	100	15 @16¾					490	11 92		
Eclipse	70	357	30	12	270	12¾@13	80	11¾@12	110	11 @11½	615	9¾@ 9¾	160	9 @ 9¼	3440	9 10		¾
Empire M.	75	16	1105	9 @ 9⅝	575	10 @10¾	445	9½@10	546	8 @ 9	600	13 @14			690	11 92		
Excelsior	1500	2½									95	13 @14			690	13		
Gould & C	1200	4	10	145	41	147½@155	15	150 @151	20	135 @140	60	11¾@12	10	11¾@12	1310	141 146	25	½
Golden C.	750	14⅜	50	@11½			20	11½	35	11 @11½			125	11 @11½	310	11 36		
Globe	1600	12½	50	2			10	2							60			
Gn.G.&S. Q		40																
Hale & Nor	400	4	60	78 @82	370	75 @76	80	70 @73	205	73 @76	10	74	125	71	850	74 80		11
H & Hunt.	3600	8¾	1085	5⅞@ 6¼	1050	5½@ 6	915	5¾@ 6	200	5¾	700	5¾@ 5½	200	5¾@ 5⅜	4340	5 74		⅞
Ida Elmore	1300	17⅝					50	13	300	12 @12½	200	11 @12	300	12 @13	850	12 21		
Imperial	184	543⅜	1775	10 @10¼	470	10¼@10⅜	1070	83@10½	750	8½@ 9	900	9½@10⅜	175	9⅛@ 9½	5140	9 71		¾
Ingomar	1000	40	450	1¾@ 1⅞			100	1¾@ 1⅞	150	1¾	435	1¾	255	1¾@ 1⅞	1430	1 84		
Independ't	2000	15					100								100			
Julia	3000	7	150	4¾	300	5	200	5⅜	195	5½@ 5¾			270	5½@ 5¾	1190	5 08		½
Justice	95	21	430	11 @11¾	365	11 @13	265	11 @11¾	105	10¾@11	10	11	180	10 @10½	1355	11 05		
Kentuck	1800	14	15	260 @270					5	260	20	2⅞@ 3	20	252 @255	45	259 56		15
Knicker'r	1200	20	430	7 @ 8	470	7¼@ 7¾	200	7 @ 7⅜	170	6¾@ 7	95	7⅜@ 7½	70	6¾	1235	7 21		1¼
Mammoth	1800	20							50	60					50	60		
Meadow V		12½	2155	28 @28	2525	29 @31	1955	30¾@33	1015	31½@32¾	1015	27½@31	1065	30½@32	9730	30 33		
Mahogany.	720	13⅞	135	13 @13½	210	12 @13½	150	12 @13	210	11½@12¾	170	10 @11½	20	10	895	12 90		3½
Ophir	1400	12	145	39 @41	340	35 @39	525	42 @43	770	44 @55	410	50 @51	800	50 @52	2980	49 25	11	
O. H. Treas	800	12½			65	4¼@ 4½	125	4¼	80	4½@ 4¾	165	4¼@ 4¾	50	4¼@ 4¾	875	4 41		
Overman	12	10	75	76 @77	75	74	180	70 @71	190	71 @75	80	70 @73	330	69 @71	930	72 41		½
Occidental	800	12½	50	2											50	2		
Pioche	1000	20	795	33¼@34	1055	29¾@31	140	30 @31½	230	29½@30	1555	25 @27	530	26 @28¾	4305	29 70		5½
Page&Pan.	2400	16⅞	550	43¾@ 4¾	400	2½	1150	2½@ 2½	125	2¾	570	2½@ 2½	1150	2½@ 2½	4345	2 81		2⅜
Pea Vine					870	1¾@ 1¾	680	1¾@ 1¾	600	1¾@ 1¾	100	1¾@ 1¾	200	1¾	2550	1 71		
Phœnix	4000	7¾	1144	4¾@ 4¾	100	4¾	680	4½@ 4½	675	4¾@ 4¾	350	4¾	350	4¾@ 4¾	3049	4 37		⅛
Ray & Ely	800	20	75	169 @172	140	168@172½	235	173 @178	75	174 @175	165	178 @181	115	175 @181	865	174 37	9	
Savage	1000	30	135	110 @115	256	114 @118	197	101 @115	485	100 @122	141	119 @125	253	112 @120	1477	114 29		5
Sg.Belcher	160	40	85	90 @95	80	89 @90	50	85 @86	45	80 @87½	30	86¼@88	40	87½@88	330	88 12		7
Sierra Nev	3000	7½	110	14	190	14 @14¼	150	12 @15½	100	14¾	150	14	185	13¾@14	785	14 00		
Succor	7600	3	50	4¾@ 4¾	150	4½@ 4¾	50	4¾	120	4½	50	6¾	125	4½	545	4 51		
Silver Hill	1800	12¾			20	6⅞	150	6½			50	16½	20	6½	240	6 59		
St. Patrick	600	23½									100	12 @12½			100	12 23		
S. Chariot.	20	250	50	2⅛	50	2					50	1⅞@ 2			250	1 91		
Trench	5400	10							25	12½					25	12½		
Wash&Or'l	200	150	270	4⅞@ 5	277	4¾@ 4¾	525	4½	1570	3½@ 4¾	325	4⅝@ 4¾	3630	4⅜	3630	4⅜		¼
Woodville	1400	20	200	3¼	550	3¾@ 3¼	315	3⅜	370	3⅜	500	3¼@ 3⅜	370	3¼	2340	3 32		
Yel Jacket	1200	25	95	116@118½	55	118½@119	5	116	80	112 @113	110	116 @119	50	113 @115	395	116 04		½
YuleGrav.	400	25																3¼

NOTE.—[early.]Over.

S. F. Stock and Exchange Board.

Thursday, September 5th, 1872.

The sales at the Board for the week ending Wednesday the 28th ult. amounted to $2,683,000. Imperial and Meadow Valley were the leading features. Thie week the market hae ehown bnt little animation. The main feature in stock circles is the wonderful devslopments in Ely District, in particularly ths Pioche, Meadow Valley and Raymond & Ely minss, and advicee from there ehow a continued improvement. Our rsaders will be interested in the very full lettere of our own correspondent from that section of country, in this and last week's issus of our paper. The extent of the mining intereste thsrs is well illustrated in even ths necssarily brief mention he has made of savsral minee. The Raymond and Ely mine has been taking out ore, since January 1871, and the daily average of bullion ehipped for last month was $12,005. They are now taking out about $370,000 per month. Ths total shipmsnts from the district through Wells, Fargo & Co.'s express from the 1st of October, 1871, to the 3d of last month, amounted to $7,079,857. According to our correspondent the amount taken from the Raymond & Ely mine alone from January 15th, 1871, to August 6th, 1872, was $2,013,437.93. August account from this mine amountsd to $372,177, and already $34,260 has come in on this month's account. The dividsnd of $7 per shars payable on ths 10th amounted to $210,000. This is the 17th dividend declsred by the company and with previous ones makes an aggregate of $2,115,000 paid to stockholders since March, 1871. One mine of this description is sufficient to keep up ths reprntation of a district, but thsre are many othsre thers with very excellent prospects.

On Friday the market ehowed a continued upward tsndency and pricee wars higher than on the prsvioue day. At the close of the afternoon Board, Crown Point showed an advance of $20 from highest price of day before, Belcher, $4, Empire Mill, $1, Yellow Jacket, $2, Imperial, $1, Gould & Curry, $10, Chollar, $1, Hale & Norcrose, $9, Kentuck, $20, Overman, $5, Savage, $11, Ophir, $2, Pioche, $2, and Meadow Valley, $3. The upward tendency was more marked than it had been for a week.

On Saturday, at close, pricee were irregular, and the market was weaker than on Friday. Savage advanced, $4, Yellow Jacket, $2, Imperial, $1.25 and Empire mill, $1.25. Belcher declined, $6, Crown Point and Caledonia each $6, Segregated Belcher, $4, Overman, $3, Hale & Norcroee, $2, Pioche, $3 and Raymond & Ely, $1.

On Monday, prices were still further depressed, especially in Washoe etocks, while the Ely stocks advanced. Imperial fell $1.25, Empire, Caledonia, Consolidated Virginia each $1, Belcher, $5, Yellow Jacket, $3, Savage, $12, and Hale & Norcroes, $6, Raymond & Ely advanced, $5, Meadow Valley, $2 and Pioche, $1.

On Tuesday the market was generally lowsr. Savage, however, advanced $16 over highest sales of day previoue, Belcher, $5, Ophir $10, and Meadow Valley $1. Other descriptione were generally lower.

Wednesday there wae eome improvement in prices. Alpha advanced $10, Caledonia, $3, Crown Point, $2, Yellow Jacket, $3, Savage, $8, Ophir and Consolidated Virginia, $3, Gould & Curry, $15, and Imperial and Empire each $1.50.

To-day prices were lower and the market dull, as will be eeen by reference to our Stock tables.

The Belcher incline ie in hard rock requiring constant blasting. The ore breaste on the various floors in the 1,000 and 1,100-foot levels remain unchanged. On the 26th of August, $23,028 was ehipped, and on the 31st $23,273. A dispatch of the 4th saye that the etopee all look well; the eouth drift, 1,200-foot level, iu splendid ore; eouth mine unchanged.

Chollar Potosi.—For the week ending August 31st, 900 tons of ore wae extracted, assaying $38.20 per ton; 844 tons were eent to mill. Everything ie about as usual in the mine but the quality of the ore as determined by car eamples, falls below that of last week. On the 29th $15,738 wae shipped.

Crown Point.—Bullion ehipped on the 29th, $34,266. Six mills are now running on ore from this mine, with a capacity of 445 tone per day.

Savage.—For week ending August 31st, 1,070 tons of ore were extracted assaying $21.-63 per ton; 1,005 tone were delivered at the mills, and 260 tons remained on the dumpe.

Hale & Norcross.—For week ending August 31st, 896 tons of ore were extracted; 500 tons were delivered at the mille, and 967 tone are on the dumps. The usual quantity of ore is being extracted from the 1,300 and 1,400-foot levels. All the ore is much mixed with porphyry and waste rock, as it is being extracted from irregular eeame, eo that great care ie taken in the sorting. No ore has been found on the 1,500-foot level.

Raymond & Ely.—On the 31st $60,438 was shipped from Raymond & Ely mine; the previous shipments in August were $311,739, making a total for the month, of $372,177, equal to $12,-005 per day. The sum of $34,260 was ehipped on the 4th inst. on September accounts equivalent to $11,420 per day.

Pioche.—A dispatch of the 2d, says: "New raiee, second level, fifty feet further east, improving; ore two and a half feet wide, assaying $250 per ton; stopee second level, three and a half ft. wide, average assaye $285; firet level, twenty inchee wide, assays $210; third level, ore is increaeing, now sixteen inchee wide, aesaye $262.

Imperial.—A letter of the 31st says: There ie no change in the general appearance of the mine. The winze from 1,600-foot level ie down about 40 feet in quartzy clay and porphyry. The last set of timbers in the incline, prior to opening the 1,700 etation, wae put in to-day. A letter of ths 2d says: The appearance of the winze shows a little more quartz and work ie being rapidly pushed.

Ths snm of $7,569.51 was shipped from the Yellow Jacket on the 29th; $2,605 from the Minnesota on the 28th, and $2,237.70 from the Bucksys on the 2d. The Yule Gravsl mine reports good progress. Ore in ths Red Jacket at a dspth of 70 feet, assaye $49 per ton. They have begun to ship ors to mill from the Golden Gate mins. A letter of the 1st inst. from the Eurska Consolidated saye the mine is looking well. Three furnaces are running and a fourth was to start up on the 2d. The last weekly clean-up of ths Eureka (Grass Valley) mine was 750 ounce e of amalgam. A richledge has been discovered in the Mahogany, that had been covered up. It is in the fifth lsvel and is two ft. wide. A four-foot ledge has bsen struck in ths Huhn & Hunt, 302 feet from the mouth of the tunnel, that assays $60. Ths sum of $1,500 was shipped from ths Excelsior (Cops District) on ths 24th. Sinking in the main shaft of ths Ophir has been resumed. The six months' receipts of the Daney mine to Sept. 1st, wsrs $75,466, and mine expensss were $55,686; othsr disbursements $12,123; cash on hand $7,657.

The following assessmsnts have been lsvied since our last issus: Alaska Cons. M. Co., Lyon Co., Nev., 25 cts.; American Flag M. Co., Ely Dist., $2; Cook & Geysr M. Co., Storey Co., Nev., 50 cte.; Globe M. Co., Gold Hill, $1; Hsrmiguera M. Co., Lower California, $3; Hercules S. M. Co., Nye Co., Nevada, 20 cts.; Huhn & Hunt M. Co., Ely Dist., $1; Lyons & Whseler M. Co., Arizona, 10 cts.; Minnesota M. Co., Idaho, 50 cts., and Tellurium M. Co., Amador Co., Cal., $1.

Mining Summary.

The following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

California.

ALPINE COUNTY.

To Start.—Monitor *Miner*, Aug. 24: Rumor has it that the Schenectady-Tarshish mine and mill will resume operations on the 1st of next month.

AMADOR COUNTY.

State of Maine.—Jackson *Ledger*, Aug. 31: The rock being taken out is of superior quality and very rich; the vein is widening, and the hanging and foot walle are clearly defined.

Good.—Jackson *Dispatch*, Aug. 31: The rock being taken out of John Campbell's mine looks splendid, and continues to increase in richnese as they go down.

INYO COUNTY.

Swansea.—Inyo *Independent*, Aug. 24: The furnaces of the Owens Silver Lead Co. are being entirely rebuilt, with new cupolae, galmadore, etc., throughout.

KERN COUNTY.

Clara Bell.—Havilah *Miner*, Aug. 24: The Clara Bell last week showed signs of "petering out." A few days since, however, the ledge suddenly widened an additional foot, and exposed to view a specimen of $40 rock.

Pendleton, Hopkine & Co., are extracting splendid grade rock from the Bacchue, averaging about $60 to the ton.

Castro.—The ore has increased several dollars in value to the ton.

NEVADA COUNTY.

Daisy Hill.—G. V. *Union*, Aug. 31: The main shaft is down 225 ft., and levels are being run both east and west from the shaft. It is the intention of the Co. to open the drifts as rapidly as poesible in order to make room for a larger working force, and before long they will commence sinking for another level.

Knight of Malta.—The shaft is down 85 or 90 ft. In the bottom of the shaft a well-developed ledge is exposed.

PLACER COUNTY.

Township Seven.—Auburn *Stars and Stripes*, Aug. 29: The total yield of this district for 6½ months was $143,020.

Items.—Auburn *Herald*, Aug. 31: At the St. Patrick they continue to raise rich ore. The Spanish ledge, East of St. Patrick mill, is looking well and prospects fine. Jones & Co., at Crater Hill, are down 145 ft., and the oreis very rich. The Bsllevue Co. are siuking their shaft with good prospecte, and also driving their main tunnel ahead and have plenty of good rock in sight. The Golden

Rich specimens are daily bronght from the numberless ledges hereabonts, which clearly shows that this is a splendid field for capitalists.

Nevada.

EUREKA DISTRICT.

New Furnaces.—Eureka *Sentinel*, August 30: Caldwell, of the Phenix Co., is making rapid progress with the new furnace.

Supt. Dangherty has a considerable portion of the walls erected for the furnace of the Ruby Hill Cons. Company.

Ruby Hill Tunnel.—The tunnel is in 187 ft., with the indication favorable for the development of a body of ore within a very short distance.

Silver West Furnace.—This first-class bullion producer is again running, and turning out 10 tons of bullion per day.

Items.—The Welch King on Prospect Mountain, incline 110 ft. in length, and over 2 ft. of gray carbonate ore shows itself in the face of the drift. Several tons of high grade ore are on the dump.

The Dolphin shows 2 ft. of ore at 15 ft. in depth, with a smooth hanging wall.

The Morris is turning out some very fine ore, and the deposit is increasing in size.

"Fourth of July" tnunel is in 140 ft., and the owners expect to strike the ledge in 110 ft. more.

Excelsior is so blocked np with oro that the mino has been shut down for the present.

Silver Lick Cons.—But two of the Co's locations are being worked at present, the Vera Cruz and Silver Lick. On the Silver Lick there is a perpendicnlar shaft 70 ft. deep, showing good ore from top to bottom.

There are on the several dumps about 200 tons of choice ore valued at $150 per ton.

ELY DIST.

Review.—Ely *Record*, Aug. 24: Aztec.—The depth of shaft is 142 ft. At the present depth the strata shows itself to be 18 inches wide, 6 inches of which is of very high grade, and assays being from $1,700 to $1,800 per ton. The Co. will commence to-morrow to sink 8 ft., making the shaft 150 ft. in depth, and will then run a drift through the foot wall some 30 ft. east and west, after which a winze will be sunk on the ledge and it is expected that a magnificent body of ore will present itself.

Jolly Traveler.—A contract has been let to sink 100 ft. The shaft is down 50 ft. and fine ore is in sight, and at the depth of 100 ft. we expect to see a first-clase mine.

Baltio.—Resumed work Aug. 12: The shaft has everything in good working order for rapid development down 45 ft. The men are kept working night and day sinking in very hard rock, and making two ft. a day.

Orleans.—The shaft is down 180 ft. and presents a very favorable appearance. Work has been resumed. A cut will be made through the foot wall to tap the ledge.

Sunbeam.—Some time ago this Co. purchased the Barton claim and are running drifte 220 ft. from the surface from that mine to the Snnbeam.

Excelsior.—In the lower levels there are 4 ft. of solid ore, averaging $200 per ton. In the upper levels, stoping is being done on fine chloride ores 2 ft. wide. The whim raises about 6 tons of ore per day.

Ivanhoe.—The prospecting shaft ie down 235 ft., with vein six ft. wide. A working shaft has been driven down 125 ft. and have etruck a magnificent body of ore 4 ft. in width, assays from which show from $100 to $1,000 to the ton.

Chapman.—Mr. Watson let a contract on this mine on the 1st. inst. to eink a 60-ft. shaft, and yesterday they had completed 30 ft. of the contract. The ore in the east slope, 240-ft. level, showe a vaet improvement. They continne hoisting ore from the 160 ft. level, which looke well.

Newark.—A contract wae let on the 20th inst., to eink 100 ft., which is being rapidly done at the rate of 4 ft. in every 24 hours.

Mocking Bird.—The einking of this shaft continnes and good progrese is being made.

Connor.—The ore in the face of the drift continues to improve. The ledge keepe constantly widening, and good ore is being raieed to the top.

Phœnix.—A new shaft will be eunk and hoisting works placed over the mine.

HUMBOLDT.

Bullion.—Unionville *Silver State*, Aug. 31: Amount shipped from the Arizona, since last issue, was $7,000.

Central Dist.—The Teamster is turning out well. Last week 2 men extracted 16 tons from the ledge. An assay showed it to contain $460 in gold and $39 in silver per ton. The vein ie 2 ft. wide.

Strike.—A fine body of ore was struck on Thnrsday in the Arizona. It is principally black sulphurets, and its extent has not yet been aecertained.

White Cloud Dist.—The Moonta copper mine, is looking remarkably well. A shaft has been sunk 70 ft. on the ledge. At the bottom the ledge is 3 ft. wide, carrying a foot and a half of first-class ore.

Indian Dist.—The Battle Mountain Co. are steadily developing their claim. The shaft is 30 ft. deep, and the ledge ie 5 ft. wide.

REESE RIVER.

North River.—Reeee River *Reveille* Aug. 26: The tnnnel of this Co. is in 600 ft.

Saratoga.—It continues good and the little hoisting engine is kept busily engaged in hoisting the dirt and ore.

Oregon Shaft—(Manhattan Co.)—Nearly 100 men are constantly employed, large quantities of fine ore are steadily being raised, and the various mines are reported as being in fine condition.

South America.—The shaft will be snnk 100 ft. deeper, for the purpose of opening new levels.

Freehold.—Main shaft going steadily downward; no ore will be raised till it reaches the required depth.

Savannah.—The shaft is progressing steadily through very hard rock. The new and powerful hoisting apparatns will bo completed in abont 3 weeks.

Lone Star.—This mine is in full blast again.

Naid Queen.—Operations suspended.

Whitlatch Union.—Breasting on the large body of ore to the left of the main incline. A new incline is to be started about 300 ft. east of the old works.

S. C. Baker.—The incline is cleared out ready for the car track.

Isabella.—Turning out large quantities of good ore; work pushing vigorously at all points.

Monoan and Muncey.—Work at the 200-ft. level has been suspended for the present; good ore coming from the 300-ft. level.

Star of Nevada.—The tnnnel is in 600-ft.

Saybaook.—The ledge recently struck in the 150-ft. east level is from 18 to 20 inches thick, and of very high grade.

Lane & Fuller—(Pacific Co.)—Everything hereabonts appears to be in a prosperons condition.

Yankee Blade—Kling & Kelley.—Two engines are kept running and a large force of men are employed.

Patriot.—The incline from the tunnel is sending out good ore.

Virginia.—The tunnel ent a blind ledge 2 or 3 weeks ago, and good ore is coming from the new discovery.

Sloan & Cooper.—Sinking on the ledge and getting good ore; down about 70 ft.

Ensign & Southal.—At work in the incline and getting some pretty good ore.

Chase Tunnel.—Davis is finding a fine qnality of ore at a point 400 ft. in from the month of the tunnel.

Morse & Cable.—An Eastern Co. has commenced operations.

Belmont. — Combination. — Running full force taking ont splendid ore, working 25 men.

Monitor Co.—Working 30 men. Ore house about full of very rich ores. Tnnnel No. 2 nearly finished, also the 300 ft. contract.

El Dorado Co.— Steadily increasing their force in both mines which are looking better than ever.

Belmont Co.—Thie Co. are einking in the main incline of their Canfield; also sinking the mein shaft of the Highbridge.

WASHOE.

Bullion.—Reno *Crescent*, Aug. 24: The shipment this week amounted to 8,899 lbs.

Local Summary.—Gold Hill *News*, Aug. 31: Belcher.— Daily yield 250 tons. The main east drift from the incline at the 1,000 ft. level hae reached 202 ft. and is discontinned. The drift north from it, toward the ore etopes, is in 57 ft. The south drift from the ore stopes to meet the last mentioned drift, is in 205 ft. from the Crown Point line, and in fine ore. The ore breaste of the 1,000 and 1,100 ft. levele still look and hold out splendidly. Work is actively resnmed at the 1,200 or lowest level, the water being drained out, and the drift south is in 132 ft. from the Crown Point line, with the face in fine ore.

Overman.—The shaft tapped a strong body of water on Tnesday.

Cons. Virginia.—On the 1,166 ft. level the cross-cut to the westward has not yet reached the ore vein. The grounds lately entered by this drift ie very hard, bnt the indicatione of the proximity of the ore vein are decidedly prominent. On the 500 ft. level the prospects of an early discovery of a concentrated body of ore are enconraging.

Utah.—The new shaft lately projected to cut the ore vein to the eastward of the old workings ie advancing rapidly toward the east clay wall. It has already attained a depth of 108 ft. below the old tunnel.

Savage.—Daily yield, 170 tons, worth $28 per ton. The incline is down 147 ft. in tongh, hard working grounds. The south drift on the 1,500 ft. level will make connection to-day with the winze from the 1,400. As eoon as the connection ie made the work of crose-cutting and prospecting the 1,500 ft. level will be again vigoronsly resumed.

Daney.—Sinking and drifting with no new developments. The shaft is 135 ft. below the 500 ft. station. The shaft is down 630 ft. and at about 650 will cross the ledge. The 6 months' receipts to date have been $75,466, and the mine expenses have been $55,686, other disbursements, $12,123; cash on hand, $7,657.87.

Ophir.—The west drift on the 700 ft. level ie in 135 ft. in mixed ledge matter, bnt showing a much more regular stratified formation than it has before encountered. The north drift is in 460 ft. in hard blasting grounds. Sinking was resnmed last Tnesday. The shaft is down 140 ft. below the 1,300 ft. level in good sinking grounds, making about 2 ft. per day.

Chollar Potosi.—Daily yield about 300 tons, assaying $43. The various ore sections are showing considerable improvement in both quantity and quality.

Julia.—Good progress is being made with the erection of both the hoisting works and machinery.

Crown Point.—Daily yield, about 450 tons, from the 1,100 and 1,200 ft. levels. The winzes from the 1,100 to the 1,200 ft. levels being free of water, are being actively sunk. Both are in excellent ore, assaying from $150 to $500 to the ton.

Occidental.—The main tunnel on the lowest level is being continued without interruption. The contractors are running the drift in vein matter.

Gould & Curry.—All work in the incline and drifts is stopped for the present on account of necessary repairs to the hoisting cables. Next week they will open the 1,600 ft. station in the incline.

Silver Hill.—The drift from the new shaft, on the first level, is 49 ft. in length.

Imperial Empire.—The winze on the 1,500 ft. level is down 40 ft. The south drift on the 1,500 is being driven vigorously ahead. The new station for the 1,600 ft. level will be opened in 3 or 4 days.

Red Jacket.—Daily yield about 10 tons, worth $50 per ton. Nine men are employed, bnt next week the force will be largely increased. Over 150 tons of ore on the dump. The ledge is improving finely, showing 5 ft. wide.

Sierra Nevada.—The mill is running steadily, crushing about 500 tons of ore per day. The breasts in both the upper and middle portions of the mine are looking better than last week.

Caledonia.—The main drift at the first level is in 450 ft., and drifting is prosecnted both north and south from it, with good indications. The fourth level is in 115 ft.

Yellow Jacket.—Daily yield 20 tons. The drift east from the incline, at the 1,500-ft. level is in 87 ft. The 1,300 ft. level is being extended northward.

Woonville.—Milling about 10 tons of high grade ore daily.

Knickerbocker.—Sinking the shaft progresses, with no increase of water. The drift at the 400-ft. level is in 55 ft. in good working ground.

Succor.—The mill is shut down temporarily at present.

Baltimore.—Shaft down 245 ft., with no increase of water. A drift will be started for the ledge when the 400-ft. level is reached.

WHITE PINE COUNTY.

Bullion.—White Pine *News*, Aug. 24: The shipment during the past week, was $25,648.18.

Treasure Hill Mines—Eberhardt & Aurora Co.'s Mines.—The connection between the Blue Belle and Keystone has not yet been made, on account of bad air in the drifts.

North Aurora.—In the Risdale and DePass chambers about 30 tons of rock are being taken out in 24 hours. Ore in the Lady's chamber has improved in quality and quantity.

Ward Beecher.—Working on the east end of the Phillpotts chamber, night and day, in a body of low grade ore, in which their is no waste. Shipping about 80 tons per day, by the tramway, to the mill.

Sunbeam.—Breasting out ore in the Moscow shaft, the ledge being about 6 ft. wide in fair ore. The mine has greatly improved during the week.

Noonday.—The ore in the new shaft has been penetrated 25 ft., the whole body being in good milling ore, intermixed with a considerable amount of high grade ore.

Treasure.—Sinking on the ore body in the lower tunnel, with considerable improvement in the quality of the ore, and taking out enough to keep the mill constantly employed. The Wheeler tunnel is steadily going ahead in the spar vein.

Pennsylvania.—Sinking on the Jackson shaft, with good indications of soon striking the ledge.

San Juan del Rio.—The contract for sinking the Dwinelle incline will be completed the coming week, and drifting is to be commenced immediately. The ore body is looking well.

Outside Dists.—Robinson. — The Canton Co.'s furnace has again started up. The Co.'s mines are looking well, and the bullion shows about $600 in gold and several hundred in silver.

Arizona.

Mines and Mining.—Prescott *Miner*, Aug. 17: On Lower Lynx creek, Mr. Lovejoy is working the rich gravel by hydranlic process.

A. B. Smyth has started sluices further up the creek, and made $20 to the hand the first day.

The miners of Yuma county are shipping ore to S. F.

Prospecting is going on in Pima and Maricopa counties.

In Yavapai county, sinking and drifting upon favorite lodes is still going on.

Mohave Co.—At Mineral Park, Hardy & Co., sinking on the Fairfield. Hardy & Co's mill is constantly running with the usual good results.

Weaver Dist.—Miliner, Felps and Marcus are at work on the Marcus lode. They have a fine-looking vein of ore, 3 ft. wide, which is paying over $100 per ton.

Colorado.

Gunnel.—Central *Register*, August 21: Pippin Bros. & Co., working Mead's property on the Gunnel are working at a depth of 170 ft. and taking out ore which yields 8 ozs. per cord.

R. C. Gray has resumed work on the Cynosure lode, Cascade Dist., Chicago Creek.

The Bobtail tunnel is being pushed rapidly, and fully 60 feet will be completed by the first of Sept.

The chlorination works of R. Cash & Co. will soon resume operations on an extended scale.

Nevada.—Nichols & Co. on the Kent Co. lode are working a force of 15 men, and are taking out about one cord of ore per day. They have attained a depth of 350 ft., and have a large and well-defined crevice of ore, which gives an average yield of 6 ozs. per cord.

Skelley & Co. have commenced work on the Sugar Tit, on Quartz Hill.

Next east of this is the Rhoderick Dhu worked by J. Scudder. This mine has reached a depth of 480 ft. He is sinking; 100 ft. above this he is mining a drift in which there is a crevice 15 inches in width of solid ore, which is easily mined.

Nelson & Co. on the Kansas, are down 250 ft., and are working 6 men.

West of Nelson & Co., D. L. Southworth is working Waterman's claims on the Kansas.

G. W. Eastabrooks is working the property on the Kansas belonging to the University Co. This mine is 386 ft. deep; 12 men are employed, and they are taking out 3 cords of ore per day.

Idaho.

Local Recoan.—Owyhee *Avalanche*, August 24: The Red Jacket north shaft is down 80 ft., and shows free gold in abundance throughout the entire width of the vein. The south shaft is down 50 ft., and in very high grade ore.

The boys are still banging away on the Revenne, and have their shaft down 45 ft., at the bottom of which the vein is about 16 inches in width. At 60 ft. a level will be started and stoping commenced.

The Morning Star hoisting shaft is 220 ft. deep with a 10-ft. sump. From the bottom of this shaft a drift is in 250 ft.

A shaft has been commenced on the Union, with good prospects. The ledge is 6 inches wide, getting larger and shows considerable free gold.

The Sportsman, on the very summit of War Eagle M., has a shaft down 50 ft., with a ledge from 2 to 5 ft. in width. They will sink 50 ft. deeper and then stope ont the ore.

The Empire shaft is down 200 ft. to the 2d level, and from there a drift is run south about 50 and north 45 ft., followed up by stopes and raising from the shaft. The ledge is from 2 to 4 ft. wide, rich in silver and easily mined. A contract has been let to sink the shaft 100 ft. for the 3d level, and is down 18 ft. The drift from the winze running north is in about 22 ft. on a ledge 2½ ft. wide.

The Minnesota shaft is finished to the 4th level, and a contract let to sink it another 100 ft. for the 5th level. Contracts have also been let to run the 4th level drift south, and to sink a winze from the 3d to the 4th. The last crushing yielded $28 a ton.

The Rising Star, Flint Dist., is opening up splendidly in the 3d level south, and good ore is also found in the winze which is going down under the Boyd shaft.

A contract has been let to sink a new shaft on the Illinois Central, 50 ft.

Montana.

French Gulch.—Deer Lodge *Independent*, Aug. 24: The placer mines of French, First Chance and Fenian, are paying as well as common. Allen's Bar diggings, north of town, are paying $15 per day to the hand. Several French Co'e. are working in First Chance, and are said to be doing well. The Swamp claim, has paid remarkably well all summer. Milot & Co., at the month of Lucky gulch, are working a large crew of men on diggings that pay from $10 to $15 per day to the hand.

One Co. near Pioneer City took ont $3,000 last week. The mines in that vicinity are all paying well.

Utah.

Star.—Utah *Journal*, Aug. 27: Gen. Connor and Gen. Page are preparing to erect a ten-stamp mill near Shenandoah.

Rich.—We have just been presented with a specimen of gold ore from Tintic which assays $44,000 to the ton.

Blue Ledge.—A gentleman just in reports the prospects there for such a new dist. unusually flattering. Several fine sales have just been completed.

Mining Accidents.—Mark Derriyetta was instantly killed on the 12th inst., by falling down the shaft in the Daney mine, while attempting to get on the cage as it was passing the level where he was.

A man named Rogers was killed in the Hercules tunnel, Colorado, on the 9th inst., under the following circumstances as detailed by the *Register*: "Rogers and his comrade were "raising," near the breast of the tunnel, to connect with a winze that had been sunk from a drift above, something over forty feet in depth. When they first broke through, the mud and water with which the aforesaid shaft was filled came in slowly. Rogers' partner deemed it expedient at this juncture of the watery proceedings to retire, and left the tunnel. Rogers thought otherwise, and sought refuge in the breast of the tunnel and was drowned.

Albert Lindsley, owner of the Marietta mine, Emigrant Gap, was severely if not fatally injured by a rock from a blast, on the 21st inst.

John Noon, of Granite Creek, Idaho, was caved on by a bank recently and had one of his

Mining Accidents.—One man was killed and another hurt at Hunt's Hill, Nev., last week, by the premature explosion of a blast. John Lindsay was also hurt in the copper mine, Brigham Cañon, from the same cause.

At the Texas mine, in Donglas Flat, Cal., last week, William Roberts was killed and his brother severely injured by being precipitated 170 feet down a shaft. The accident was caused by a defective brake-block.

Richard Nackey was badly cut and bruised about the head and shoulders on the 26th ult., in the Crown Point mine, by a quantity of rock falling upon him.

A miner named Slatterly working in the War Eagle mine, Idaho, was killed on the 29th ult., by falling down the shaft, a distance of 260 feet.

PRESS EXTRA. [Circular.]

A TABLE OF CONVENIENT DATES

For Advertising Incorporation Notices Legally in Weekly Journals on Saturdays.

Presented by DEWEY & CO., Proprietors of the Mining and Scientific Press, and Patent Agents, 338 Montgomery Street, S. E. cor. California, S. F.

1872. ASSSESSMENTS LEVIED ON	May be deemed delinquent on	Day of sale appointed on	ASSESSMENT ADVERTISED ON SATURDAYS.	SALE ADVERTISED ON SATURDAYS.
May 31 to June 6	July 6	July 27	June 8, 15, 22, 29,	July 13, 20, 27,
June 7 to June 13	July 13	Aug. 3	June 15, 22, 29, July 6,	July 20, 27, Aug 3
June 14 to June 20	July 20	Aug. 10	June 22, 29, July 6, 13.	July 27, Aug 3, 10
June 21 to June 27	July 27	Aug 17	June 29, July 6, 13, 20,	Aug 3, 10, 17.
June 28 to July 4	Aug 3	Aug. 24	July 6, 13, 20, 27,	Aug 10, 17, 24.
July 5 to July 11	Aug 10	Aug. 31	July 13, 20, 27, Aug 3	Aug 17, 24, 31.
July 12 to July 18	Aug 17	Sep. 7	July 20, 27, Aug 3, 10,	Aug 24, 31, Sep 7.
July 19 to July 25	Aug 24	Sep. 14	July 27, Aug 3, 10, 17,	Aug 31, Sep 7. 14.
July 26 to Aug. 1	Aug 31	Sep. 21	Aug 3, 10, 17, 24,	Sep 7, 14, 21.
Aug. 2 to Aug. 8	Sep. 7	Sep. 28	Aug 10, 17, 24, 31,	Sep 14. 21, 28.
Aug. 9 to Aug. 15	Sep. 14	Oct. 5	Aug 17, 24, 31, Sep 7	Sep 21, 28, Oct 5.
Aug. 16 to Aug. 22	Sep. 21	Oct. 12	Aug 24, 31, Sep 7, 14,	Sep 28, Oct 5, 12.
Aug. 23 to Aug. 29	Sep. 28	Oct. 19	Aug 31, Sep 7, 14, 21,	Oct 5, 12, 19.
Aug. 30 to Sep. 5	Oct. 5	Oct. 26	Sep 7, 14, 21. 28,	Oct 12, 19, 26.
Sep. 6 to Sep. 12	Oct. 12	Nov 2	Sep 14, 21, 28, Oct 5,	Oct 19, 26, Nov 2.
Sep. 13 to Sep. 19	Oct. 19	Nov 9	Sep 21, 28, Oct 5, 12,	Oct 26, Nov 2, 9.
Sep. 20 to Sep. 26	Oct. 26	Nov 16	Sep 28, Oct 5, 12, 19,	Nov 2, 9, 16.
Sep. 27 to Oct. 3	Nov. 2	Nov 23	Oct 5, 12, 19, 26,	Nov 9, 16, 23.
Oct. 4 to Oct. 10	Nov. 9	Nov 30	Oct 12, 19, 26, Nov 2,	Nov 16, 23, 30.
Oct. 11 to Oct. 17	Nov. 16	Dec 7	Oct 19, 26, Nov 2, 9,	Nov 23, 30, Dec 7.
Oct. 18 to Oct. 24	Nov. 23	Dec 14	Oct 26, Nov. 2, 9, 16,	Nov 30, Dec 7, 14.
Oct. 25 to Oct. 31	Nov. 30	Dec 21	Nov. 2, 9, 16, 23,	Dec 7, 14, 21.
Nov. 1 to Nov. 7	Dec. 7	Dec 28	Nov. 9, 16, 23, 30,	Dec 14, 21, 28.
Nov. 8 to Nov. 14	Dec. 14	Jan 4	Nov. 16, 23, 30, Dec 7	Dec 21, 28, Jan 4.
Nov. 15 to Nov. 21	Dec. 21	Jan 11	Nov. 23, 30, Dec 7, 14	Dec 28, Jan 4, 11.
Nov. 22 to Nov. 28	Dec. 28	Jan 18	Nov. 30, Dec 7, 14, 21,	Jan 4, 11, 18.
Nov. 29 to Dec. 5	Jan. 4	Jan 25	Dec 7, 14, 21, 28,	Jan 11, 18, 25.
Dec. 6 to Dec. 12	Jan. 11	Feb 1	Dec 14, 21, 28, Jan 4,	Jan 18, 25, Feb 1.
Dec. 13 to Dec. 19	Jan. 18	Feb 8	Dec 21, 28, Jan 4, 11,	Jan 25, Feb 1, 8.
Dec. 20 to Dec. 26	Jan. 25	Feb 15	Dec 28, Jan 4, 11, 18,	Feb 1, 8, 15.
Dec 27 to Jan 2, '73	Feb. 1	Feb 22	Jan 4, 11, 18, 25,	Feb 8, 15, 22.
Jan. 3 to Jan. 9	Feb. 8	Mar 1	Jan 11, 18, 25, Feb 1,	Feb 15, 22, Mar 1.
Jan. 10 to Jan. 16	Feb. 15	Mar 8	Jan 18, 25, Feb 1, 8,	Feb 22, Mar 1, 8.
Jan. 17 to Jan. 23	Feb. 22	Mar 15	Jan 25, Feb 1, 8, 15,	Mar 1, 8, 15.
Jan. 24 to Jan. 30	Mar. 1	Mar 22	Feb 1, 8, 15, 22,	Mar 8, 15, 22.
Jan. 31 to Feb. 6	Mar. 8	Mar 29	Feb 8, 15, 22, Mar 1,	Mar 15, 22, 29.
Feb. 7 to Feb. 13	Mar. 15	Apr 5	Feb 15, 22, Mar 1, 8,	Mar 22, 29, Apr 5.
Feb. 14 to Feb. 20	Mar. 22	Apr 12	Feb 22, Mar 1, 8, 15,	Mar 29, Apr 5, 12.
Feb. 21 to Feb. 27	Mar. 29	Apr 19	Mar 1, 8, 15, 22,	Apr 5, 12, 19.
Feb. 28 to Mar. 6	Apr. 5	Apr 26	Mar 8, 15, 22, 29,	Apr 12, 19, 26.
Mar. 7 to Mar. 13	Apr. 12	May 3	Mar 15, 22, 29, Apr 5,	Apr 19, 26, May 3.
Mar. 14 to Mar. 20	Apr. 19	May 10	Mar 22, 29, Apr 5, 12,	Apr 26, May 3, 10.
Mar. 21 to Mar. 27	Apr. 26	May 17	Mar 29, Apr 5, 12, 19,	May 3, 10, 17.
Mar. 28 to Apr. 3	May 3	May 24	Apr 5, 12, 19, 26,	May 10, 17, 24.
Apr. 4 to Apr. 10	May 10	May 31	Apr 12, 19, 26, May 3	May 17, 24, 31.
Apr. 11 to Apr. 17	May 17	June 7	Apr 19, 26, May 3, 10,	May 24, 31, June 7.
Apr. 18 to Apr. 24	May 24	June 14	Apr 26, May 3, 10, 17,	May 31, June 7, 14.
Apr. 25 to May 1	May 31	June 21	May 3, 10, 17, 24,	June 7, 14, 21.
May 2 to May 8	Jun. 7	June 28	May 10, 17, 24, 31,	June 14, 21, 28.
May 9 to May 15	Jun. 14	July 5	May 17, 24, 31, June 7,	June 21, 28, July 5.
May 16 to May 22	Jun. 21	July 12	May 24, 31, June 7, 14,	June 28, July 5, 12.
May 23 to May 29	Jun. 28	July 19	May 31, June 7, 14, 21,	July 5, 12, 19.
May 30 to June 5	July 5	July 26	June 7, 14, 21, 28,	July 12, 19, 26.
June 6 to June 12	July 12	Aug 2	June 14, 21, 28, July 5,	July 19, 26, Aug 2.
June 13 to June 19	July 19	Aug 9	June 21, 28, July 5, 12,	July 26, Aug 2, 9.
June 20 to June 26	July 26	Aug 16	June 28, July 5, 12, 19,	Aug 2, 9, 16.
June 27 to July 3	Aug 2	Aug 23	July 5, 12, 19, 26,	Aug 9, 16, 23.
July 4 to July 10	Aug 9	Aug 30	July 12, 19. 26, Aug 2,	Aug 16, 23, 30.
July 11 to July 17	Aug 16	Sep 6	July 19, 26, Aug 2, 9,	Aug 23, 30, Sep 6.
July 18 to July 24	Aug 23	Sep 13	July 26, Aug 2, 9, 16,	Aug 30, Sep 6, 13.
July 25 to July 31	Aug 30	Sep 20	Aug 2, 9, 16, 23,	Sep 6, 13, 20.
Aug. 1 to Aug. 7	Sep. 6	Sep 27	Aug 9, 16, 23, 30,	Sep 13, 20, 27.
Aug. 8 to Aug. 14	Sep. 13	Oct 4	Aug 16, 23, 30, Sep 6,	Sep 20, 27, Oct 4.
Aug. 15 to Aug. 21	Sep. 20	Oct 11	Aug 23, 30, Sep 6, 13,	Sep 27, Oct 4, 11.
Aug. 22 to Aug. 28	Sep. 27	Oct 18	Aug 30, Sep 6, 13, 20,	Oct 4, 11, 18.
Aug. 29 to Sep. 4	Oct. 4	Oct 25	Sep 6, 13, 20, 27,	Oct 11, 18, 25.
Sep. 5 to Sep. 11	Oct. 11	Nov 1	Sep 13, 20, 27, Oct 4,	Oct 18, 25, Nov 1.
Sep. 12 to Sep. 18	Oct. 18	Nov 8	Sep 20, 27, Oct 4, 11,	Oct 25, Nov 1, 8.
Sep. 19 to Sep. 25	Oct. 25	Nov 15	Sep 27, Oct 4, 11, 18,	Nov 1, 8, 15.
Sep. 26 to Oct. 2	Nov. 1	Nov 22	Oct 4, 11, 18, 25,	Nov 8, 15, 22.
Oct. 3 to Oct. 9	Nov. 8	Nov 29	Oct 11, 18, 25, Nov 1,	Nov 15, 22, 29,
Oct. 10 to Oct. 16	Nov. 15	Dec 6	Oct 18, 25, Nov 1, 8,	Nov 22, 29, Dec 6,
Oct. 17 to Oct. 23	Nov. 22	Dec 13	Oct 25, Nov 1, 8, 15,	Nov 29, Dec 6, 13,
Oct. 24 to Oct. 30	Nov. 29	Dec 20	Nov 1, 8, 15, 22,	Dec 6, 13, 20,
Oct. 31 to Nov. 6	Dec. 6	Dec 27	Nov 8, 15, 22, 29,	Dec 13, 20, 27,
Nov. 7 to Nov. 13	Dec. 13	Jan 3	Nov 15, 22, 29, Dec 6,	Dec 20, 27, Jan 3.
Nov. 14 to Nov. 20	Dec. 20	Jan 10	Nov 22, 29, Dec 6, 13,	Dec 27, Jan 3, 10.
Nov. 21 to Nov. 27	Dec. 27	Jan 17	Nov 29, Dec 6, 13, 20,	Jan 3, 10, 17.
Nov. 28 to Dec. 4	Jan. 3	Jan 24	Dec 6, 13, 20, 27,	Jan 10, 17, 24.
Dec. 5 to Dec. 11	Jan. 10	Jan 31	Dec 13, 20, 27, Jan 3,	Jan 17, 24, 31.
Dec. 12 to Dec. 18	Jan. 17	Feb 7	Dec 20, 27, Jan 3, 10,	Jan 24, 31, Feb 7.
Dec. 19 to Dec. 25	Jan. 24	Feb 14	Dec 27, Jan 3, 10, 17,	Jan 31, Feb 7, 14.
Dec 26 to Jan 1, '74	Jan. 31	Feb 21	Jan 3, 10, 17, 24,	Feb 7, 14, 21.
Jan. 2 to Jan. 8	Feb. 7	Feb 28	Jan 10, 17, 24, 31,	Feb 14, 21, 28.
Jan. 9 to Jan. 15	Feb. 14	Mar 7	Jan 17, 24, 31, Feb 7,	Feb 21, 28, Mar 7.
Jan. 16 to Jan. 22	Feb. 21	Mar 14	Jan 24, 31, Feb 7, 14,	Feb 28, Mar 7, 14.
Jan. 23 to Jan. 29	Feb. 28	Mar 21	Jan 31, Feb 7, 14, 21,	Mar 7, 14, 21.
Jan. 30 to Feb. 5	Mar. 7	Mar 28	Feb 7, 14, 21, 28,	Mar 14, 21, 28.
Feb. 6 to Feb. 12	Mar. 14	Apr 4	Feb 14, 21, 28, Mar 7,	Mar 21, 28, Apr 4.
Feb. 13 to Feb. 19	Mar. 21	Apr 11	Feb 21, 28, Mar 7, 14,	Mar 28, April 4, 11,

Advertisers in the MINING AND SCIENTIFIC PRESS will bear in mind that the large edition of the paper requires it to go to press on Thursday evening, and notices should be handed in as early as possible.

Copiee of thie table and of the Corporation Assessment Law of Californie sent free on receipt of postage stamp.

WINES of hot countries, it is eaid, poesess no odor; wines of France have it in a marked degree, but in those from the Rhine it is most intenee.

EVERY germ and every bnd of a perennial plant ie the ingrafted embryo of a new individnal.

THE excrements of roots during eutumn end winter undergo chenge. Often it requirss years to complete the destruction of the excrement of a crop before the same crop can be again made to grow. Excrements of some crops do not injure others, hence rotation of crops.

Analyzing Minerals in the Field—Extemporaneous Chemistry.

A correspondent who dates hie letter et Lebu, Chili, S. A., eddresses a note of inquiry to the London *Engineer*, which we give below, together with the *Engineer's* reply. The reply furnishes some valueble hinte on the velue of the blowpipe anelysis, end the importence of a knowledge of its use to the explorer and miner:

"I will be much obliged if you cen give me the neme of eny work on chemistry and mineralogy which will enable me by simple and quickly performed tests to detect the comperetive velue of ores, coel, building stones, metels, weters, etc. I may explain thet I am at present located in a very recently settled part of this country, the reeources of which have hitherto not been entirely explored, but I heve reason to believe that there are some valuable minerals close at hend. What I want ie a book which will direct me, eo thet specimens picked up on our jourueye could be at once roughly anelyzed, and this by meene of egents, so few and simple thet they might be carried with us in a case like our ordinary beggage. Should you know of any euch work then I will be obliged by your meutioning it in your answer to correspondente. If, on the other hand, there ehould be no work eepecially designed for this purpose, would it not be as well to suggest it in your columne?"

Reply.

Our correspondent ie partaker of a not uncommon error in supposing it possible to reduce analytical chemistry to a set of short recipes for its operatione like thoee of a cookery book. The reaeon why this impossibility existe can be eesily explained. In the culinary art, or in any other for which recipes can be provided, the substance to be operated upon is given, or known, and is assumed to be always the same, hence the same operatione npon it should produce always the eame resulte. But in chemical analysis the object is to discover the neture of a body unkuown or imperfectly known, by disentengling from eech other the elementary bodies of which it consiste, and as there ie sixty or seventy of these, which *may* be combined in numberless ways, each new combination giving riee to new aggregete properties, so any attempt to reduce even qualitative analysis to a new code of isolated rules or recipes must prove useless from ite mere voluminousness, even were it otherwise practicable.

No doubt the range of analysis ueeded by explorere of new and wild mineral regions, or other persone in the position of our correspondent, is much smaller than this, being in most instancee limited to a search after metale or a few other mineral bodies of commerciel value. But even within euch restricted bounds it would be impossible to provide a set of mere rules by which a person ignorant of chemistry as a science could with certaiuty, and in all ceses, determine, by the methods of teeting commonly called "the wet way," *i. e.*, by eolution of the mineral body and reactione produced upon that by certain other eolutions, the presence or the absence of even one particular metal. There ie no "royal road" to any eort of knowledge.

Qualitative chemical anelysis consists in a systemetized set of exhaustions, by which one *class* of bodies after another is, by the indications presented by reagents, removed from the posibility of beiug present; then each *body* of the cless that remaine is removed, until et last only one body remains poseible to be preseut, and then the nature and name of that remeining body is similarly determined. All this is brought more or less to rule, but from the multiferious combinations already referred to, the reactions of tests ere lieble perpetuelly to be modified more or less in their expected characteristice by nnknown bodiee present, or known bodies present in unknown combinations.

The men who is alreedy a scientific chemist, ecquainted with the *systematized* knowledge of the sensible quelitiee of matter which constitutes thet science, will generally be afforded by the *abnormal* reaction, some clue to its ceuse, *i. e.*, to the nature of the unknown body which producee it, and then, by a collateral path of testing, be ahle to arrive at its certein nature, and ultimately to know how and why it wes that his expected reection in the first instance proved an unexpected one. But the men who should go by rule only, and had no such leading guide from generel chemicel science, would eimply find himself etopped and in helplese perplexity as soon ee the reagent he had been directed to use preeented to him eome reeult quite different from what he had been told to expect.

It follows, then, that a men wholly ignorant of chemistry es a science, qualitetive chemicel analysis, even within very nerrow limite, if not en impossibility, is at every moment likely to be a snare and deception, or a bewildering maze leeding to nothing. The obvious mexim derivable from this is, that the emigrent, the resident cultivetor, the visitor, the explorer of a new or little known couutry, most of all one rich in metelliferous and querry produce, is cut off from very much that might result to him in prosperity and wealth, nnless before he shall have packed his haggage he has stored his heed with an adequate knowledge of chemicel scieuce. And this elone is still insufficient unless some general geology and petrology be added to it, together with some training of the eye and other sensee to the recognition of the more generelly encountered and important minerel epeciee.

Aseuming thie more or lese fully poeeeeeed by the explorer, the inquiry of our correspondent presente another espect, and mey be thue expressed. Whet methods of repid end extemporeneous quelitative chemicel examinetione of minerel eubstances, encountered by the explorer of a wild and rough country, cen be best employed, so that his entire epperetue eud reegents may be cerried at his seddle bow, eud thet his operetion mey be begun and ended, after the evening meel, at the end of e long dey'e ride on mnle or horeeback?

Under such conditions, thet which in the leboretory is the most perfect, decisive, and setisfactory, viz., quelitetive analysis, by the wet method—though not perheps impossible, becomes reelly impiecticable. But e moderete proportion of the minerel encountered in eny country are directly soluble in acids; those not so must be rendered soluble by previous fluxing with alkaline or besic bodies. Furnecee are wanted; the blecksmith or horee-shoer'e forge mey here or there supply a substitute for these, and an accomplished chemical mineralogist, with the ingeuuity and resources of a Faraday or an Abich, might succeed with very few reagents—very little special apparatue; nothing, perheps, but a few gless tubes and small platinum cruciblee or dishee—in obtaining a certein amount of knowledge of any minerel new or unknown to euch men.

But then the element of time comes in. Explorere in such countries generally have to "push on;" two or three houre after twilight may be afforded, though not a whole day or more to snch an exemination. But fusions, solutions, filtrations, ell are tedious as well es delicete operations; and even in the most cursory wey, humid qualitative mineral analysis is, for this reason, unsuited to such men as our correspondent. He must meke his choice—either to carry or eend his collected specimene to eome place where laboretory appliencee end leisure are etteinable, or, if he must exemine day by day such minerals as he may observe and encounter, he must adopt the one method which ie peculiarly consecrated to the traveler, viz., that of exemination by the blowpipe.

The use of the mouth blowpipe—by the labors of Gahan, Berzelius, Platner, Kobel, and others—been gredually advanced to the positiou almost of a complete system of iudications or of qualitative examinetion by the "dry wey." Minute as is the scale upon which we ere obliged to operate with it, this simple instrument, without eny other adjuucts than a common candle, a piece of charcoel, and a few bits of glase tube and of pletinum wire and foil, with a few little bottles of fluxes, all of which may pack into a leather caee and be cerried in the pocket, is one of such varied capability end power, that, in skilled hande, there are few mineral substencee to be found on our globe the nature of which mey not be with greater or less precision ascertained by it.

In countriee rich in the ores of the preciove metels it is peculiarly serviceable, for emongst blow pipe indicetions none are more simple end distinctive than those of gold and silver. By some of those chemists who have doue most to edvence the use of the blowpipe, ite applicetion, even in the regularly appointed laboratory, hes been urged beyond adviseble limits. Ite beet use ie ae an instrument of preliminary indicetiou—not ae a meens for quentitave essay; but for such indicetions wheu needed under the rough conditions deecribed by our correspondent it is *the* method, end the only oue at once precticable and useful, and capable of being reduced most nearly to a set of rulee. How useful it mey prove, however, depende npon the emount of previously acquired practice, dexterity, and educated observetionel knowledge of its reactions thet the operetor may have acquired for himself. He must be edncated for this es for eny other method, and in thie respect all that can be said is that a skillful use of the blowpipe needs a less general knowledge of chemicel ecience than does any other form of quelitative exemination.

It is elso a method which an explorer in a foreign laud, aided by one or two smell volumes which are almost as portable as the apperatus, may acquire for himself, and in which every assay made will improve his skill.

A very elender practice ehould eneble auy man of moderate menipulative power, and with eome general knowledge of inorganic chemistry, to detect with certeinty auy one of the well known useful metale, when presented to him in their oree or combinatione; and this we presume is what our correspondent desires chiefly.

Ae to works on the blow-pipe, Berzeliue (on its use), of which there is more then one English transletion, and Pletner, (also translated), are standard works—both smell eingle volumes. For the explorer's constent compenion we recommend "The Blowpipe Vade Mecum," a very small, thin volume of only 65 pages 8vo. This work which gives at the eud in alphebetical order the blowpipe cheracteristics of almost all commonly fonnd mineral species, preceded by admirably clear end brief iustructions for the use of the instrument, ie the work of one of the most skillfull of liviug blowpipe asseyists, deduced from his own personal experience and is published by Williams and Norgate, London.

AT the recent exhibition of the Royal Agricultural Society, England, some of the portable farm steam engines were fitted with the electrical indicetor which showe upon a diel the temperature of the water contained in the boiler.

Useful Information.

Bread from Wood.

Professor Liebig says: A new and peculiar process of vegetation ensues in all perennial plants, such as shrubs, fruit and forest trees, after the complete maturity of their fruit. The stem of annual plants at this period of their growth becomes woody, and their leaves change in color. The leaves of trees and shrubs, on the contrary, remain in activity until the commencement of the winter. The formation of the layers of wood progresses, the wood becomes harder and more solid, but after August the plants form no more wood, all the absorbed carbonic acid is employed for the production of nutritive matter for the following year; instead of woody fiber, starch is formed, and is diffused through every part of the plant by the autumnal sap. According to the observations of M. Heyer, the starch thus deposited in the body of the tree can be recognized in its known form by the aid of a good microscope. The barks of several aspens and pine-trees contain so much of this substance that it can be extracted from them as from potatoes by trituration with water. It exists also in the roots and other parts of perennial plants to such an extent as to have been employed in the preparation of bread in famines. In illustration of which we quote the following directions, given by Professor Anteurieth for preparing a palatable and nutritious bread from the *beech* and other woods destitute of turpentine. Everything soluble in water is first removed by frequent maceration and boiling; the wood is then to be reduced to a minute state of division, not merely into fine fibers, but actual powder; and after being repeatedly subjected to heat in an oven, is ground in the usual manner of corn. Wood thus prepared, according to the author, acquires the smell and taste of corn flour. It is, however, never quite white. It agrees with corn flour in not fermenting without the addition of leaven, and in this case some leaven of corn flour is found to answer best. With this it makes a perfectly uniform and spongey bread; and, when it is thoroughly baked and has much crust, it has a much better taste of bread than what in time of scarcity is prepared from the bran and husks of corn. Wood flour also, boiled in water, forms a thick, tough, trembling jelly, which is very nutritious.

How to Preserve a Carriage.

A carriage should be kept in an airy, dry coach-house, with a moderate amount of light, otherwise the colors will be destroyed. There should be no communication between the stables and the coach-house. The manure heap or pit should also be kept as far away as possible. Ammonia cracks varnish and fades the colors both of painting and lining. A carriage should never, under any circumstances, be put away dirty. In washing a carriage keep out of the sun, and have the lever end of the "setts," covered with leather. Use plenty of water, which apply (where practicable) with a hose or syringe, taking great care that the water is not driven into the body to the injury of the lining. When forced water is not attainable, use for the body a large, soft sponge. This, when saturated, squeeze over the panels, and by the flow down of the water the dirt will soften and harmlessly run off, then finish with a soft chamois leather and old silk handkerchief. The same remarks apply to the underworks and wheels, except that when the mud is well soaked, a soft mop, free from any hard substance in the head, may be used. Never use a "spoke-brush," which, in conjunction with grit from the road, acts like sand-paper on the varnish, scratching it, and, of course, effectually removing all gloss. Never allow water to dry itself on the carriage, as it invariably leaves stains.—*English paper.*

Instinct of Turtles.

Audubon, the naturalist, stated that at certain places on the coast of Florida sea turtles, those huge, solid looking reptiles on which aldermen are fed at the expense of tax payers possess an extraordinary faculty of finding places. Working their way up out of the reach of tide water with their flippers, quite a deep hole is excavated, in which a batch of eggs is deposited, and then carefully covered up. On reaching the water they not unfrequently swim three hundred miles out at sea, foraging for appropriate food. When another batch of eggs is developed, after a lapse of about fourteen days, they will return unerring in a direct line, even in the darkest night, and visit the buried eggs. Removing the sand, more are deposited and secured. Away they go again as before. They know instinctively the day and hour when the young brood, incubated by solar rays, will break the shell, and are promptly at the spot to liberate them from their prison. As soon as fairly out of the hole, the mother turtle leads them down the bank to the waves, and there ends her parental solicitude and maternal duties.

Sterility and Depletion.

Regarding this subject Mr. Howorth remarks: The gardener who desires his plants to blossom and bear fruit takes care that they shall avoid a vigorous growth. He knows that this will inevitably make them sterile; that either his trees will only bear distorted flowers, that fail to produce seed, or that they will bear no blossoms at all. In order to procure flowers and fruit he checks the growth and vigor of the plant by pruning its roots or branches, depriving it of food, and, if he have a stubborn pear or peach tree which has long refused to bear fruit, he adopts the hazardous but often most successful plan of ringing its bark.

Turning to the animal kingdom, the rule is no less true, "Fat hens won't lay" is an old fragment of philosophy. The breeder of sheep, pigs, and cattle knows very well that if his ewes and sows and cows are not kept lean they will not breed; and as a startling example it is stated that to induce Alderney cows, which are bad breeders, to be fertile, they are actually bled, and so sufficiently reduced in condition.

In like manner generous diet and good living produce their effect on human beings. In countries where flesh and strong food is the ordinary diet, the population is thin and the increase small; while where fish, vegetables, and weak food are used, the population is large and the increase rapid. Everywhere the rich, luxurious, well-fed classes are diminishing in numbers or are stationary; while the poor, badly-fed, hard-worked are very prolific. As with the plant, the animal, and the man, so is it with the nation. It was luxury and not the barbarians that sapped the power and wrought the destruction of the Roman Empire; and as plants, animals, and even human beings are stimulated by a course of depletion to increased fertility, so, according to some authorities, great wars have a similar effect on nations, and by their depleting action stimulate them to increased activity and renewed vigor.

Difference in the Value of Diamonds.

While many can approximate the value of a diamond, few can appreciate its exact worth. All know it to be the most expensive of all substances (excepting rubies of rare color and size), from its beauty, rarity, and indestructibility. The diamond which first decked some fabulous Indian god would blaze to-day with all its fire if adorning some fair American woman. Not a single sparkle has been dimmed, nor an atom of its weight lost. Where the real difficulty exists is to make the public understand the comparative merits of various gems. In the jeweler's tray many stones may be exhibited. They may be all of good quality, but there is a decided choice. This one may have size and purity of color, yet marred by a single flaw; that one, limpidity, without a flaw, yet defective in shape; while a third, even smaller than the other two, may unite every desirable quality, be in fact almost faultless. Combining, then, every excellence within itself, its value is largely enhanced. The comparison between the price paid for a horse and a diamond is not an inapt one. An animal possessing beauty, health, speed, and docility, commands a price far above another having all these qualities save one. It is precisely the same case with a diamond. A stone approaching perfection possesses a value infinitely above one with a single depreciating quality.

Electrical Wonders.—By the mirror galvanometer of Sir William Thomson, which was of the utmost importance in securing the success of the Atlantic Cable, a ray of light is reflected from a minute mirror that is attached to a magnetic needle. When the electric current passes the magnet is deflected, and the movement of the reflected spot of light over a scale indicates the resistance to the passage of the current. The united weight of mirror and magnet is three-quarters of a grain.

During the experiments with the Atlantic Telegraph both cables were connected at the American end, giving a circuit of more than four thousand miles, yet a current passed through the whole distance in less time than a person could pass across the small room in which the experiment was made—and, most wonderful of all, the battery that accomplished this result was contained in a lady's silver thimble.

Wood Carving by Machinery.—A process of wood carving by machinery has lately been invented, whereby, it is said, any desired pattern is impressed upon the surface with a delicacy and effect that compare favorably with the work of skilled carvers, and at a cost almost nominal. The process is exceedingly rapid, as ten superficial feet of finished work can be produced per second.

Baltimore was the first American city to introduce gas. Boston was only a year behind it, having gas in 1822. New York did not follow these examples until five or six years afterward.

The oldest and largest chain bridge in the world is said to be that at Kingstung, in China, where it forms a safe and perfect road from the top of one lofty mountain to another.

Good Health.

Bone Felon Arrested by Congelation.

Dr. James B. Walker, of St. Louis, (Mo.), says in the *Medical Archives:* Not long since I was consulted by a young lady who was suffering from an incipient felon. The distinguishing characteristics of the painful affection were already manifest—pain, throbbing, some tumefaction, and the nervous excitement, indicated plainly what was in advance unless the inflammation was arrested; and the command was, arrest it at all hazards.

This starting-point had been two days previous to her application of treatment. I could think of nothing offering such a prospect of success as cold, as low as the freezing point. Adding equal parts of snow and salt in a tumbler, I placed the finger, it being the middle one, in the freezing mixture. For a few seconds there was an increase of the sensibility of the part, and it was with difficulty I could persuade her to hold her finger in the mixture. By degrees the pain subsided, and at the end of two minutes perfect insensibility had followed. I removed the finger; and after a few minutes the sensibility returned, and with it came the pain, throbbing, etc. The application was renewed, and the pain ceased and insensibility caused. This was repeated as often as the pain returned, and in about two hours, alternating the application and removal, there was no return of the painful sensations, and the difficulty entirely ceased, and there was no felon. The induration remained several days, and the skin gradually exfoliated.

Another Treatment.

The Nashville *Journal of Medicine* says:—It is well known by physicians that pressure causes absorption, and in view of this fact, ten years ago I adopted the plan of applying several coatings of collodion over the finger, or place where the pain is felt, on its first appearance. On drying, the collodion contracts with an even pressure, and if kept on for twenty-four hours, the symptoms will usually entirely disappear. Of late, I have been in the habit of soaking the affected part in quite a strong solution of carbolic acid for a few minutes before applying the collodion. The pain for some hours will be quite severe, but an anodyne will afford relief.

Sick Headache.

The true cause of sick headache lies deep in the patient's idiosyncrasy, and is developed by a hundred different causes. The advice, then, to sufferers is to give as much tone as they can to their nerves by adopting all those methods which experience has shown to be good, and then avoid, so far as practicable, all those causes which are known to excite an attack. A writer in the *British Medical Journal* says:—"I need scarcely describe a sick headache—how one rises in the morning more dead than alive; perfectly unable to swallow the slightest particle of food, and often perhaps actually sick; how the head throbs, and the pain increased by the slightest movement; how speaking or doing is a burden beyond bearing; how one prays to be left alone in the utmost quiet, so that he may, if possible, sleep. To other persons the sufferer looks extremely ill, very pale, dark around the eyes, and with contracted pupil. To himself his head feels hot, and the application of cold most refreshing. The clamminess in the month, the nausea, and general gastric disturbances are secondary, and have no connection with any improper meal, and thus are in no way relieved by the too frequent and ignorantly administered purgative. This is not needed, and has no good result. The only remedies which are of any avail are those which act on the nervous system, such as hot tea and coffee; or, after the stomach is quieter, and them ore urgent symptoms have passed off, a little wine or ammonia. If the headache take more the form of hemicrania, then remedies are occasionally useful, as the local application of the bisulphide of carbon, or galvanism, and internally the bromide of potassium. This is the only drug that I have really seen to be serviceable. Whilst the nausea exists and the worst symptoms prevail, even this remedy is of no avail.

Ivy Poisoning.—The best remedy for ivy poisoning is said to be sweet spirits of niter. Bathe the parts affected freely with this fluid three or four times during the day, and the next morning scarcely any trace of poison will be found. If the blisters be broken, so as to allow the niter to penetrate the cuticle, a single application will be sufficient. The spirits of niter may be prepared by dissolving one part of nitrous ether in eight parts of common alcohol.

Cure for Corns.—The *Chemist and Druggist* prescribes as follows:—Bathe the feet well in warm water, then with a sharp instrument pare off as much of the corn as can be done without pain or causing it to bleed, and dress once a day, with the following salve:—

R Black oxyd of copper, gr. xv.
Lard, oz. ss. M.

An Important Medical Discovery.

It appears that an accident, as in many other discoveries, is about to render an important service in the cause of medicine, by which the eye will be able to locate many diseases, whose source and locality must now be determined by induction or inference rather than sight. It appears that Dr. Richardson, of London, while experimenting with electricity, about two years ago was surprised to find a portion of his hand so illuminated, as to become perfectly transparent. This fact, and also a similar experiment by Dr. Priestley, induced Dr. Thomas Nicholson, of New Orleans, not long since, to pursue the subject till he succeeded in completely illuminating the whole hand. From the result of these experiments it seems, that in order to illuminate the whole body it would only be necessary to increase the vividness of the calcium light used, and enlarge the magnifying lenses employed, so as to gain sufficient power. When all the internal organs of the human system are thus inspected by actual sight there will be no need of diagnosing a case to discover the cause or seat of a disease. In the case of wounds or internal bruises, the surgeon can determine at once the location of the bullet, or the condition of the part affected, also tumors, ulcers or any internal malady, as easily as can a housekeeper the displacement of an article of furniture, or an inkspot upon the carpet. It can be readily perceived, that this discovery may become an efficient aid to medical science, and an incalculable blessing to mankind.

Colors and Health.—Through the *American Artisan*, we learn that a correspondent of the *Builder* makes statements, which, if not founded on imagination, are certainly highly important. He had occasion for several years to examine rooms occupied by young women in a manufacturing establishment, and he observed that while the workers in one room would be very cheerful and healthy, the occupants of a similar room, who were employed on the same kind of business, were all inclined to be melancholy, and complained of a pain in the forehead and eyes, and were often ill and unable to work. The only difference he could discover in the rooms was that the one occupied by the healthy workers was wholly white-washed, and that occupied by the melancholy workers was colored with yellow ochre. As soon as the difference struck him, he had the yellow ochre washed off the walls and then whitened. At once an improvement took place in the health and spirits of the occupants. He pursued his observations and experiments, not only in large manufactories, but also in small apartments and garrets, and he invariably found that the occupants of such apartments, when they were colored yellow or buff, were less healthy than their neighbor in whitened rooms, and that when the yellow hue disappeared the low spirits and ill health went with it.

Phosphate Candy.—The restoration of the phosphorus to bread, which has been removed in the bran, as so successfully accomplished in the Horseford baking powders, is well known both in this country and Europe. We now hear of a novel way of turning our national love of candy to similar benefit, by employing phosphorus instead of sulphuric acid in sour drops. Mr. Charles Allen, of the School of Mines of Columbia College, has invented a phosphated candy, which he prepares by combining one or more of the acids or salts of phosphorus with sugar, thus ingeniously presenting an acceptable form of assimilable phosphorus to those who need some repair of the nervous and brain forces. It is a pleasant way of taking phosphorus as a medicine, and has been deemed worthy of a patent.

Tobacco Smoke.—Vohl and Enlenburg have investigated the narcotic action of tobacco, especially examining the action of tobacco smoke. As the result of their analysis, they are led to the opinion that the disagreeable symptoms to the incipient smoker and the chronic affections produced by smoking, as well as the poisonous effects of tobacco smoke juice when swallowed, are due to the bases pyridine and picoline, and not to nicotine. They explain the fact that stronger tobacco can be smoked in cigars than in a pipe, by finding that more of the volatile bases are present in pipe smoke, more especially of the very volatile and stupefying pyridine; while in a cigar little pyridine and much collidine are formed.

Sexuality of Heart Disease.—Dr. Richard Quain reports that enlargement of the heart, one of the most distressing and fatal diseases, is more than twice as frequent in males as in females, the precise proportion being 8 to 3. This remarkable liability to enlargement of a man's heart, as compared with those of women, is, he thinks, unquestionably due to the greater amount of work and anxiety which, under the present dispensation, falls upon man. Ladies may take this fact to heart, and reflect whether, in claiming the rights of women, they may not at the same time incur the risks of men and with them a new and unexpected form of disability.

Gargle for Sore Mouth.—Half a teacup of boneset tea; the same of tea made of the black haw. Use the bark of the root; a teacup of strong tea made of privet; a piece of alum the size of a nutmeg. Sweeten with honey.

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Illustrations and Reports of Mining Enterprises Wanted.—Drawings or photographs of mining works that are of general interest to our readers are solicited for publication in this journal. Official reports of Companies, and description of mines of importance, of special interest, are also desired. Sketches of any new method and discoveries will be very acceptable.

San Francisco:
Saturday Morning, Sept 7, 1872.

Gold and Legal Tender Rates.

San Francisco, Thursday, Sept. 5, 1872.—Legal Tenders buying, 88¾; selling, 89. Gold in New York to-day, 113¾.

Table of Contents.

EDITORIALS.—Agassiz in the United States, 145. The Academy of Sciences; The New Diamond Fields: Our Distinguished Visitor, 152
ILLUSTRATIONS.—Upright Portable Engines, 145. Map of the New Mexico Diamond Fields, 153.
CORRESPONDENCE.—Notes of Travel in Lincoln Co., Nev., 146.
SCIENTIFIC PROGRESS.—Amalgam of Mercury and Steel and of Mercury and Cast Iron; The Pneumatic Tube; Apparatus for Obtaining Water from the Depths of the Ocean; Sensation in the Mouse's Ear, 147.
MECHANICAL PROGRESS.—Novel Application of the Screw Principle; Incidents in Engineering; Crystallization in Wrought Iron, 147.
MINING SUMMARY from various counties in California, Nevada, Arizona, Colorado, Montana and Utah; Mining Shareholders' Directory, 148-9. Market Reports, 156.
USEFUL INFORMATION.—Bread from Wood; How to Preserve a Carriage; Instinct of Turtles; Sterility and Depletion; Difference in the Value of Diamonds; Electrical Wonders, 151.
GOOD HEALTH.—Bone Felon Arrested by Congelation; Sick Headache; Ivy Poisoning; An Important Medical Discovery; Colors and Health; Phosphate Candy; Tobacco Smoke; Sexuality of Heart Disease, 151.
DOMESTIC ECONOMY.—Canning Fruit; Cooking Beans, 154.
MISCELLANEOUS.—Flanking the Prohibitionists, 147. A Table of Convenient Dates; Analyzing Minerals in the Field—Extemporaneous Chemistry, 150. The Dunderberg; The Idaho Mine; Straw Compost: What is Dirt, 154 Patents and Inventions; New Incorporations; Meetings and Elections; Important Law to Companies Incorporating; Mining Discoveries, 156.

Mono County Items.—"C. H. A." writes us from Mono county, that a silver vein has been discovered eight miles south of Benton, in the slate belt on the flank of the Sierra Nevadas. It contains argentite, stephanite, a little galena and zincblend, trace of copper carbonate, etc. The ore assays from $7,000 downwards. One and one-half tons ore, worked at Columbne, assayed nearly $400 per ton. First-class ore is being shipped to Reno. Shaft is down 20 feet and the vein is four feet wide. Our correspondent adds: "We consider it a rather promising thing and are *not* 'wanting for capital,' but intend to 'devil up' a good mine or give up a bad one.

A Convenient Map.—We have received from the publisher, Froiseth's map of Utah, a fine large sheet, in pocket form, showing the lines of existing and projected railroads, mining districts, mines, sections, fractional sections, counties, cities, towns and settlements, and other internal improvements of the Territory. The map is a very comprehensive one and will be of use to every one interested in this progressive part of the United States, as will be seen by reference to advertisement in another column.

Personal.—Professor Gilman, of Yale College, recently appointed President of the University of California, left for the East on the 5th inst. He will return as soon as possible to undertake the duties of his position. The Professor's brother accompanies him on his journey.

The sail arrivals from supply ports last month embraced 54 vessels, representing 39,800 tons of tonnage.

The (Reported) New Diamond Fields.

NO. IV.

We present herewith a sketch of the region whence it is supposed the precious stones, which have recently been so freely shown about this city, have been obtained. The outlines of the map have been taken from the U. S. Official Survey, but most of the filling in, including the mountain ranges, Indian trails, native villages, etc., have been drawn from memory by Capt. B. T. Catlin, who some years since spent several seasons in the region of country shown, in connection with the U. S. Army. He assures us that he has passed over every trail laid down on the map, and visited every important point noted; that he is intimately acquainted with the condition and habits of the Indians and his attention, while there, was often attracted to the various localities where precious stones, consisting of rubies, amethysts, emeralds, the topaz, etc., and perhaps the diamond were found. He also observed many indications of the presence of gold, silver and copper. While there he made quite a collection of rubies, emeralds, etc., and brought away several specimens of what appeared to be black diamonds, such as are used for boring rocks, etc.—stones which are equal in hardness to the genuine brilliants; but which possess but comparatively small value.

The localities where these gems are found, as may be learned from a careful examination of the map, cover a large area of country, embracing many degrees of longitude and latitude. The Navajo Indians have for many years been gathering large quantities of garnets and emeralds from the San Francisco Mountains, about 75 miles a little east of north from Prescott. The Indians prize the latter very highly. Both are usually picked up from the ant-hills—thousands of them being found on a single hill. Similar stones may be found, as marked on our map, throughout a large extent of country 75 to 100 miles a little north of east from Fort Yuma. They are also found at intervals throughout almost the entire region between longitude 107° and 108°.

The locality of the Roberts and Harpending mines is supposed to be within or somewhere near the locality bounded by longitude 108° and 109°, and latitude 105° and 106°. The famous Burro mines, located some two or three years since by these parties will be found laid down on our map in the south west corner of New Mexico. This same range of mountains extends southerly through the Mexican province of Chihuahua, and probably still farther on towards the interior of Mexico.

How to Get to the Mines.

There is a narrow-gauge railroad already in operation from Denver,—which city is in connection with the Union and Central Pacific railroads—southward, on the direct route to the "Diamond Fields," for a distance of about 130 miles, with 40 miles further already graded. From the present terminus of the rails to Albuquerque, *via.* Santa Fé, there is a wagon road, over which the U. S. mails are regularly transported, and by which route those moving for the diamond fields will probably proceed. From Albuquerque there are trails and wagon roads branching off in every direction westward and southward. These trails are shown on the map by white lines, drawn directly or in curves from point to point. The distances from place to place may be easily determined by the degrees of latitude which are distinctly and quite accurately laid down. The railroad from Denver is being pushed on southward very rapidly, following nearly the line of the wagon road to Santa Fé and thence to Albuquerque and El Paso, whence it is proposed to continue it still further southward by a Mexican company until it finally reaches the city of Mexico. Should the favorable reports from the diamond fields be confirmed, that fact will give an additional impetus to the construction of the road, in order to meet the great rush, which, in such an event, will be made in that direction.

With regard to the fact whether diamonds—genuine brilliants—have been found there, we have as yet no positive knowledge. We have before us the reports of Mr. Janin, a mining expert of the highest reputation, who assures his correspondents that he has himself assisted in collecting the stones exhibited by Roberts, Harpending & Co., among which were many which have been pronounced diamonds; but with regard to the competency of those to whom they have been submitted to judge of their character, we know nothing; and in the present condition of any information, with regard to the ground, we have no other positive evidence that diamonds have been found there. The fact that the other precious stones named do exist there in quite large quantities, seems however, to be perfectly well established, not only by the report of Mr. Janin, but upon the evidence of numerous individuals who have gathered and brought them to this city, some of which persons are men of eminent scientific attainments, and whose word and judgment is altogether above suspicion. These stones of themselves would doubtless give much value to the localities.

A few months, however, and possibly a few weeks may furnish conclusive evidence with regard to the truth and value of the reported finds.

But whatever may be the result, it seems quite evident that we are on the eve of one of those periodical mining excitements, which are so characteristic of our peculiar population, and moreover that the coming excitement bids fair to be even more wide spread than any which has preceded it in this State; for we hear that parties are organizing in many of our Eastern cities, and in Kansas, Nebraska, Colorado and Utah, for the purpose of searching for precious stones, diamonds, etc., in this new (supposed) Golconda.

The history of past excitements of this kind affords abundant testimony of the slender evidence of reality which is required to get up a mining furor; and the present objective point is quite far enough away, is well enough located in point of climate, and contains just the right elements for interest and adventure. It will be sure to take, and the usual amount of disappointment, suffering and death will not fail to ensue.

If it would be of any avail we would freely devote the necessary space to detail the sad failures of the great masses, and the slender returns realized by the fortunate few from every such excitement which has been set on foot on this Coast or elsewhere, for we know of no exception—not one—neither do we believe that this one will present any material variation in the horrors of its coming detail. The spirit of adventure, one of the peculiar and irrepressive elements of our population, is evidently being aroused, and unless something now entirely unforseen should turn up, we should not be surprised to see an army of ten or fifteen thousand, adventurous men moving towards the frontiers of Mexico by early spring or even before. How are these men to be fed and supplied? There are no navigable rivers upon which supply trains can be improvised; there are no railroads, except upon paper, within 500 miles of the nearest diamond fields. No other means of access are presented than wagon routes, destitute alike of water and feed, and along the fastnesses of which skulk the most dangerous and daring tribes of Indians on the American Continent.

Such is the only picture we can draw; and we can only hope that we may be mistaken in our surmises, and that untold wealth awaits the daring adventurers, the van of which are already on the march. To those who are bound to go, at whatever hazards, our advice is—be well prepared to both *go* and *come*. Even if precious stones are found, they will have but an uncertain and much depreciated value on the ground. So much uncertainty will for a long time exist, that no legitimate trading can be done, as has heretofore been transacted, when gold has been the object of search. Unprincipled speculators will be there to depreciate values and secure the same for a mere tithe of their actual worth.

Better, far better, let well enough alone, and remain in the well-tried fields of California or Nevada, where it may be, only a small return awaits the diligent laborers; but that return is sure, and is accompanied with all the conditions which make life really pleasant and happy. Better leave the search for new and untried fields to the few hardy pioneers and prospectors, who from mere love of adventure always hover about the outskirts of civilization, and plunge into new and untried fields, only to unearth treasures for others, and make ready an easy harvest for those who succeed them.

Our Distinguished Visitor.

On Monday last our office was honored by the presence of Prof. Louis Agassiz. His plain and cordial address more than delighted us, while his words of commendation for the industrial and progressive interests our journals represent gave us special encouragement. He expressed himself quite surprised at the substantial appearance of our city, alluding to our fine structures as being devoid of patch-work, but of artistic and solid workmanship. We hope his physical strength, by a little rest in our bracing climate, will be wholly restored, and that his visit may be a pleasant and profitable one to himself, as we are quite sure it will be to our own city and to the world of science. We hope he will husband his strength so as to fully complete the great work that he has been gathering in; his hands for fifty busy years. He expressed to us that this is now his greatest desire, and we but express the sentiments of thousands when we pray that such may be the crowning glory of his noble life.

Utah Items.—A dispatch dated the 3d inst., states that the aggregate cash transfers for mining property were greater that day than any in the past year; three sales were made for over $50,000 cash. An English gentleman, in a speech made at the opening of the Walker House, said that the capitalists of that country were ready to pour unlimited means into Utah for the development of mining property if assured that investments were secure under the law. On the 29th of August nearly $200,000 was paid in exchange for mining property. An early and severe winter is expected, as the ice forms half an inch thick at night in some of the mountain mining districts.

Academy of Sciences.

The regular semi-monthly meeting of the Academy was held on Monday evening last. In expectation of meeting our distinguished visitor, Professor Louis Agassiz, a large number of persons were present, including several ladies. In consideration of the honor conferred upon the Academy by the presence of the illustrious savant, whose name is as familiar as household words, the regular business of the meeting was dispensed with.

Professor Davidson, President of the Academy said; that with a readiness for which his own name was a synonym, our illustrious guest promptly accepted the invitation to be present at the meeting, although he might well have pleaded a necessity for rest and repose after such a long trip. This Academy extends to him its hearty congratulations and good wishes and is gratified that it is the first to hear his words after a voyage so successful as to place American collections on a par if not even above the finest collections in Europe. I have the pleasure of introducing to the Academy

Professor Louis Agassiz

The Professor then arose and spoke in perfect English, but with a slight foreign accent, as follows, being frequently interrupted by applause:

Mr. President and Gentlemen:—It gives me great pleasure to be among you this evening, and I can assure you that as long as I live I shall be proud to have met such a reception at your hands as has been tendered to me this evening. Twenty years ago, when your Academy was founded, I longed to come and stimulate and encourage those who were struggling in their efforts to organize a scientific body in a community which was then entirely engaged in gathering gold. My reverence for the Academy of Sciences of California has been growing since I have been, through your published proceedings, that in a city which is so entirely absorbed by business you have raised the standard of intellectual culture; and as I have devoted my entire life, without regard to anything else, to the promotion of knowledge, I have felt that you were doing a good thing, not only for the city of San Francisco, for the State of California, but for the United States, for you show by your zeal, among the difficulties which surrounded you, that you meant, even if you should not succeed to the full extent of your desire, to keep up the spirit which leads forward in intellectual growth. Now, I hold that it is your mission to show to the western part of this continent that without intellectual growth there is no greatness for a State. You must impress this on the community.

California vs. Massachusetts.

You are surrounded with wealth as no State ever was. You have men among you who are richer than kings of the Old World, and yet I see you are still in close quarters. You have not room in which to display your acquisitions; you have not the means of making your pursuits inviting to the community at large, and with whom does it rest to foster these interests of intellectual growth? with those who have the means. Let them take the example of the rich men of Massachusetts. I know what they can do. I went single handed to Cambridge, to teach natural history, 25 years ago, and there was not then in the University a single specimen which I could use to illustrate what I had to say. And yet a little band of students feeling an interest in what they could learn in the lecture room and others thought such a pursuit was worth encouraging, and by and by the idea arose, that a museum would be of use, and the means were gradually forthcoming, at first sparingly in small contributions, but gradually more liberally in larger sums, until at this moment, after 14 years only, the museum at Cambridge stands in my estimation without a parallel in the world.

American and European Institutions.

It may sound like an exaggeration, and yet I will explain how it is possible. The institutions of account in the Old World have grown through centuries. They have been founded upon the ideas which were developed by science in the course of time. They were organized with the means then at disposal, and science has made such progress that now these great institutions are in a measure superannuated and cannot be rejuvenated. They are so organized that it is impossible in the halls of the British Museum or in the halls of the Jardin des Plantes to introduce those appliances which modern research requires. Our little museum was started with the ideas of to-day and has grown with them. In consequence of

that, such materials only were collected as have an immediate bearing npon the qnestions of the time, and as science advanced those materials were increased in the direction in which progress was making. And there was a faculty for that in the very organization of the whole institution, and that has been so felt by our citizens that they have extended to me every facility which I could wish for. I have had for the last five or six years all the means which I was capable of expending profitably. And yet, yon are richer than Boston—a great deal more so. You have a great many moro men who could contribnte in that liberal way to the organization of an institution which would benefit not only those interested especially in natural science, but which would make observers.

Tho Men that are Wanted.

That is what the world wants—not books to read, but it wants meu to learn what is not yet known. These men cannot be educated in the school-room. They must be educated in the school of Nature, among her specimens. Knowledge must be obtained, and from where are those materials to bo forthcoming? The student has not time to go into the field and gather his materials for work. He must have such aid and must have such stores as will bring the facilities for study closer to his laboratory.

What would yon think of the man who would raise his food himself when he is engaged in the law bnsiness or in the medical profession? You would think he was wasting his time. Now I say the scientific man is wasting his time when he is not provided with the appliances with which he can work and which he is capable of producing. And I hold that it is one of the duties of those who have the means to help those who have only their head and who go to work with an empty pocket.

Geological Survey Complimented.

I think that one of your duties, besides fostering and nursing the interest you individually feel for science, is to arouse that general interest in the community, which will make every true patriot, every lover of his State, every philanthropist, every man who has the heart to leave a good repute and to leave an honorable memory, desirous of contributing to your progress. Not only have you that before you, your own work and pleasure in the work, but you have also to help one of your institutions, which has already spread the good name of California everywhere where science is cultivated. Your Geological Survey is a model of scientific research. Your Geological survey has been conducted in a spirit and with a success which has cast a shadow over the Geological Surveys of the Eastern States. There is not one—not that of Massachusetts, not that of New York, not that of the younger States further west—but east of the Rocky Mountains, which can be compared for beauty of execution, for accuracy of research, for splendid generalization with those volumes of your Geological Survey, which have already been given to the world. And if yon can secure the continuation of that work to its completion, you will have done for your State and for science a good and an excellent work.

Educational Institutions.

You have too to help your University, that is growing. There was a time when it was said in Europe, that no American book was worth opening or reading. "Who reads an American book?" We have now books read all the world over. There was a time when we had to send our students abroad in order to complete their education, and when even our colleges gave them at the best, only elementary culture. Now our colleges are taking a step forward—are making such progress, our institutions are improving in such away, that I hope to see the day, old as I am, when European students shall flock to our universities. There is a spirit of freedom which pervades study in America that is wanting in the Old World, where the professor, in order to keep up his head and be able to live and be supported by the Government, has to be the servant of the Minister of Public Education, and do his bidding. Here we do the bidding of only our own consciences, and do the work as we think it ought to be done. And European students will learn that to add to their knowledge that spirit of freedom they must flock to our universities. And you are organizing one here which I hope will progress so fast that when we have attracted in the Eastern States some of the European students, they will soon be seen crossing the continent and coming to see you also. And do not be too short in your expectations. Do not look too near the present movement but look forward, and that forward, however distant you think it now, will be at your feet before many years.

When I saw to-day, for the first time, San Francisco through the Golden Gate, I was amazed. I look upon it as one of the marvels of modern times, that there should be a city standing on these shores, so grand, so prosperous, so rich—and so young. And what you have achieved in material prosperity, you can achieve in intellectual growth in the same short time. If you will only put the shoulder to the wheel and have confidence in yourselves that you can do it, you will achieve that as you have the other great result.

At the conclusion of Professor Agassiz's remarks, the President called on the new President of the University of California.

Professor Gilman,

Who said: *Mr. President and Gentlemen:*—I cannot but regard it as a most happy omen that the first opportunity I have had after coming

MAP OF THE NEW MEXICO DIAMOND FIELDS.

N. S. Navajo Springs.
Z. V. } Zuni Villages.
Z. V. }
Z. V. }
J. W. Jacobs Wells.
M. W. Martin Well.
J. d. M. Jornadin del Muerto.
C. w. I. Cliff with inscription, Spanish, dated 1708.
D. B. o. O. R. Dry Bed of Old River.
B. C. Bear Camp.
I. H. o. A. Immense Herds of Antelopes.

I will not prolong these remarks, but let me trust that the true utterance you have heard from the distinguished orator who has spoken to you, that you need an institution for to-day, and an institution for the training of men, may sink deep into all our hearts and inspire us for all the work which is to come.

Dr. Torry of Columbia College

Then arose and said: After the distinguished gentlemen who have preceded me, there remains but little for me to say. Those who know me are aware that for many years I have had the greatest desire to explore this great State. I may say that for many years I have had California on the brain.

For a long time I never expected to see it, although I spent many years in investigating the collections of natural history, especially of botany brought from California, the various volumes of railroad explorations, etc. Seven years ago I had the pleasure of coming here for the first time and attending the meeting of this Society. That pleasure is now renewed under peculiar circumstances. So happy am I to meet my excellent friends and the gentlemen who have just addressed you. Now I may say my joy is no less than it was when I was here before. I have spent all my time without cessation, since I arrived, in examining the botanical productions of California. Although botany has occupied so much of my time, chemistry is my profession, and I have regarded botany as an amusement, yet my zeal in either study has not diminished, notwithstanding I am many years older than my good friend near me, who thinks he is advanced in age. I have been galvanized into making you another visit, and now I propose to remain a little longer and then return to work still more upon the flora of this State, hoping to add some material to the large work which is expected when the Geological Survey is completed. I have done already much toward it, and hope to do more before I am taken away.

Prof. Davidson then said that when he invited Professor Agassiz to be present he promised that the Academy would expect only a few words from him, but that before leaving us he had consented to give us a short account of the

Results of the Hassler Expedition.

Professor Agassiz then arose and said: It may appear somewhat egotistical on my part to accept an invitation which has not been tendered, that I should say what we have done, for I believe there have been very good things done during this journey; and if I had to take it all to myself, I would certainly be silent. But I can say that, beginning with the captain of the ship, who never allowed an opportunity to be lost when he could foster our work; following it up with the officers who have followed his example and given us every kind of assistance possible to facilitate our research; and with my younger friends who were with me as my assistants, I have had such help as made my labor an easy task and the result of the voyage or journey a very profitable one. I mention the work of Dr. Steindackner alone, whose exertions have been so untiring day and night, at all times, losing not a minute on any occasion, that but for him the collections would not be half what they are. I say truly that he has doubled the value of our whole work. I have had younger men, who have had some training under my direction. Mr. Blake who has worked very diligently and who has contributed largely to the collections. And then everybody on board, even those who had no particular business with natural history, often relinquished their work, to come to the rescue, and contribute to our collections. A very considerable collection of marine plants have been made, through the care of Dr. Hill, whose duties were entirely different, and yet who turned his attention to that branch for which we had no special worker. Dr. White and Dr. Pipkin, and in fact everybody down to the sailors, have put their hands to the task and helped us in that short time, (269 days). Well, in that time we have packed 242 boxes and barrels of specimens. I am within bounds when I say that each one of these packages would fill a handsome case. So that we carry home materials to oblige the Trustees of the museum to build. They cannot store and display what we bring without enlarging the museum considerably. Now, it might be tedious if I were to enter into details, but you may like a few figures. I know by an approximate estimation—not by actual count—that the collection of fishes we carry home amounts to about 30,000 specimens. I have no doubt that the sum total of specimens we have brought together exceeds 100,000, and they are not preserved in the old-fashioned way—dried and unfit for further research.

Everything, the value of which could be increased by being preserved in alcohol, has been preserved in that way to such an extent that, to pack those specimens, I had to use up 3,000 and odd hundred gallons of alcohol, and when these collections are in that way so preserved that they will afford materials for investigation, for years to come, I shall be able to make anatomical investigations upon all systems of organized vertebrates or mollusks, or articulates, which I have thus collected, and I shall be able to contribute to others material for investigation to such an extent that I have no doubt that, from this time forward, there will not be an investigation made upon any particular class of animals here or elsewhere in Europe, without contribution from our museum. Now, I think, when America has such an institution of learning, we can feel we are no longer tributary to the Old World for our own aid; that we stand on our own legs.

After adjournment the members paid their respects personally to their distinguished visitor.

Diamonds?—We have received two packages of crystals from Austin, Nevada, which were obtained from a cemented gravel about 50 miles from that place, with the request that we should examine them for diamonds and other precious stones. We have given them a preliminary examination without finding anything valuable and have handed them over to the Microscopical Society from which we shall probably receive a report in season for the next issue.

"Hints For Diamond Prospectors."—We have received a very valuable communication under the above head from Mr. Melville Attwood, who has enjoyed the opportunity of making extensive observations on the manner of washing for diamonds in the Brazilian fields. He also gives some simple yet very definite tests for determining what *is* and what is *not* a diamond, which are within the easy reach of every person. The communication will appear next week as No. VI of a series of articles on "The Diamond."

Domestic Economy.

Canning Fruit.

To many, the proces of canning fruit ie laboroue and irksome, because they do not know how to take hold of it the eaey way. There ie not the slightest difficulty in keeping cherries and berrice of all kinde perfectly fresh during tbe entire year. Of course there is a right mode of doing it; and tbe right way is the best way and the easieet way.

As to cans the simplest are the best. Those of glass, with glaee covers, a rubber band, and a screw ring, are as easily sealed as they are unsealed, and can he managed by any intelligent child of 12 or 13. A tin funnel, just fitting into the neck of these, can he made for 20 cents, and with this the cane may he filled very rapidly and without spilling. Ae to fruit, it should he perfectly fresh and sound and carefully picked over, so that no ill flavor will injure its quality when it comee to the table.

	Time Boiling. Minutes.	Sugar to Qt.—Oz.
Cherries	6	6
Raspberries	6	4
Blackberries	6	6
Plums	10	8
Whortleberries	5	4
Peaches, whole	15	4
Peaches, halved	8	4
Pears, whole	30	8
Pears, halved	20	6
Pineapple, sliced	15	6
Ripe Currants	6	8
Grapes	10	8
Tomatoes	30	0
Gooseberries	8	8
Quinces, sliced	16	10

The fruit will keep just ae well without sugar as with it, and many prefer it without. Sugar always risee in price during the preserving season, and we can wait till berries are made into pies next winter and then add sugar as well as to put it in now. In canning peaches, if two or three are put in without removing the pite, a bitter almond flavor will pervade the whole can. This flavor may be given to peach preserve hy boiling with the fruit in the syrup the kernels of the peach-stones. For most palates this is an improvement.

As to the process, place a very wet cloth in the dish-pan; set the jar on this, having previouely riused it in cold water; place in it a eilver spoon; put in the funnel and a cupfull of eyrup first; then fill with fruit to the top. Remove the spoon and set the jar where no draft of air can strike it. Tbe fruit should be covered with eyrup. In 10 or 15 minutee the contents of the jar will have cooled and settled some, and they will he ready to seal up. Fill them to the top with syrup or hot water; put on the rubber, the glass cover, and the screw ring. When the jars are cold the ring should he tightened again, and then set away in a cool, dark place. Some put a circular piece of paper on top of the jar just hefore putting the cover on and think this prevents the mold that sometimee forms over the fruit. But if the cans stand till partially cool, aud are then filled full before heing sealed, no mould will form.

Ae to the purchase of cans: If one sends direct to the manufacturer and huys by the gross, he will save all the profits of middlemen. The money usually spent in putting up fruit in the old-fashioned way—a pound of sugar to a pound of fruit—if invested in cans and fruit alone, would go further and would he vastly more healthful in the relish secured for our tables.—*N. Y. Tribune.*

Cooking Beans.—After preparing the beans hy any process of hoiling preferred, they are placed in the pot, and a piece of pork laid on the top large enough to fill the opening; rind side up. This ehould staud in a heated oven for houre, of course the heans cannot dry or scorch, and are reduced by the elow heat to a rich, unctious mass, very unlike those expoeed in a dripping pan, however carefully haked. In Boston, where baked heane are so famous, families prepare these pots and send them Saturday evening to the hakers, where they stand in the oven all night aud are returned hot Sunday morning.

There is a delicious dish from dried beans, the secret of whose preparation I almost fear has been buried in the graves of our grandmothere. The following recipe was received from an aged friend and found to he delicions: One cup of heans (measured when dry), one pound of fresh meat; boil till perfectly soft, and add salt, pepper and hutter to taste—this is true "hean porridge." When potatoee were in such a half civilized state that they had a "hest end," the other being rejected, beane occupied a very prominent place on the farmer's tahle, hut since the wonderful improvement of the potato this healthy and delicious esculent has heen neglected.

The following recipe for using string beans, taken from a German cook-hook, will be found very excellent: "String the beans and break them into lengthe of two or three inches, boil with a little ealt until done, and while warm mince an onion very fine and ecatter among them, cover with cold vinegar and the next day they are fit for use." One onion is sufficient for two quarts of heans, ae only a slight flavor is desired.—*Cor. Country Gent.*

Miscellaneous.

The Dunderberg Mine.

A correepondent, eigning himself "Miner," writee from Bridgeport, Mono Co., Cal., to tbe Virginia City *Chronicle* as follows, concerning this mine: The Dunderberg mine is situated at Castle Peak, about 12 miles south of this place, on the head waters of Dogtown Creek, which is the head waters of East Walker River. Dogtown Creek has been noted for rich placer mines for over 12 years. When the mines were first opened they paid very largely. For some years past they have mostly heen worked hy Chinamen, paying small wages. Recently several claims have been opened by white men, using hydraulic power with good succese. The chences are tbat a large amount of gold will be extracted this seaeon.

The Dunderberg mine, or lode, is situated immediately at the head of the creek, where undouhtedly all the gold comee from, ae there does not appear to he any other ledge in tbat part of the country. The mine was first discovered and located by Charlee Snyder & Co. several yeare ago, and was afterwards purchased by Dr. Geo. Munckton and others, of Carson, at a hig figure. When they made the purchase a shaft had heen sunk on the ledge to the depth of about 40 feet, from which was takeu about 100 tons of ore. Three tons of an average grade wae hauled to Aurora, about 30 milee, which paid hy mill process over $50 to the ton, heing about three-quartere gold and one-quarter silver—the hullion heing worth $4 per ounce. Munckton & Co then started a tunnel, which has been run a little over 600 feet in length which taps the ledge abont 250 feet from the surface. They then cut across the ledge 34 feet, hut failed to find the hanging or west wall (the ledge running north and south), hut heing in vein matter the whole distance. On the foot or east wall there was about five feet of solid quartz, the bottom beiug more or less mixed with porphyry and slate formation. The company then run drifts hoth north and south along the foot wall for about 300 feet, which does not vary a foot from a straight line the whole length. They found continuous quartz the whole distance, varying in richness, some of the assays going over $2,000 to the ton iu silver aloue, showing conclusively that it is a silver mine, wheu the proper depth is attained. A etope, etarted up over a portion of the richeet ore did not hold out as good as it wae below, showing that, to get out the richest ore in large quantities, it requiree greater depth. Several hundred assays made hy the company for their own private use, to see what to eelect and what to reject in running other drifts, averaged nearly $100 to the ton. Reduction works were erected some time ago, when it was found that to work that rich ore closely the amalgamating part of tbe worke required a change. Ahout that time some London capitalists honded the mine for some $200,000 or $300,000, after their agent had made a thorough examination and had reported very favorably on the mine. For eome reason or another the London folks failed to come to time. Some few weeke ago the company incorporated the mine and mill, together with some valuahle wood land and water rights, in San Francisco, making the capital etock five millions of dollars, with the followiug Trustees: John P. Jonee, the millionare, of your city; Senator A. N. Rose, of San Francisco; E. B. Rail, hardware merchant, of San Francisco (formerly of Carson); Dr. Geo. Munckton of Carson and O. H. Bogart of San Francisco; A. N. Rose, President, and O. H. Bogart, Secretary. I understand the company has been selling off a portion of the stock to raise a working capital. They have, or intend to raise, $25,000 as a working capital, which will ohviate any aesessment on the stock. Dr. Munckton ie now at the mine getting the worke started up. It is the intention of the company to make several cross-cuts across the ledge to the west or hanging wall and to sink deeper on the ledge, where they are sure of taking out rich ore. You may expect to hear of some large hricke being shipped from here ae soon as the mill starts up. The stock ought, and I have no doubt will go up to a hig figure before a great while. Some of our citizens here are taking some of the etock and are anxious for more. A mine could not be more favorahly located to work cheaply than the Dunderherg, as wood and water are in great abundance. The ore ehould he mined and milled for about $6 a ton, which will leave a large profit to the ownere. I have just learned that another company, called the Keystone and Boston Consolidated, situated immediately north of the Dunderberg, has heen incorporated in San Francieco, with some of the heavy merchante there ae Trusteee.

Scientific researcb, it ie stated, doee not make such rapid progress in Great Britain as it doee either in Germany or France. Tbus, in regard to chemistry, the number of papers describing original investigations which were established iu 1866 amounted to 1,276, and were written by 805 chemiste, giving 1.58 esaye for each investigator. Of these, Germany contributed 445 authors and 777 papers, or 1.75 essays for each investigator: France 175 authors and 245 papers, or 1.44 essaye for each investigator, and Great Britain 97 authors and 121 papers, or 1.31 eeeays for each iuvestigator. Other countries furnished 93 authors and 124 papers, or 1.33 essays for each investigator. A large proportion of the papers contributed by Great Britain were written by Germans residing in that country.

The Idaho Mine.

We visited this mine yeeterday for the firet time eince the new mill and hoisting worke have been commenced. We fonnd the improvements well advanced under the hands of a large force of busy workmen. The new mill building occupies the site of the old one, and is a large airy structure, of graceful proportions. Tbe old batteries, of fifteen stamps, have remained undisturhed, and have continued at work while the new building hae been erected over them. In a line with the old batteries they are putting in four new ones of twenty stamps, the foundations of wbich have been laid in tbe most durable and workmanlike manner. The foundation for tbe new mill engine ie also well advanced, end the work partakes of tbe seme substantial character of all the improvements that are being made. This foundation will he surmounted by a new engine now heing manufactured by M. C. Taylor of this place, of 20-inch diemeter and 44-inch stroke, a superior piece of workmaneliip, and the largest engine ever manufactured in Grass Valley. Besides the present large hoiler used at tbe mill, two new tubular hoilers will he put in place, and are now on the ground ready for setting. The new hoisting works are 130 feet east of the mine, and are well toward completion. The huilding is 40 by 112 feet in dimensione. It contains four engines, two of which are now running and used in sinking the new shaft. They are small engines, of 10-inch diameter and 20-inch stroke, made hy J. M. Lakenan, of Grass Valley. The other two engines are powerful pieces of maebinery, from the foundry of Booth & Co., San Francisco, of 14-inch diameter and 5-feet stroke, and will be used in hoisting the cages in the main shaft. These engines are nearly ready to start up. The machinery all stauds upon solid mason work, and the engines that were in use were running smoothly and without perceptible jar. The new shaft is a splendid piece of work, upon which no expense has been spared to make it strong and durable. It will serve the purposes of the mine to work to any depth that the strong machinery has capacity for. The shaft is 6 hy 20 feet, divided into four compartments—two for cagee, one for sinking and lowering timbere and one for ladder way. Work on the uew shaft is going on hoth from above and helow, and hy the time the uew mill is ready to start up they can hoist ore from the 500 level. At present all the ore is raised through the old shaft, which is down to the 700 level. The new shaft will he put down to the same depth as rapidly as the work can be accomplished. It will take at least two months to have all the surface improvements at mill and hoisting works completed and the full head of 35 stamps set to work. This attained, with the richness of the mine ae now developed, the Idaho will greatly increase its reputation, which already ranke as the leading gold mine on the coast. The ore now heing extracted maintains its rich cbaracter, and as the different levele are extended the rock shows no diminution in value. After the new works take the place of the old, some of the old structuree will he removed in order to lessen the danger in the event of fire; and a reservoir ie immediately to he built to eupply water for the worke and ae a guard against fire. On the completion of these improvemente the Idaho works will be superior to those of any mine in California, in all ite appointmente, and will only he equalled or surpassed hy eome of the great works connected with the famous Comstock.—Grass Valley *Union.*

Astronomical Observatory.—The Truckee *Republican* is informed that Professor Davidson has determined upon Pollard'e Peak, Summit Station, as the proper place for the National Observatory. "This peak is located lees than a half mile from Summit Station, which is 7,042 feet above the sea level, and the highest point of the Central Pacific Railroad. Castle Peak, seven milee from the Summit, was examined hy Professor Davidson with the view of making it the place for the observatory, but the atmosphere from that peak was found to be too hazy, and the mountain iteelf too difficult of access to make it a desirable place for astronomical, barometical and atmospherical observations. Castle Peak has tbe advantage in altitude, as it is 9,764 feet ahove sea level, or 1,964 feet higher tban Pollard's Peak. The latter, however, is easily accessible, being less than half a mile from the railroad, and the atmosphere from ite summit is remarkahly clear, and for this latter reason it has heen selected by Professor Davidson. An appropriation of $50,000 has heen made by Cougress for the erection of the necessary buildings, purchase of telescope and other necessary instruments. The telescope to he used will be the second iu size of any in the United States. Once established, the observatory will he a permanent fixture, and will receive an annual appropriation from Congress of from $25,000 to $50,000."

For Repairing Paper Roofino, the asphaltum of which has suffered from effects of the sun, it is proposed to paint it with a mixture made hy slacking lime with sour milk and adding to thie, water, until the whole has the consistency of whitewash. The casein of the milk forms a cement with the lime, and thus the roofing is made water-proof and sun-proof.

Straw Compost.

A law of Sweden prohibits the removal or sale of straw from property of the crown under any conditions except by especial permission. Hence large amounts of this material have collected, and its utilization for agriculture has become a question of considerable importance. A number of experiments had been made without satisfactory result until, by order of the King, in 1870, new trials were undertaken at Bergshamra. These, according to Prof. Bergstrand, have been attended with success. The straw was thrown into heaps, 6 to 8 feet high, well moistened with water in which rape oil cakes had been dissolved (manure water would have been just as good but was not obtainable), and covered with earth to a depth of 4 or 5 inches. After a month the straw was turned, again moistened, and left until apparently in proper condition to be used as compost. From 30 loads of straw and 3 cwt. rape oil cakes, after 2½ months, about 30 loads of compost, the value and properties of which were determined by chemical analysis. The following gives a comparative view of the composition of straw compost and of ordinary stall compost:

	Straw Compost.	Stall Compost.
Water	74.36	79.30
Organic Substances	15.63	14.01
Ashes	10.01	6.69
	100.00	100.00
Nitrogen	0.23	0.41
Phosphoric Acid	0.10	0.20
Potash	0.17	0.50

The result of the chemical investigations lead to the proposition to add to about 15 loads of compost 1 cwt. superphosphate (of 12 per ct.) and 1 cwt. sulphate of ammonia. This would make a manure as good as, and in some respects better than, good stall compost.

What is Dirt?

Old Dr. Cooper, of South Carolina, used to eay to his students: "Don't be afraid of dirt, young gentlemen. What is dirt? Why, nothing at all offensive, when chemically viewed. Rub a little alkali upon the dirty grease spot on your coat, and it undergoes a chemical change and hecomes soap; now ruh it with a little water and it disappears. It is neither grease, soap, water nor dirt. That is a very odorous pile of dirt you see yonder; well, scatter a little gypsum over it, and it is no longer dirty. Everything like dirt is worthy our notice ae studente of chemistry. Analyze it; it will separate into very clean elements. Dirt makes corn, corn makes hread and meat, and that makee a very sweet young lady, that I saw one of you kissing last night. So after all, you were kissing dirt, particularly if she whitened her face with chalk or fuller's earth; though I may say that ruhhing such stuff upon the heautiful skin of a young lady ie a dirty practice. Pearl powder I think ie made of bismuth, nothing but dirt. Lord Palmerston's fine definition of dirt is 'matter in the wrong place.' Put it in the right place and we cease to think of it as dirt."

Montana Mines.—The Helena *Herald* mentions having seen a heautiful piece of silver ore from the famoue Legal Tender miue, at Clancy City, Montana, which assayed $3,558.84 per ton in silver. It was taken from the main shaft, at the depth of 110 feet, having a eolid vein of ore 16 inchee in width. The specimen was sent in to be placed in the cabinet of the Northern Pacific Railroad. The company sacked on the 20th of August, 3,000 pounds that averaged $1,462 per ton.

The same paper says that a nice slug of retort weighing 600 ounces, valued at ahout $12,000, came from a two-weeks run from Keating & Blacker's rich gold mine near Springville.

Earthquake.—Colonel Mendell reports that on the 23d of August, at 4 P. M., the Coast Survey tide gauge at Fort Point hegan registering earthquake waves, and continued to record the vibratious for a period of twenty hours. The phenomenon indicated tbat a great earthquake of long duration was taking place at the time at some great distance from this coast. The waves were ahout six inches high, and plainly detected on the heach. Some future arrival from the west will probably bring intelligence of the locality of this great convulsion.

A recent amendment to the general railway law in Massachusetts, all railways connected with Boston are required to run a six o'clock morning and evening train, and issue tickete therefor at a rate not exceeding three dollare per mile per year, for distances not exceeding fifteen miles. The object of the law is to provide cheap transportation for working people.

The barks are in so far true excrement that they arise from living plants, and play no further part in their vital functious; they may even be removed from them without therehy endangering their existence.

Business Cards.

H. C. BENNETT,
STATISTICIAN.
Reports and estimates made about all departments of Production, Commerce, and Manufacture, of the Pacific Coast. 5v24-tf

RICHARD H. STRETCH, Civil Engineer,
City and County Surveyor.
Office—Room 16, City Hall. 11v24-3m

GILES H. GRAY. JAMES M. HAVEN.
GRAY & HAVEN,
ATTORNEYS AND COUNSELORS AT LAW,
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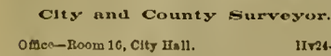
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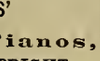
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FOR WEEK ENDING AUGUST 6TH, 1872.

PUPPET-VALVE.—Otie Adams, S. F., Cal.

MATERIAL FOR STUFFING MATTRESSES, ETC.—Robert J. Kellett, S. F., Cal.

MATERIAL FOR FILLING MATTRESSES, ETC.—William J. Woodley S. F., Cal.

DUMPING-CAR.—Jamee M. Thompson, Quincy, Cal.

DUMPING-CAR.—James M. Thompson, Quincy, Cal.

——*The patents are not ready for delivery by the Patent Office until some days afterward.

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New Incorporations.

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CHAMPION CONS. M. & S. Co., Aug. 29. Location: In California and Nevada. Capital stock, $5,000,000. Trustees: J. P. Jones, Martin White, William Paul, George A Treadwell and Henry Baker.

INDEPENDENCE CONS. M. Co., Aug. 29. Location: Grass Valley, Nevada. Capital stock, $2,-160,000. Trustees: George. W. Lawlor, Joseph Assiou, Charles Stampfli, J. Baumberger and J. B. L. Brandt.

MARIN COUNTY WATER Co., Aug. 30. Object: To supply the town of San Rafael, in Marin Co., with pure and fresh water. Capital stock, $600,-000, divided in 6,000 shares of the par value of $100 each. Trustees: Wm. T. Coleman, Chas. Mayne, Charles J. Brenham, J. Mora Moss and M. J. O'Connor.

S. F. MICROSCOPICAL SOCIETY, Aug 30. Object: It is designed to be, and is, a moral, beneficial and literary association, and its object is the promotion of microscopical science in all its branches, to be accomplished by the holding of meetings for scientific intercourse and discussion, by the reading and publication of papers containing original contributions to microscopical and kindred sciences. Trustees: Henry G. Hanks (President), A. B. Stout (Vice-President), C. Mason Kinue (Recording Secretary), Henry C. Hyde (Corresponding Secretary) and D. P. Belknap (Treasurer).

PACIFIC DIAMOND AND RUBY M. Co , Sept. 2. Object: To carry on the business of mining and exploring for gold, silver, and other precious minerals and substances of every name and nature, and to do such commercial business connected therewith as the interests of said company may require. Capital stock, $10,000,000, divided into $100,000 shares of the par value of $100 each. Trustees: B. F. Sherwood, Jos. De La Montagnie, Joel F. Lightner, S. W. Lee, Franklin Lawton, O. Dickenson, Jr., and B. Dore.

MAZEPPA M. Co., Sept. 2. Location: Ely District, Nevada. Capital stock, $3,000,000, in $30,-000 shares. Trustees: H. Raymond, Geo. M. Sabon, J. T. Beas and W. H. Raymond.

PESCADERO WATER Co., Sept. 3. Object: Supplying the town of Pescadero with pure water from the Pescadero creek, the water to be taken from near the headwaters of the creek, about six miles above the town. Capital stock, $100,-000, in 10,000 shares. Trustees: G. S. Andrews, A. C. Morse, David McQuillan, A. B. Andrews and Wm. Holden.

REVENUE TUNNEL & M. Co., Sept. 4. Location: Big Cottonwood District, Salt Lake. Capital stock, $2,000,000, in 40,000 shares. Trustees: Tyler Curtis, A. J. Bryant, Geo. Barstow, James Lauforth and W. W. Black.

CALIFORNIA TUNNELING MACHINE Co., Sept. 4. Object: Excavating tunnels, manufacturing the Hughes' Patent Tunneling Machiues and taking contracts therefor. Capital stock, $300,000, in 3,000 shares. Trustees: Wm. P. Dangerfield, Henry Anderson, Wm. M. Hughes, W. H. Smith and Geo. Knoll.

Meetings and Elections.

MEADOW VALLEY M. Co.—Aug. 22: L. Maynard, President, and T. W. Colburn Secretary.

SEGREGATED CALEDONIA M. Co.—Aug. 30. Trustees: Alexander Forbes, (President), L. Maynard, J. H. Baird, W. H. Brewer, and Thomas Stewart. Andrew C. Ryce was elected Secretary.

SENATOR S. M. Co.—Aug. 28. Trustees: J. E. De la Montagnie (President), Sampson Tams, Nathaniel Page, W. F. Myers and John O. Hanscom. Henry Boyle, Secretary; and H. S. McCallough Superintendent.

DUNDERBERG M. AND M. Co.—Aug. 30. Trustees: J. P. Jones, A. H. Rose, E. B. Rail, Geo. Munckton and O. H. Bogart.

NORTH BEACH AND MISSION RAILROAD Co.—Directors: John Morton (President), J. T. Boyd (Vice-President), Michael Skelley (Superintendent), Michael Reese (Treasurer), J. C. Wilmerding and T. L. Barker. Secretary, H. W. Hawthorne.

CEDERBERG FIRST NORTHERLY EXTENSION M. Co.—Trustees: A. J. Morrell, R. R. Swain, C. S. Hobbe, J. F. Milliken, B. F. Norton and E. Tripp. J. N. Webster Secretary.

SUCCOR M. AND M. Co.—Trustees: Chas. Jones, Isaac Wormser, E. J. Moore, F. K. Shattuck and A. Sutro.

INDEPENDENCE CONS. M. Co.—Trustees: Chae. Staempfli, (President), J. B. L. Brandt (Vice-President), Jamee Baumberger (Treasurer), G. N. Lawlor and Joseph Assion. A. F. Benjamin, Secretary; and Joseph Suyder, Superintendent.

PACIFIC DIAMOND AND RUNY M. Co.—Aug. 3: J. De la Montagnie, President; B. F. Sherwood Vice-President and Treasurer; W. J. Kipp, Jr., Secretary.

Important Law to Companies Incorporating.

Hon. Giles H. Gray, Chairman of Committee on Corporations in the Assembly of the last California Legislature, has furnished us a copy of the following law, to which we would call the attention of those interested:

AN Act to amend an Act entitled, "An Act to provide for the formation of corporations for certain purposes," approved April fourteenth, eighteen hundred and fifty-three.

SEC. I. Section two of said Act is hereby amended so as to read as follows:

SEC. II. Any three or more persons who may desire to form a Company for auy one or more of the purposes specified in the preceding section, may make, sign aud acknowledge, before some officer competent to take the acknowledgment of deeds, and file in the office of the County Clerk of the County in which the principal place of business of the Company is intended to be located, and certified copies thereof under the hand of the Clerk and seal of the County Court of said County, in the office of the Secretary of State, and in the office of the Clerk of the several Counties in which they may carry on their business, a certificate in writing, in which shall be stated the corporate name of the Company, the object for which the Company shall be formed, the amount of its capital stock, the time of its existence not to exceed fifty years, the number of shares of which the stock shall consist, the nnmber of Trustees and their names, who shall manage the concerns of the Company for the first three months, and the names of the city, or town, aud county in which the principal place of business of the Company is to be located.

SEC. III. This Act shall take effect aud be in force from and after its paesage.

Mining Discoveries.

The Castroville *Argus*, of the 17th, gives a long account of the circumstancee relating to the re-discovery of a "lost ledge" in Cormelo Valley, Monterey county. The ledge had been worked secretly some fifty years ago by a Mexican woman named Romero, who smelted out tho silver aud sold it at Monterey. She kept the locality secret in spite of all efforts to discover it, and died without divulgiug it. In 1857 the ledge was fouud by a Mexican boy who got out some metal and worked it into silver rosettes, buckles, etc., having some knowledge of the jeweler's business. He also died without telling the locality. Dr. E. M. Alderman who settled in the valley abont five years eince, spent some time in hunting up the children of the deceased woman to gather what information he could about the matter. He snceeeded in obtaiming a description of the appearance of the place from them, and eix months ago started on a prospect for the mine, which, according to the *Argus* he has at last discovered. He found all the land marks as described, and the rock he brought back is estimated as being worth $1,300 to the ton. The lead is large and is between thirty and forty miles southeast of Monterey. How it happeus that children of the woman did not hunt it up themselves, when they could give a description of the place that led to its discovery, does not appear, but the Doctor has taken good care that the ill-luck of the other discoverers will not happen to him, as far as dyiug without describiug the place is concerned, for he has made it public before returning to the mine a secoud time.

Considerable excitement exists over a recent strike in silver ore about two and one-half miles west of Carson City.

It is reported that large qnantities of galena have been fonnd near Rawlins in Washington Territory, some of which aseays $4,000 per ton.

A rich gold ledge, four feet wide, with rock worth from $40 to $90 per ton has been fonnd about eight miles from Kernville, near Bull Run creek, Kern county, Cal.

DISASTROUS FIRE.—The Interuational Mill at Eberhardt, White Pine, Nevada, was totally destroyed by fire on the morning of the 31st ult. The mill had sixty stamps and was one of the most complete ever built on this coast. It belouged to the Eberhardt & Anrora Company (of England), was built about two years since and cost npwards of $230,000. The fire originate1 in the dry kiln; loss partly covered by insurance. The burning of the mill throws a nnmber of men out of employment aud is a serious blow to the prosperity of White Pine District. The ore from the mine will now probably be worked at the Stanford Mill, which we believe, is on the line of the wire tramway.

EMPEROR NORTON hae invented a railroad switch, a model of which is now being made. It consiste of a novel application of a spiral or elliptic spring, operated by the weight of the passing train, by which the switch is turned off or on as desired. Patent applied for.

MINE SOLD.—The Unionville *Silver State* says it ie rumored that the Marietta mine, in Central District, has been sold to Gashwiler and Bull, for $45,000.

San Francisco Metal Market.

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, Sept. 5, 1872.

IRON.—			
Scotch Pig Iron, ₱ ton	$60 00	@	65 00
White Pig, ₱ ton	50 00	@	55 00
Refined Bar, had assortment, ₱ lb	— 04½	@	— 5
Refined Bar, good assortment, ₱ lb	— 05	@	— 5½
Boiler, No. 1 to 4	05½	@	06
Plate, No. 5 to 9	06½	@	07
Sheet, No. 10 to 13	07½	@	— —
Sheet, No. 14 to 20	07½	@	— —
Sheet, No. 24 to 27		@	— —
Horse Shoes	8 00	@	
Nail Rod	10		
Norway Iron	8		
Rolled Iron	5		
Other Irone for Blacksmiths, Miners, etc.	5½	@	5½
COPPER.—			
Sheathing, ₱ lb	— 40	@	— 45
Sheathing, Yellow	— 28	@	— 30
Sheathing, Old Yellow	— 12	@	— 12½
Composition Nails	— 28		— 30
Composition Bolts	— 28		— 30
TIN PLATES.—			
Plates, Charcoal, IX ₱ box	17 50	@	— —
Plates, I C Charcoal	15 50		— —
Roofing Plates	15 50		16 —
Banca Tin, Slabs, ₱ lb	— 50		— 55
STEEL.—English Cast, ₱ lb	— 18		— 20
Drill	18		20
Flat Bar	18		20
Plough Points	3 75		4 00
Russia (for mould hoards)	12½		15
QUICKSILVER.—₱ lb	— 85		— 87½
LEAD.—Pig, ₱ lb	— 03¾		— 06
Sheet	— 10		— —
Pipe	— 9		— 10
Bar	06½		07
ZINC.—Sheets, ₱ lb	— 11		— 11½
BORAX.—Refined	— 28		— 30
Borax, crude	— 5		— —

Leather Market Report.

[Corrected weekly by Dolliver & Bro., No. 109 Post et.]

SAN FRANCISCO, Thursday, Sept. 5, 1872.

SOLE LEATHER.—The Eastern market is higher, and some tanners have advaced their prices here. We quote as below:

City Tanned Leather, ₱ lb	26@29
Santa Cruz Leather, ₱ lb	26@29
County Leather, ₱ lb	25@28
Stockton Leather, ₱ lb	26@29

French skins continue firm. All California skins are scarce and bring full pricee.

Jodot, 8 Kil., per doz	$60 00@		
Jodot, 11 to 19 Kil., per doz	68 00@	88	00
Jodot, second choice, 11 to 15 Kil. ₱ doz	56 00@	75	00
Lemoine, 16 to 18 Kil. ₱ doz	75 00@	77	50
Levin, 12 and 13 Kil., per doz	68 00@	70	00
Cornellian, 16 to 19 Kil., per doz	83 00@	85	00
Cornellian, 12 to 14 Kil., per doz	60 00@	68	00
Ogerau Calf, ₱ doz	54 00@		
Simon, 18 Kil., ₱ doz	65 00		
Simon, 20 Kil. ₱ doz	68 00		
Simon, 24 Kil. ₱ doz	72 00		
Robert Calf, 7 and 8 Kil	35 00@	40	00
French Kips, ₱ lb	1 10@	1	30
California Kip, ₱ doz	50 00 to	80	00
French Sheep, all colors, ₱ doz	15 00		
Eastern Calf for Backs, ₱ lb	1 15@	1	25
Sheep Roans for Topping, all colore, ₱ doz	9 00@	13	00
Sheep Roans for Linings, ₱ doz	5 50@	10	50
California Russett Sheep Linings	1 75@	5	50
Best Jodot Calf Boot Legs, ₱ pair	5 25		
Good French Calf Boot Legs, ₱ pair	4 50@	5	00
French Calf Boot Legs, ₱ pair	4 00		
Harness Leather, ₱ lb	30@	37½	
Fair Bridle Leather, ₱ doz	45 00@	72	00
Skirting Leather, ₱ lb	34@	37½	
Welt Leather, ₱ doz	30 00@	50	00
Buff Leather, ₱ foot	18@	21	
Wax Side Leather, ₱ foot	20@	22	

OFFICE OF SWANSEA MELTING AND REFINING COMPANY OF CHICAGO, July 15, 1872.

L. P. DODGE, Esq., Agent for Messrs. WHELPLEY & STORER—Dear Sir: Your communication of the 10th instant is at hand. In reply would say that we have been running a Whelpley & Storer Pulverizer for the last eix months, grinding ores of different kinde, some of them exceedingly hard. The operation of the Pulverizer has been, in every reapect, a complete success, grinding very fine, with but little power required to drive it, aud but slight expenee for wearing parts. We cordially recommend them to all parties requiring a Pulverizer for mining or other operationa.

Reapectfully, J. W. JONES, Superintendent, etc.

N. B.—See illustratcd advertisement in another column.

Mining and Other Companies.

Owing to the time necessary to mail the present large edition of the M. & S. Press, we are obliged to go to press on Thursday evening—which is the very latest hour we can receive advertisements.

Beckwith Mining Company, Ely Mining

District, Lincoln County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees, of said Company, held on the 19th day of August, 1872, an assessment of Twenty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the Office of the Company, Room 5, No. 302 Montgomery street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Saturday, the 28th day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the 23d day of October, 1872, to pay the delinquent assessment, together with cost of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery St., San Francisco.

Corona Consolidated Mining Company—

Location of worke, Eureka District, Lander County, Nevada.

NOTICE.—There are delinquent npon the following described stock, on account of assessment levied on the 25th day of June, 1872, the eeveral amounts set opposite the names of the respective shareholders as follows:

Namee.	No. Certificate.	No. Shares.	Amount.
Charles Hanson	229	100	$10 00
Charlee Hanson	230	100	10 00
Charles Hanson	233	50	5 00
Charles Hanson	234	20	2 00
Charles Hanson	238	50	5 00
Charles Hanson	239	50	5 00
Charles Hanson	240	50	5 00
Charles Hanson	241	50	5 00
Charles Hanson	242	50	5 00
Charles Hanson	272	50	5 00
Charles Hanson	274	50	5 00
Charles Hanson	275	25	2 50
Charlee Hanson	276	25	2 50
Charles Hanson	277	25	2 50
J M Foley	151	4000	400 00
D H Hall	324	500	5 00
D H Hall	325	500	50 00
D H Hall	326	500	50 00
D H Hall	327	500	50 00
D H Hall	328	200	20 00
D H Hall	329	200	20 00
D H Hall	330	100	10 00
D H Hall	331	100	10 00
D H Hall	332	100	10 00
D H Hall	333	50	5 00
D H Hall	334	50	5 00
D H Hall	335	50	5 00
D H Hall	336	50	5 00
D H Hall	337	25	2 50
D H Hall	338	25	2 50
D H Hall	339	25	2 50
D H Hall	340	25	2 50
H P Coon, Precident	150	4000	400 00
H P Coon, Preaident	151	4000	400 00
H P Coon, President	205	3000	300 00
E A Richardson, Trustee	153	200	20 00
E A Richardson, Trustee	154	200	20 00
E A Richardson, Trustee	155	400	40 00
E A Richardson, Trustee	156	500	50 00
E A Richardson, Trustee	157	500	50 00
E A Richardson, Trustee	169	500	50 00
E A Richardson, Trustee	170	500	50 00
E A Richardson, Trustee	171	500	50 00
E A Richardson, Trustee	172	500	50 00
E A Richardson, Trustee	173	200	20 00
E A Richardson, Trustee	175	200	20 00
E A Richardson, Trustee	177	200	20 00
E A Richardson, Trustee	179	100	10 00
E A Richardson, Trustee	180	100	10 00
E A Richardson, Trustee	181	100	10 00
E A Richardson, Trustee	182	100	10 00
E A Richardson, Trustee	183	50	5 00
E A Richardson, Trustee	184	50	5 00
E A Richardson, Trustee	185	50	5 00
E A Richardson, Trustee	186	50	5 00
E A Richardson, Trustee	187	50	5 00
E A Richardson, Trustee	188	250	25 00
E A Richardson, Trustee	190	50	5 00
E A Richardson, Trustee	191	50	5 00
E A Richardson, Trustee	192	50	5 00
E A Richardson, Trustee	193	50	5 00
E A Richardson, Trustee	194	50	5 00
E A Richardson, Trustee	195	50	5 00
E A Richardson, Trustee	196	50	5 00
E A Richardson, Trustee	197	50	5 00
E A Richardson, Trustee	198	100	10 00
E A Richardson, Trustee	199	100	10 00
E A Richardson, Trustee	200	100	10 00
E A Richardson, Trustee	201	100	10 00
E A Richardson, Trustee	202	100	10 00
E A Richardson, Trustee	203	20	2 00
E A Richardson, Trustee	204	20	2 00
E A Richardson, Trustee	210	1000	100 00
E A Richardson, Trustee	211	500	50 00
E A Richardson, Trustee	212	500	50 00
E A Richardson, Trustee	213	250	25 00
E A Richardson, Trustee	214	250	25 00
E A Richardson, Trustee	215	100	10 00
E A Richardson, Trustee	216	100	10 00
E A Richardson, Trustee	217	100	10 00
E A Richardson, Trustee	218	100	10 00
E A Richardson, Trustee	219	100	10 00
E A Richardson, Trustee	220	100	10 00
E A Richardson, Trustee	221	50	5 00
E A Richardson, Trustee	222	50	5 00
E A Richardson, Trustee	223	50	5 00
E A Richardson, Trustee	224	50	5 00
E A Richardson, Trustee	225	50	5 00
E A Richardson, Trustee	225	50	5 00
E A Richardson, Trustee	268	25	2 50
E A Richardson, Trustee	269	25	2 50
E A Richardson, Trustee	270	25	2 50
E A Richardson, Trustee	271	25	2 50
W H Adams	205	10	1 00
W H Adams	267	20	2 00
L S Adame	207	200	20 00
H Dut on	208	200	20 00
C J Collins	227	100	10 00
C J Collins	311	1000	100 00
C J Collins	314	250	25 00
C J Collins	315	250	25 00
C J Collins	317	150	15 00
C J Collins	318	100	10 00
C J Colline	319	100	10 00
C J Collins	320	100	10 00
C J Collins	343	25	2 50
C J Collins	344	10	1 00
C J Collins	345	5	50
C J Collins	345	5	50
C J Colline	347	5	50
H A Cheever	244	500	50 00
H A Cheever	245	500	50 00
H A Cheever	246	500	50 00
H A Cheever	247	200	20 00
H A Cheever	248	200	20 00
H A Cheever	250	200	20 00
H A Cheever	251	200	20 00
H A Cheever	252	100	10 00
H A Cheever	253	100	10 00
H A Cheever	254	100	10 00
H A Cheever	255	100	10 00
H A Cheever	255	100	10 00
H A Cheever	257	50	5 00
H A Cheever	258	50	5 00
H A Cheever	259	50	5 00
H A Cheever	260	50	5 00
H A Cheever	261	50	5 00
H A Cheever	262	50	5 00
H A Cheever	263	50	5 00
H A Cheever	254	55	5 00
H A Cheever	265	50	5 00
H A Cheever	266	50	5 00
J Clem Uhler, Trustee	270	500	50 00
J Clem Uhler, Trustee	280	500	50 00
J Clem Uhler, Trustee	281	250	25 00
J Clem Uhler, Trustee	282	250	25 00
J Clem Uhler, Trustee	283	250	25 00
J Clem Uhler, Trustee	284	250	25 00
J Clem Uhler, Trustee	285	100	10 00
J Clem Uhler, Trustee	286	100	10 00
J Clem Uhler, Trustee	287	100	10 00
J Clem Uhler, Trustee	288	100	10 00
J Clem Uhler, Trustee	289	100	10 00
J Clem Uhler, Trustee	290	100	10 00
J Clem Uhler, Trustee	291	100	10 00
J Clem Uhler, Trustee	292	100	10 00
J Clem Uhler, Trustee	293	100	10 00
J Clem Uhler, Trustee	294	100	10 00
J Clem Uhler, Trustee	295	100	10 00
J Clem Uhler, Trustee	296	100	10 00
J Clem Uhler, Trustee	297	100	10 00
J Clem Uhler, Trustee	298	100	10 00
J Clem Uhler, Trustee	299	100	10 00
J Clem Uhler, Trustee	300	100	10 00
J Clem Uhler, Trustee	301	100	10 00
J Clem Uhler, Trustee	302	100	10 00
J Clem Uhler, Trustee	303	200	20 00
J Clem Uhler, Trustee	305	100	10 00
J Clem Uhler, Trustee	306	20	2 00
J Clem Uhler, Trustee	307	20	2 00
J Clem Uhler, Trustee	308	20	2 00
J Clem Uhler, Trustee	309	20	2 00
J Clem Uhler, Trustee	310	20	2 00
P H Sullivan	304	25	2 50
T F Oronise, Trustee	323	1000	100 00
J Cassell, Trustee	341	100	10 00
J Caseell, Trustee	342	100	10 00
W J Ranken	350	100	10 00
W J Ranken	351	100	10 00
W J Ranken	352	100	10 00
W J Ranken	353	100	10 00
Amasa Clark	349	100	10 00
H P Coon	158	2000	200 00

And in accordance with law, and an order of the

Board of Trustees, made on the 25th day of June, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction at the office of the Company, 409 California street, San Francisco, Cal., on the 22d day of August, 1872, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

T. F. CRONISE, Secretary.

Office, 409 California street, San Francisco, California.

At a meeting of the Trustees, held this day, the above sale was postponed to Thursday, the 19th of September, A. D. 1871, at the same place and hour.

T. F. CRONISE, Secretary.

San Francisco, August 22, 1872.

The First Annual Meeting of the Stock-

holders of the Golden Chariot Gravel Mining Company, for the election of Trustees and any other business that may properly come before them, will be held at the office of the Company, No. 306 Market street, San Francisco, California, the 24th day of September, 1872.

S. W. COLLINS, Secretary.

San Francisco, Aug. 31, 1872. au31-4t

Cottonwood Creek Gold Mining Com-

pany.—Location of Works, Shasta and Tehama Counties, State of California.

Notice is hereby given, that at a meeting of the Trustees of said Company, held on the 19th day of August, A. D. 1872, an assessment of seven cents per share was levied upon the capital stock of said Company payable immediately in United States Gold Coin, to the Secretary, at the office of the Company, No. 411 California street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Tuesday, the 24th day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the 15th day of October, 1872 to pay the delinquent assessment, together with costs of advertising and expenses of the sale.

JOS. L. KING, Secretary.

Office, No. 411 California street, San Francisco, Cal.

Marcelina Silver Mining Company—Lo-

cation of works, Eureka Mining District, Lander County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 24th day of July, 1872, an assessment of Thirty (30) Cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, 419 California street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 9th day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 30th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

CHAS. E. ELLIOT, Secretary.

Office, 419 California street, San Francisco, Cal.

Mina Rica Mining Company—Location of

works, Auhurn Mining District, Placer county, State of Nevada.

Notice is hereby given that at a meeting of the Trustees of said Company, held on the 6th day of August, 1872, an assessment (No. 7) of Twenty (20) cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, 310 California street, Room 5, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 10th day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on the 24th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

GEO. R. SPINNEY Secretary.

Office, No. 320 California street, Room No. 5, San Francisco, Cal. Aug30-4t

Morning Star Gold and Silver Mining

Company—Location of works, Great Mogul District, Alpine County, State of California

NOTICE.—There are delinquent upon the following described Stock, on account of Assessment levied on the 12th day of July, 1872, the several amounts set opposite the names of the respective Shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Abbott, J E	263	1	$1 00
Blum, Charles	231	3	3 00
Cassidy, E	211	5	5 00
Culver, Mary E	621	40	40 00
Coates, W H	344	22	22 00
Dandel, C	247	5	5 00
Dandel, C	244	5	5 00
Dandel, C	343	5	5 00
Domett, Mrs M A	365	4	4 00
De Glomal, J	910	5	5 00
Dungan, G W	717	5	5 00
Enaign, O H	965	1	1 00
Fagin, P B	967	1	1 00
Gilman, L	72	10	10 00
Gilman, L	269	10	10 00
Gilman, L	270	10	10 00
Gilman, L	271	5	5 00
Gilman, L	493	5	5 00
Gressam, Wm	611	5	5 00
Gadaby, E H	969	1	1 00
Gou, C P	915	5	5 00
Harvey, Alameda	939	20	20 00
Hyndman, Wm	935	20	20 00
Hill, Mary	529	5	5 00
Kilgour, C H	434	3	3 00
Kelly, William	657	15	15 00
Litton, Thomas	620	10	10 00
Mansell, Frederick	765	10	10 00
Marston, J C	919	2	2 00
O'Donnell, James	661	5	5 00
Palmer, Margaret	728	15	15 00
Reed, Miss J M	946	5	5 00
Scott, L	971	1	1 00
Swartz, Mrs A	651	10	10 00
Tabor, Isaac	973	1	1 00
Vance, James	963	1	1 00
Wegeln, George	749	10	10 00
Webster, G G	977	1	1 00
Webster, G G	979	1	1 00
Wally, David	435	5	5 00
Wally, David	735	10	10 00
Wally, David	750	15	15 00
Wally, Mrs H J	562	5	5 00
Wanken, Herman	647	5	5 00
Wankon, Herman	691	5	5 00
Wankon, Herman	718	1	1 00
Wankon, Herman	748	5	5 00
Young, Almira	496	10	10 00
Young, Almira	678	10	10 00

And in accordance with law, and an order of the Board of Trustees, made on the 12th day of July, 1872, so many shares of each parcel of said Stock as may be necessary, will be sold at public auction, at the office of the Company, Room No. 43, New Merchants' Exchange, California street, San Francisco, on the 14th day of September, 1872, at the hour of 1 o'clock P. M., of said day, to pay said delinquent Assessment thereon, together with costs of Advertising and expenses of sale.

O. H. BOGART, Secretary.

Office—Room 43, Merchants' Exchange, (3rd floor) California street, San Francisco, Cal. au24

Mount Jefferson Milling and Mining Com-

pany.—Location of works, First Oarotte, Tuolumne county, California.

NOTICE.—There are delinquent upon the following described stock, on account of assesament levied on the Twenty-fifth day of July, A. D. 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Kingsley, S B	98	1000	$100 00
Lewis, L J, Trustee	53	200	20 00
Lewis, L J, Trustee	58	50	5 00
Lewis, L J, Trustee	59	50	5 00
Richardson, E A, Trustee	57	100	10 00
Richardson, E A, Trustee	75	100	10 00
Richardson, E A, Trustee	81	200	20 00
Sherwood, Robert	94	40	4 00

And in accordance with law, and an order of the Board of Trustees, made on the 25th day of July, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of said Company, on Monday, the 16th day of September, 1872, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. W. CLARK, Secretary.

Office, 418 California street, Room No. 2, San Francisco, Cal. aug31-3t

Norman Gold Mining Company—Location

of works, Aqueduct Mining District, Amador County, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 27th day of June, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Eldridge, G C	17	100	$5 00
Eldridge, O C	18	100	5 00
Hosmer, D M, Trustee	43	300	15 00
Husmer, D M, Trustee	44	500	25 00
Hallet, O H	19	100	5 00
Humphreys, W P	26	100	5 00
Humphreys, W P	27	100	5 00
Hyuemann, S	55	100	5 00
Levingston, J	7	100	5 00
Owens, Thurston C, Trus.	155	500	25 00
Owens, Thurston C, Trus.	156	500	25 00
Plummer, M D, Trustee	2	500	25 00
Plummer, M D, Trustee	34	300	15 00
Plummer, M D, Trustee	33	80	4 00
Plummer, M D, Trustee	153	100	5 00
Sheppard, J	54	100	5 00
Stewart, O W	66	200	10 00
Sewall, O, Trustee	131	100	5 00
Sewall, O, Trustee	132	400	20 00
Thompsom, J M, Trustee	14	500	25 00
Thompson, J M, Trustee	49	500	25 00
Thompson, J M, Trustee	50	300	15 00
Thompson, J M, Trustee	107	3000	150 00
Thompson, J M, Trustee	109	200	10 00
Thompson, J M, Trustee	111	75	3 75
Teewilliger, N B	16	100	5 00
Wayman, W G	21	500	25 00
Wayman, W G	22	300	15 00
Wayman, W O	47	300	15 00
Wade, Rufus	24	100	5 00
Watson, Wm H, Trustee	63	1167	58 35
Watson, Wm H, Trustee	64	1000	50 00
Watson, Wm H, Trustee	67	100	5 00
Watson, Wm H, Trustee	68	100	5 00
Watson, Wm H, Trustee	69	100	5 00
Watson, Wm H, Trustee	70	100	5 00
Watson, Wm H, Trustee	71	100	5 00
Watson, Wm H, Trustee	72	100	5 00
Watson, Wm H, Trustee	73	100	5 00
Watson, Wm H, Trustee	74	100	5 00
Watson, Wm H, Trustee	75	100	5 00
Watson, Wm H, Trustee	78	100	5 00
Watson, Wm H, Trustee	77	50	2 50
Watson, Wm H, Trustee	78	50	2 50
Watson, Wm H, Trustee	79	50	2 50
Watson, Wm H, Trustee	80	50	2 50
Watson, Wm H, Trustee	81	50	2 50
Watson, Wm H, Trustee	82	50	2 50
Watson, Wm H, Trustee	83	50	2 50
Watson, Wm H, Trustee	84	50	2 50
Watson, Wm H, Trustee	86	50	2 50
Watson, Wm H, Trustee	87	20	1 00
Watson, Wm H, Trustee	88	20	1 00
Watson, Wm H, Trustee	89	20	1 00
Watson, Wm H, Trustee	90	20	1 00
Watson, Wm H, Trustee	91	20	1 00
Watson, Wm H, Trustee	92	20	1 00
Watson, Wm H, Trustee	93	20	1 00
Watson, Wm H, Trustee	98	20	1 00
Watson, Wm H, Trustee	97	30	1 50
Watson, Wm H, Trustee	98	30	1 50
Watson, Wm H, Trustee	99	30	1 50
Watson, Wm H, Trustee	100	30	1 50
Watson, Wm H, Trustee	101	30	1 50
Watson, Wm H, Trustee	102	30	1 50
Watson, Wm H, Trustee	103	30	1 50
Watson, Wm H, Trustee	104	30	1 50
Watson, Wm H, Trustee	105	30	1 50
Watson, Wm H, Trustee	106	30	1 50
Watson, Wm H, Trustee	108	666	33 30
Watson, Wm H, Trustee	130	100	5 00
Wirkheim M	110	26	1 25

And in accordance with law, and an order of the Board of Trustees, made on the 27th day of June, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, Room 5, No. 302 Montgomery street, San Francisco, Cal., on Tbursday, the 22d day of August, 1872, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

WM. H. WATSON, Secretary.

Office—Room 5, No. 302 Montgomery street, San Francisco. au3-3t

POSTPONEMENT.—The above sale is postponed until Tuesday, the Seventeenth (17th) day of September, 1872, and will be held at the same hour and place. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

San Francisco, August 22, 1872.

Nevada Land and Mining Company—Lo-

cations, Spruce Mountain, Clifton, and Antelope Mining Districts, Elko County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 18th day of July, 1872, an assessment of Eight Cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office. Any stock upon which said assessment shall remain unpaid on Saturday, the 31st day of August, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the 19th day of September, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery street, San Francisco, California. jul20-4t

NEVADA LAND AND MINING COMPANY—POSTPONEMENT.—The day for deeming stock delinquent on the above assessment is hereby postponed until Tuesday, the 10th day of Septembor, 1872, and the sale thereof until Monday, the 30th day of September, 1872, at the same hour and place. By order of the Board of Trustees.

sepi-1t WM. H. WATSON, Secretary.

Piermont Milling and Mining Company—

Location of works, Piermont Mining District, White Pine County, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the Tenth (10th) day of July, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Briggs, Charles A	16	583½	$450 00
Briggs, Charles A	47	101	66 60
McClure, R A	26	583½	350 00
McClure, R A	48	111	66 60
Perkins, J E, Trustee	21	1000	600 00
Perkins, J E, Trustee	23	1000	600 00
Perkins, J E, Trustee	41	381	228 60

And in accordance with law, and an order of the Board of Trustees, made on the 10th day of July, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of said company, on Tuesday, the 10th day of September, 1872, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

au17-4t J. W. CLARK, Secretary.

Office, Room No. 2, 418 California street, San Francisco, Cal.

The Piedmont Land Company—Location

of property, Alameda County, State of California.

Notice is hereby given, that at a meeting of the Directors of said Company, held on the twenty-first day of August, 1872, an assessment of Two Dollars, gold coin, per share, was levied upon the capital stock of said Company, payable immediately to the Secretary of said Company, at his office, No. 522 California street San Francisco, California. Any stock upon which said assessment shall remain unpaid on the twenty-first day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on the second day of October, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale.

FRANK JAYNES, Secretary.

Office, No. 522 California street. San Francisco, Cal., August 20th, 1872.

Quail Hill Mining and Water Company—

Location of works, Calaveras county, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 22d day of August, 1872, an assessment of five dollars per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary, at the office of the company, No. 409 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the 2d day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the 24th day of October, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. F. CRONISE, Secretary.

Office—409 California street, San Francisco, Cal. au31

Silver Sprout Mining Company—Location

of works and mines, Kearsarge District, Inyo county, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said company, held on the 26th day of August, 1872, an assessment of fifty cents per share was levied upon the capital stock of said company payable immediately in United States gold coin, to the Secretary at the office of the company, No. 318 California street, S. F.

Any stock upon which said assessment shall remain unpaid on the eighth day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the eighth day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. B. WINGARD, Secretary.

Office—Room No. 1, second floor, No. 318 California St., S. F. au31-4t

Spring Mountain Tunnel Company—Lo-

cation of works, Lincoln County, Nevada.

NOTICE.—There are delinquent upon the following described Stock, on account of assessment, No. 3, levied on the 9th day of July, 1872, the several amounts set opposite the names of the respective Shareholders as follows:

Names.	No. Certificate.	No Shares.	Amount.
J M Buffington, balances	6	955	286 50
David Leahy	132	1233	369.90
S M Keeler	23	666	199.80
F A Munroe	29	50	15.00
F A Munroe	31	25	7.50
F A Munroe	33	25	7.50
Ann O'Neill	93	1333	399.90
W I Jeffards	96	20	6 00
Geo E Rogers, Trustee	120	1333	399.90
J T Pomeroy, Trustee	151	100	30.00
J T Pomeroy, Trustee	152	300	90.00
J M Buffington, Trustee	91	360	108.00
Ford H Rogers	124	1333	399.90

And in accordance with law and an order of the Board of Trustees, made on the 9th day of July, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction on the 9th day of September, 1872, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. M. BUFFINGTON, Secretary.

Office, room 37, Merchants' Exchange, California St., San Francisco, Cal.

SPRING MOUNTAIN TUNNEL COMPANY—POSTPONED. The above sale is postponed until Monday, the 23d day of September, 1872, at the same hour and place. By order of the Board of Trustees. J. M. BUFFINGTON, Secretary.

San Francisco, Sept. 4th, 1872. sept-3t

Tellurium Gold and Silver Mining Com-

pany, Pine Grove District, Amador County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 3d day of September, 1872, an assessment (No 17) of one dollar ($1) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, N. E. Corner Clay and Kearny streets, in the City of San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 5th day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 26th day of October, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. SOERY, Secretary.

Office—Northeast corner Clay and Kearny streets, San Francisco, California. sep1

Victoria and Imperial Tunnel and Mining

Company.—Location of works, Little Cottonwood Mining District, Utah Territory.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 14th day of August, 1872, an assessment of Ten Cents (10c) per share was levied upon the capital stock of said Company, payable immediately in United States gold coin to the Secretary, at the office of the Company, Room 5, No. 302 Montgomery street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Wednesday, the 18th day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 12th day of October, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery street. au14 4t

Winnemucca Chief Silver Mining Com-

pany—Location of Works, Humboldt County, State of Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 19th day of June, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
John Robins	159	100	$15 00
John Robins	160	100	15 00
John Robins	161	100	15 00
John Robins	162	100	15 00
John Robins	163	100	15 00
John Robins	164	100	15 00
John Robins	165	100	15 00
John Robins	166	100	15 00
John Robins	167	100	15 00
John Robins	168	100	15 00
John Robins	176	100	15 00
John Robins	177	100	15 00
John Robins	178	100	15 00
John Robins	179	50	7 50
John Robins	200	500	75 00
John Robins, Trustee	9	500	75 00
John Robins, Trustee	19	500	75 00
John Robins, Trustee	20	500	75 00
John Robins, Trustee	21	100	15 00
John Robins, Trustee	22	100	15 00
John Robins, Trustee	23	100	15 00
John Robins, Trustee	24	100	15 00
John Robins, Trustee	25	50	7 50
John Robins, Trustee	26	50	7 50
John Robins, Trustee	27	50	7 50
T F Cronise, Trustee	111	500	75 00
T F Cronise, Trustee	112	500	75 00
T F Cronise, Trustee	113	200	30 00
T F Cronise, Trustee	114	200	30 00
T F Cronise, Trustee	115	200	30 00
T F Cronise, Trustee	116	200	30 00

Names.	No. Certificate.	No. Shares.	Amount.
T F Cronise, Trustee	117	200	30 00
T F Cronise, Trustee	118	100	15 00
T F Cronise, Trustee	119	100	15 00
T F Cronise, Trustee	120	100	15 00
T F Cronise, Trustee	121	100	15 00
T F Cronise, Trustee	122	100	15 00
T F Cronise, Trustee	123	100	15 00
T F Cronise, Trustee	124	100	15 00
T F Cronise, Trustee	125	100	15 00
T F Cronise, Trustee	126	100	15 00
T F Cronise, Trustee	127	100	15 00
T F Cronise, Trustee	128	100	15 00
T F Cronise, Trustee	129	100	15 00
T F Cronise, Trustee	130	100	15 00
T F Cronise, Trustee	131	100	15 00
T F Cronise, Trustee	132	100	15 00
T F Cronise, Trustee	133	100	15 00
T F Cronise, Trustee	134	100	15 00
T F Cronise, Trustee	135	100	15 00
T F Cronise, Trustee	136	100	15 00
T F Cronise, Trustee	137	100	15 00
T F Cronise, Trustee	138	50	7 50
T F Cronise, Trustee	139	50	7 50
T F Cronise, Trustee	140	50	7 50
T F Cronise, Trustee	141	50	7 50
T F Cronise, Trustee	142	50	7 50
T F Cronise, Trustee	143	50	7 50
T F Cronise, Trustee	144	50	7 50
T F Cronise, Trustee	145	50	7 50
T F Cronise, Trustee	146	50	7 50
T F Cronise, Trustee	147	50	7 50
T F Cronise, Trustee	148	50	7 50
T F Cronise, Trustee	149	50	7 50
T F Cronise, Trustee	150	50	7 50
T F Cronise, Trustee	151	50	7 50
T F Cronise, Trustee	152	50	7 50
T F Cronise, Trustee	153	50	7 50
T F Cronise, Trustee	154	50	7 50
T F Cronise, Trustee	155	50	7 50
T F Cronise, Trustee	156	50	7 50
T F Cronise, Trustee	157	50	7 50
T F Cronise, Trustee	172	100	15 00
T F Cronise, Trustee	173	100	15 00
A C Peachy	52	3000	450 00
A C Psachy	53	1000	150 00
J H Crossman	74	200	30 00
J D Mluor	11	100	15 00
M S Thompson	12	100	15 00
J J Lyun	13	100	15 00
O W Carter	14	100	15 00
M S Bonnifield	16	50	7 50
M S Bonnifield	17	50	7 50
T J Poulterer, Trustee	28	500	75 00
T J Poulterer, Trustee	29	500	75 00
T J Poulterer, Trustee	30	500	75 00
T J Poulterer, Trustee	32	500	75 00
T J Poulterer, Trustee	33	500	75 00
T J Poulterer, Trustee	34	500	75 00
T J Poulterer, Trustee	35	500	75 00
T J Poulterer, Trustee	36	500	75 00
T J Poulterer, Trustee	37	500	75 00
T J Poulterer, Trustee	38	500	75 00
T J Poulterer, Trustee	39	500	75 00
T J Poulterer, Trustee	40	500	75 00
T J Poultcrer, Trustee	41	500	75 00
T J Poulterer, Trustee	42	500	75 00
T J Poulterer, Trustee	43	500	75 00
T J Poulterer, Trustee	44	500	75 00
T J Poulterer, Trustee	46	500	75 00
T J Poulterer, Trustee	47	500	75 00
T J Poulterer, Trustee	48	500	75 00
T J Poulterer, Trustee	49	500	75 00
T J Poulterer, Trustee	50	500	75 00
T J Poultcrer, Trustee	51	500	75 00
T J Poulterer, Trustee	75	500	75 00
T J Poulterer, Trustee	76	200	30 00
T J Poulterer, Trustee	77	200	30 00
T J Poulterer, Trustee	78	100	15 00
T J Poulterer, Trustee	79	100	15 00
T J Poulterer, Trustee	80	100	15 00
T J Poulterer, Trustee	81	100	15 00
T J Poulterer, Trustee	82	100	15 00
T J Poulterer, Trustee	83	100	15 00
T J Poulterer, Trustee	84	50	7 50
T J Poulterer, Trustee	86	50	7 50
T J Poulterer, Trustee	87	50	7 50
T J Poulterer, Trustee	88	50	7 50
T J Poulterer, Trustee	89	50	7 50
T J Poulterer, Trustee	91	50	7 50
T J Poulterer, Trustee	93	35	5 26
T J Poulterer, Trustee	95	25	3 75
T J Poulterer, Trustee	96	25	3 75
T J Poulterer, Trustee	109	25	3 75
T J Poulterer, Trustee	110	26	3 75
T J Poulterer, Trustee	169	100	15 00
T J Poulterer, Trustee	170	100	15 00
T J Poulterer, Trustee	171	100	15 00
J Clem Uhler, Trustee	54	500	75 00
J Clem Uhler, Trustee	56	500	75 00
J Clem Uhler, Trustee	57	500	75 00
J Clem Uhler, Trustee	58	500	75 00
J Clem Uhler, Trustee	59	200	30 00
J Clem Uhler, Trustee	60	100	15 00
J Clem Uhler, Trustee	61	100	15 00
J Clem Uhler, Trustee	62	100	15 00
J Clem Uhler, Trustee	63	100	15 00
J Clem Uhler, Trustee	64	100	15 00
J Clem Uhler, Trustee	65	100	15 00
J Clem Uhler, Trustee	66	100	15 00
J Clem Uhler, Trustee	67	100	15 00
J Clem Uhler, Trustee	68	50	7 50
J Clem Uhler, Trustee	69	50	7 50
J Clem Uhler, Trustee	70	50	7 50
J Clem Uhler, Trustee	71	50	7 50
J Clem Uhler, Trustee	72	50	7 50
J Clem Uhler, Trustee	73	50	7 50
J Clem Uhler, Trustee	180	500	75 00
J Clem Uhler, Trustee	181	500	75 00
J Clem Uhler, Trustee	182	500	75 00
J Clem Uhler, Trustee	183	500	75 00
J Clem Uhler, Trustee	184	100	15 00
J Clem Uhler, Trustee	185	100	15 00
J Clem Uhler, Trustee	186	100	15 00
J Clem Uhler, Trustee	187	100	15 00
J Clem Uhler, Trustee	188	100	15 00
J Clem Uhler, Trustee	189	100	15 00
J Clem Uhler, Trustee	190	100	15 00
J Clem Uhler, Trustee	191	100	15 00
J Clem Uhler, Trustee	192	100	15 00
J Clem Uhler, Trustee	193	100	15 00
J Clem Uhler, Trustee	194	100	15 00
J Clem Uhler, Trustee	195	100	15 00
J Clem Uhler, Trustee	196	100	15 00
J Clem Uhler, Trustee	197	100	15 00
J Clem Uhler, Trustee	198	100	15 00
J Clem Uhler, Trustee	199	50	7 50
J Clem Uhler, Trustee	200	50	7 50
J Clem Uhler, Trustee	201	50	7 50
J Clem Uhler, Trustee	202	50	7 50
J Clem Uhler, Trustee	203	50	7 50
J Clem Uhler, Trustee	204	50	7 50
J Clem Uhler, Trustee	205	50	7 50
J Clem Uhler, Trustee	206	50	7 50
J Clem Uhler, Trustee	207	50	7 50
J Clem Uhler, Trustee	208	50	7 50
L L Robinson	210	600	75 00

And in accordance with law, and an order of the Board of Trustees, made on the 19th day of June, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, No. 409 California street, San Francisco, California, on the 20th day of August, 1872, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertisiug and expenses of sale.

T. F. CRONISE, Secretary.

Office, 409 California Street, San Francisco, California.

At a meeting of the Board of Trustees held this day, the above sale was postponed to Monday, the 16th day of September, 1872, at the same place and hour.

T. F. CRONISE, Secretary.

San Francisco, Cal., August 19, 1872.

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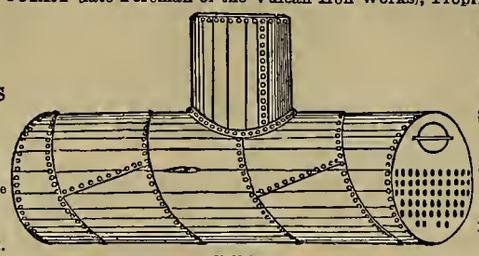

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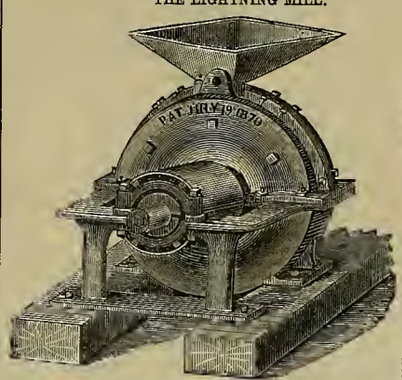

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For Pulverizing Quartz, "Charleston Rock," and all Native Phosphates, Flint, Feldspar, Iron Ore, Manganese, Antimony, Carbon, Corundum, Old Crucibles, Barytes, Brimstone, Slate, Soapstone, Graphite, Glass, Marble, Plaster, Anthracite and Bituminous Coals, etc.

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Patent Bone Mills and Crushers.

For Grinding Bones, Rock, Quariz, and all hard substances; also, Corn, Wheat, Oats, Barley, Coffee, Spices, etc.

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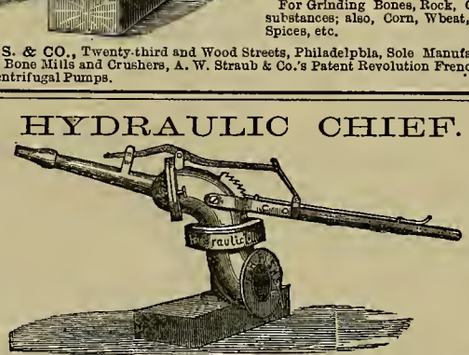

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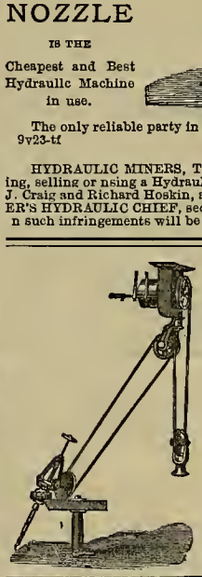

These machines can be placed with as much facility as a ratchet brace, and can be used in any position, at any distance, and in any direction from the power.
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Office, 315 California street. A. J. SEVERANCE,
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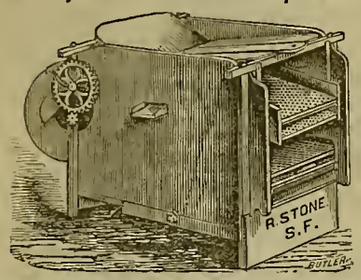
Novelty Mill and Grain Separator



one of the greatest improvements of the age for cleaning and separating Grain, while it combines all the essential qualities of a first-class Fanning Mill. It also far excels anything that has been invented for the separation of Grain. It has been thoroughly tested on all the different kinds of mixed Grain. It takes out Mustard, Grass Seeds, Barley and Oats, and makes two distinct qualities of wheat if desired.

For further information apply to
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Varney's Patent Amalgamator.

These Machines Stand Unrivaled.

For rapidity pulverizing and amalgamating ores, they have no equal. No effort has been, or will be spared, to have them constructed in the most perfect manner and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows.

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the apperture and between the grinding surfaces.—Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Setlers made on the same principle excel all others They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill-men are invited to examine these pans and setlers for themselves, at the office, 229 Fremont Street, San Francisco.

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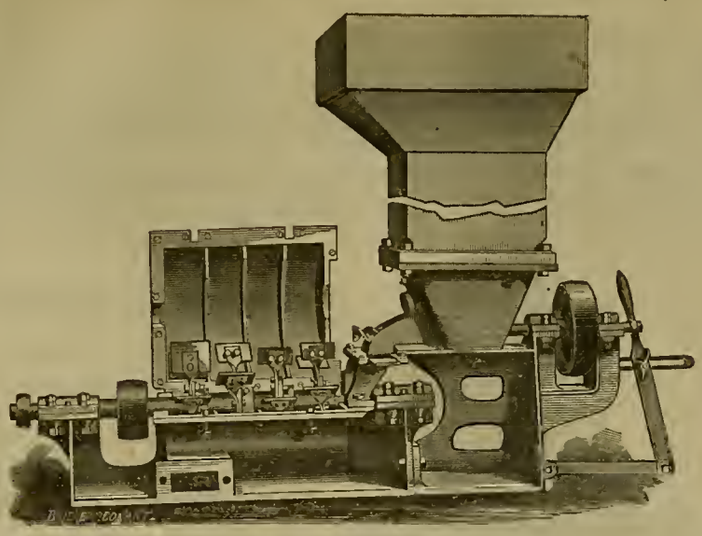

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May be seen in practical operation on Main street, between Howard and Folsom.
This Machinery has been adopted by nearly all the Eastern reduction works for reducing ores.
Parties purchasing machinery will find it for their interest to examine this before purchasing elsewhere.

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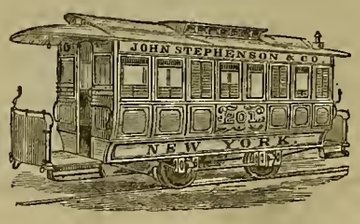

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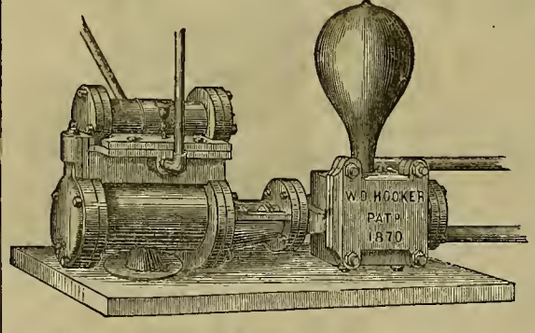

SIMPLE, CHEAP AND DURABLE.

Adapted for all purposes for which Steam Pumps are used. Manufactured by the inventor and patentee, at *Hooker's Machine Works, No. 112 Spear street, San Francisco.*

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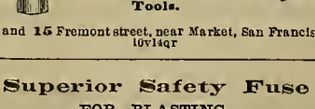

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Is now at his private Parlors, 37 and 38 Russ House, ready to wait on gentlemen.
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Manufacturer of
PATTERNS AND MODELS,
(Over W. T. Garratt's Brass Foundry).
N. W. corner Natoma and Fremont streets, S. F. Entrance on Natoma street. 6v23-3m

PERSONAL.—L. P. McCarty, correspondent and traveling agent of the MINING AND SCIENTIFIC PRESS of San Francisco, is at present in this city, where he will remain a few days examining our mines and soliciting subscribers to the publications of DEWEY & Co Mr. McCarty is an excellent correspondent and driving business man. He has visited the eastern portion of the State lately and described its mineral resources faithfully.—*Virginia Enterprise, 30th.*

THE MINING AND SCIENTIFIC PRESS entered on its twenty-fifth volume on the 6th inst. It is a valuable paper for the miner and mechanic.—*Auburn Herald.*

EVERY farmer in California should be a reader of the PACIFIC RURAL PRESS. It is an agricultural paper of great excellence. The subscription price is $4 a year, but we have made arrangements with the publishers whereby we can furnish the RURAL PRESS and the *Flag* together for $6 a year.—*Healdsburg Flag.*

SAN BUENAVENTURA, Aug. 17, 1872.

MESSRS. DEWEY & Co., San Francisco—Gentlemen: I received the patent specifications, drawings, etc., forwarded by you, and am much obliged for the prompt attenance you have given to all my business.

I remain, very truly yours, E. A. EDWARDS.

TO PARTIES USING STEAM BOILERS.

SIMMONS' DIRT, LIME AND SEDIMENT EXTRACTOR.—Attention is called to the above patent for the prevention of the accumulation of a crust in cylindrical boilers, thereby saving in the wear and tear of boilers and gauge-cocks, in the consumption of fuel, and effectually obviating the necessity of cleansing boilers, by its action, removing old scales and preventing the formation of new ones. This invention has been fully tried, and has stood the test as well in the Atlantic States as in California. The principle involved is purely mechanical, nothing with a chemical action or corrosive of the boilers being used with the pan to effect the object to be attained. We are permitted to refer to H. J. Booth & Co., of the Union Iron Works, and Horace Davis & Co., of the Golden Gate Flouring Mills, who have used the patent in their establishments. Persons ordering pans should state size of hand-hole.

Address, for circular and information, GEORGE H. TAY & CO., 514, 515 and 618 Battery street, San Francisco. J. A. HAUGH, Agent for Pacific Coast. se7-1m

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NOVELTY COMBINED WITH AMUSEMENT AND INSTRUCTION. Most Ingenious Toy of the Nineteenth Century. A Genuine Steam Working Engine, a Model of its Style, Complete and Perfect in all its Parts. Adapted to the wants of the Student, School-Room, and Parlor. This is not a humbug, but is a genuine Steam Engine, with Boiler, Cylinder, Piston, Fly-wheel, Safety and Throttle Valve, and a Grooved Pulley for imparting motion to other Toys. This Engine is designed for something more than temporary amusement, as it will afford the means of amusement for the old as well as the young, and prove to be a source of pleasure and profit to all. EXPLOSION IMPOSSIBLE.

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A MUCH MORE CONVENIENT BOOK

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Somewhat slower in its Explosion, which we recommend for

BANK BLASTING, COAL MINES,

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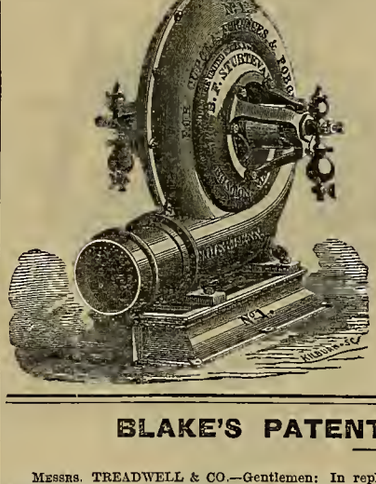

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Yours, etc., J. E. BUTLER,
Supt. Water Works and Engineer at W. C. Ralston's.

TREADWELL & CO., San Francisco, Selling Agents for Pacific States.

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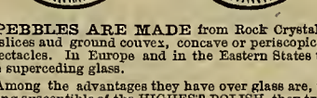

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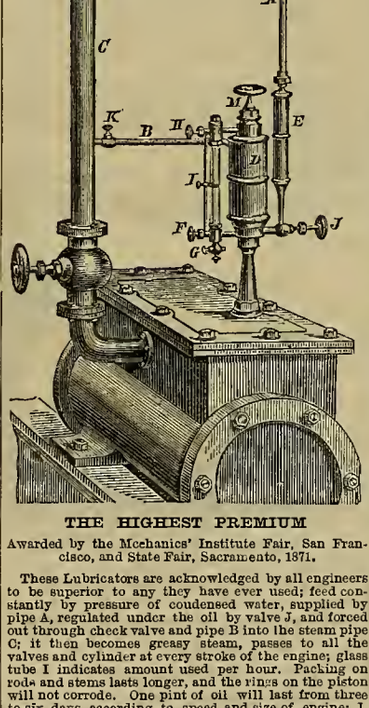

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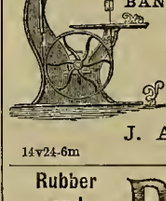

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SAN FRANCISCO, SATURDAY, SEPTEMBER 14, 1872.

VOLUME XXV. Number 11.

The Diamond.—No. VI.

Hints for Diamond Prospectors.

[Written for the PRESS by MELVILLE ATTWOOD, M. E.]

The reported discovery of rich diamantiferous gravels in New Mexico and Arizona, has already induced many of our California and Nevada prospectors to search for diamonds, and I feel convinced that they will be rewarded by finding them, not only in New Mexico and Arizona, but also in California.

As some of your numerous subscribers will be amongst those who are making the search, I think that a few rude hints, for testing the precious stones, and for the best mode of washing and treating the diamond gravel, may not be unacceptable, I have reduced to writing, in a rough way, a few of my ideas on the subject.

The diamantiferous gravels of Brazil are mostly derived from a rock called itacolumits, which has been weathered and worn down by geological commotions.

All the diamantiferous gravel which is not found in or near the rivers lies at the base of some mountain or stony mass.

At the Gni or Coulour Mine, in India, under the King of Golconda, where 60,000 souls were at one time employed, the diamonds are found on a plain situated between the town and the mountains, and the nearer they approach the latter the larger stones they found.

Diamonds have been found imbedded in the itacolumite rock and many persons conversant with the diamond washings are of opinion, that diamond dust may be obtained from that rock by stamping it the same as we do gold quartz.

Most of the diamonds in Brazil have been found within a few feet of the surface, and it is but of late years that deeper gravels have been worked—some of the gravels are now being worked from a depth of from 80 to 100 feet.

The diamond fields of Brazil are of great extent; they have been found at Cuyaba, in the Province of Matto Grosso; at Araguaya, Province of Goyaz; in Diamantina, Minas Novas; Sao Joao, etc., Minas Garaes and at Lencoes, Bahia.

Capt. Burton in his account of the diamond mines of Brazil, says:

"In 1845 Lencoes, which had been in the Municipality of Rio das Contas, was made independent. Presently a rush of 20,000 souls took place there and the city rose to importance. M. Reyband, Consul de France, Bahia, calculated from the date of discovery, Aug. 1st, 1845, a produce of 1,450 carats per diem, and a total of 400,000 carats=13,300,000 francs."

The diamond from its extreme hardness may easily be distinguished from any other gem, and the prospector should take care to provide himself with a file made of Asia Minor emery, (such as may be found at any dealer in watch-making tools) also a small diamond set firmly in the end of a tube two and a half inches long, to enable him to cut or scratch other stones with it; also a good magnifier with two or three lenses.

The emery file will cut all the stones he may meet with excepting the diamond and sapphire, and the diamond will cut the sapphire, enabling him at once to distinguish the former.

To ascertain the value of the diamond, it is always safest and best to apply to a respectable lapidary.

The emery file will scratch with ease the spinel, ruby, topaz, beryl, etc. The white topaz, in the form of what is called a Minas Novas, has frequently been mistaken for the diamond, but it is easily told by its inferior hardness, and from other stones of the same scale of hardness, by its becoming electric by friction. To prove which let the prospector rub the stone he wishes to try, rapidly along the sleeve of his coat, and then place a small piece of paper near to it; if a topaz the paper will at once adhere to the stone.

The diamond gravel is generally of three kinds. First, rounded pebbles mixed with sand and very little clay.

The second is composed mostly of angular stones in clay and light earthy matter.

The third consists of a mixture of the two former.

If the diamantiferous gravel be rich, after throwing out all the large stones, it should be sifted in a tub or cistern of water, with a hand riddle having one hole to the inch; afterwards with one having six holes to the inch; and to get rid of the finest dirt through another with twenty to the inch.

Whatever remains on the bottom of the riddle at each operation should be emptied on a large board for examination. The riddle should be made of a circular hoop of oak or ash ¾ of an inch thick and six deep, with a diameter of about 15 inches; the bottom of brass wire, and the handles to the riddle, can either be made of wood or iron.

The riddle, with six holes to the inch, will arrest diamonds of half a carat. The gravel arrested by the six or twenty-hole riddle can be easily washed in a common 26-inch *batea*, made with the central depression, into which the diamond, like gold dust, sinks by its superior specific gravity.

If the prospector understands the use of the batea, he can wash the gravel with great rapidity, otherwise it will be better for him to use the common miner's iron pan.

Poor gravel must first be washed with a stream of water in wooden troughs, something like ground-sluicing. The troughs should be ten feet long, three wide and one deep, with an inclination of half an inch to the foot. Two cross-pieces of wood should be fastened in the trough, one in the middle and the other at the lower end, to arrest the heavier stones.

The fine gravel freed from the larger stone, clay and earthy matter, and found at the upper part of the trough and above the two cross pieces, is then treated the same as the rich gravel by riddling and panning.

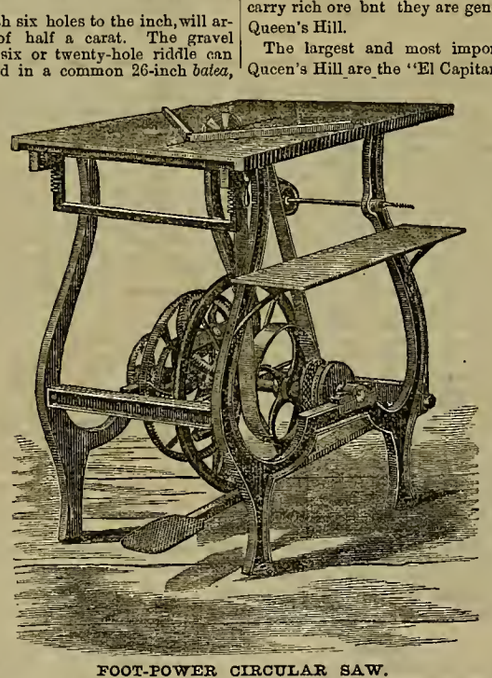
At some future time I will endeavor to describe how diamantifsrous, gravel can be economically treated on a large scale.

Geological Section of Schell Creek.

While our correspondent L. P. Mc. was at Schell Creek, Professor Clayton prepared for him a drawing of the accompanying cut which represents an ideal section of Queen Springs' Hill. It will give a good idea of the position of the strata, and the character of the ore deposits. By far the most extensive mines in the Schell Creek range are "bed veins" generally on lines of contact between limestone below and calcareous shale above. In fact the metal-bearing country rock is a series of alternating beds of shale and limestone. There are also numerous cross-fissures and interlacing veins that carry rich ore but they are generally small in Queen's Hill.

IDEAL SECTION THROUGH QUEEN'S HILL, SCHELL CREEK DISTRICT, NEVADA.

The largest and most important mines on Queen's Hill are the "El Capitan" and "Great Western" at the north end; then as you go south, along the crest of the range, the Citizen, Excelsior, War Horse, Montana, Fairy Bells, and Nutmeg, are the most promising mines. The El Capitan, Excelsior, Citizen, Fairy Belle and Nutmeg mines are the most massive, ranging from 10 to 100 feet thick. Some places in these mines show large bodies of rich ore, but in other portions the mass is barren or low grade with small bunches of good ore. The Great Western mine is a line of interlacing veins in shaly limestone—showing some very rich chloride and sulphuret ore—with occasional bunches of native silver in scales and wires. The metal-bearing country rock—limestone, shale and quartzite—is all Silurian in geological age.



FOOT-POWER CIRCULAR SAW.

BASE BULLION. — The Cerro Gordo mines, Inyo Co., sent up 1,020 bars of bullion on the 9th inst.

Foot-Power Circular Saw.

The accompanying cut is a view of a foot-power circular saw with cross-cut or mitre table and boring apparatus attached, which with a motion of forty steps upon the treadle, gives four thousand and eighty revolutions of the saw per minute, and which is said to turn off with rapidity and ease, work as fine and true as the best planing.

Foot-power circular saws by the old system of counter-shafting and wheels of different sizes usually give from five to seven hundred revolutions of the saw for forty steps upon the treadle, the greatest, ten hundred and forty, and even then it is admitted that the labor rapidly exhausts the workman. By this principle of gearing, all on one shaft, forty steps upon the treadle gives four thousand and eighty revolutions of the saw with very little effort, besides producing work ready to sand paper and varnish or paint without further labor.

This machine is calculated for the million of workers in wood, bone, ivory; small brass workers, emery wheels etc.; for the latter the speed would have to be lessened. The machine will rip or cross-cut with ease, stuff from one and one half inch down.

As will be seen by the comparison of speed given with other machines by the old mode of gearing, four times as much speed is given as has been done heretofore, by which increased speed the work turned off is much superior and needs no finishing but sand-papering, judging from the samples of sawing which we have seen, which were done by this machine. The space occupied on the floor is 2x3¼ feet. The rapidity with which this motion is produced is from the effect of the "vertical multiplier" and "full-levered crank" patents.

One who has bought this machine says: "I know every foot-power circular saw that has been placed before the public, and have used the best of them, and one man can with this, do as much as three, certainly, and I think four, with the best of the old mode."

Another says: "I have used the saw over a month in mitreing pictures frames; it works like a charm. I have turned off as much work as I could with a steam power saw."

They are made of the best material, in a substantial manner, all iron and steel but the tops, which are made of 2¼ inch strips of alternate ash and walnut, jointed and glued together with strong iron battens. The manufacturers charge for main table, with saw and gauge complete, $100; with cross-cut saw or mitre table, $115; with cross-cut saw or mitre table, and boring apparatus, $125. For further information, address, Combined Power Company, No. 23 Dey street, New York.

PATENTS IN GERMANY.—It is the general custom of American inventors to secure patents in their own country first, and to look to foreign countries some time later, when they see whether their inventions have met with success. It is then frequently too late to obtain patents in most foreign countries, particularly in Prussia. After the description is printed in the publications of any Patent Office, or laid before the public in a newspaper, a patent will not be granted. As no tax exists in Prussia, patents are not costly, and no inventor should neglect to secure his invention by letters patent in that country, which contains such an immense population.

RICH veins of gold-bearing quartz are reported as having been discovered in the mountains six miles east of Sonora.

CORRESPONDENCE.

Broad and Narrow-Gauge Railroads.

[Written for the PRESS by LAWRENCE BRADFORD, C. E.]

Ens. PRESS:—The subject of gauge for railroads has been much discussed lately among railroad men and the public generally interested, and the advantage of the narrow-gauge system, claimed and assumed, have been particularly held forth. Statements have been made favorable to this or that gauge by parties evidently prejudiced in favor of one or the other, and each statement presented has endeavored to convince by a liberal display of figured results. It very much depends, however, whether they are the recorded experiments of practical men, which alone are valuable, or the studied arrangements of the financier, best for a particular object.

The question of gauge for a desired and projected railroad would be governed by circumstances of locality, prospective trade and present financial condition, state and position of existing roads and others, particularly applicable to the place designated; and if in the future the question should be brought down to a science, the advantage of one gauge to one place would be as apparent as a different one would be equally well adapted to another. What is narrow and what is broad guage? It may hardly be defined by any stated figure; in theory it may be from 0 upwards till the track is so broad and the cers so heavy that all the locomotive power would have to be expended upon those alone. Practice points to a mean between them and up to present accounts the narrowest is two feet and the broadest seven feet. An example of the former is (and we think the first one built) the Festiniog railway in Wales, started in 1863; and of the latter, the Great Western railway in England, started in 1835.

The gauges of roads between them are numerous, as will be seen by the table annexed, of the

Varieties of Gauges in Use in the U. S.

Gauges. feet.	in.	No.	Average w't of rail per yard	Lowest w't of rail per yard.	Highest w't of rail per yard.
			Pounds.	Pounds.	Pounds.
6	0	28	57½	45	67
5	9	1	64	64	64
5	6	21	56½	50	63
5	2½	1	45	45	45
5	0	77	54	34	65
4	10	35	55	50	60
4	9¾	1	56	56	56
4	9½	8	58	56	64
4	9⅜	1	56	56	56
4	9¼	2	53	50	56
4	9	14	50	45	66
4	8¾	2	56	56	56
4	8½	307	56	40	80
4	8⅛	1	60	60	60
4	8	3	56	56	56
4	6	1	60	56	4
4	5½	1	45	45	45
4	4½	1	56	56	56
4	3½	1	36	36	36
4	3	1	48	40	56
3	6	2	40	40	40
3	0	2	35	30	40
Unknown.		368	Unknown	Unknown.	Unknown.

Giving a total of 887 roads projected, under construction, or built.

A feeling seems to prevail in this part of the country that narrow-gauge railroads of three feet would be desirable and will answer the purpose, for here one disadvantage would not certainly be felt which might be a very important question in most of the Eastern States—that of having a great meny roads already built to a broader gauge and the trade requiring many commodities re-freighted on another road. So far it can not be seen thet any gauge has been adopted at least in this country as the trade warranted or the locality seemed to call for; some roads having the broadest gauge where the trade is scanty.

Mr. Gillespie, in his excellcut work on roads and railroads, shows us that the subject of gauges was discussed years ago as well as now, but not for so narrow ones—4.8½ was then called the nerrow-gauge. He says between this and the broad gauge, just introduced by Mr. Brunel on the Great Westeru Railway, in England, is still going on the fiercest contest of the many which have arisen on the doubtful points in the constructiou of railroads. He also gives the followiug interesting information: "The original railroads were made of the same width as the tram-roads on which run common wagons; their width happened to be four feet eight and a half inches. The new railroeds adopted the same width for the convenience of using upon them the same cars, and thus, width became almost universal. Our Americau roads using at first English engines were necessarily made with an identical gange. Other gauges have also been employed; four feet ten iuches is the New Jersey and the Ohio gauge; five feet is the gauge of Virginia, East Tennessee and the north of Georgia; five feet six inchee ie the gauge of maine, (Atlantic and St. Lawrence road) in Canada (by general law) and in Missouri (by law of 1835); six feet is the gauge of the Erie railroad and its connecting roads."

Of the 887 roads in this country projected, under construction and built, 307 are of the gauge of 4.8½, which is greatly to be accounted for by the reasons given by Mr. Gilleepie.

The history of very narrow gauges may said to have commenced with the Feetiniog railway iu Wales. There had been a horse tram-road since 1833 and it was made into a steam locomotive railway as stated above in 1863. There was, however, on the Continent, geuges six inches or so wider somewhet eerlier.

Mr. Feirlie, who built the Festinoig, recommends for narrow-gauge, three feet, which is called the "Fairlie gauge," and he has intruduced a system of enginee adapted to thie geuge which have been successfully ueed in Russia and England. There are started in this country ten roads of gauge three feet, the Denver and Rio Grand, and the Arkansas Central, but sufficient experience has not or yet been gained to form any opinion with regard to them.

In making the comparison between different gauges we should find the principles that apply particularly to each, and generally to both, and discriminate between etatements that are true under certain and special conditions and what are correct for all caees.

We will sum up the requirements for railways of all gauges and then consider for each requirement the advantages or saving that would accrue from adopting one in preference to another, and it may be assured as a truth that because certain conditions apply to this or that remarkable road and peculiar practicee here carried out, it does not necessarily follow that these are the best, though the road is a succeesful one. The table below of the railroads of the United States, givee a curious example of the difference of opinion or if not, of opinion, most certainly of practice in one of the most important, a costly item of railroad construction, namely the raile; this, with the average weight only, gives a cost of $8,800 per mile more than all the other expenses of construction taken togetber in eome places.

The important item of railroad construction and equipment are land, fencing and clearing; graduation, masonry, stations; contingencies and engineering; rails, bridges, engines, cars, etc., all under the designatiou of superstruction and equipment.

Land, fencing and clearing. The former would vary with the gauge, which will be eeen under our remarks about graduation, the same with clearing; fencing would not vary with the width of gauge.

Graduation.

This is one of the main items of difference in first cost between the narrow and usual gauge, but it is by no means regular; the rougher the topography, *i.e.* the greater the cuts and fills, the less the proportion of work the former has over the latter gauge.

For instance, take a siugle track railway 4.8½ gange, an embankment road hed of 14 feet, and an excavation road bed of 18 feet; these widths are very commonly used, though roads that are building as the minimum of cost adopt as narrow as 12 feet for embankments. Then for a width of embankment for a 3ft. gauge we have

$$\frac{3.0 \times 14}{4.8\frac{1}{4}} = 7 \text{ feet nearly.}$$

This proportion would not apply where there is any great difference in gauge, especially above 4.8½, in fact it might be a little less, as the gauge diminishes, for the weight of superstructure and rolling would be less. No doubt this in practice would be very nearly followed; take an average of embankmente of three feet for one hundred feet in length, this would give for cubic centals, elopes 1½ to 1; for 4.8¼ inches 205¼ cubic yards; 3. 150 cubic yards. about ¾ or 73 per cent. in favor of narrow. gauge. Now let the embankment average 10 ft.; for this we have 4 ft. 8¼ in., which equals 1,074.1 cubic yds.; 3-ft. equals 888.8 cubic yds.; or 83 per cent. in favor of narrow gauge: but a gain over the lighter work of ten per cent.; this is on account of the elope remaining constand but so it followe that the heavier the work the less the advantage the narrow has over the broad gauge in the item of graduation. Similarly it might be shown for excavation, for clearing and land required would be 78 and 87 per cent, nearly the same.

Masonry.

With maeonry the reasoning would be similar to the eartbwork, but the proportion would not diminish near so rapidly for iucreased hight; for the slope which in this case would be the latter, would not make so much difference. A great deal would depend whether piere were required and the plan of abutment adopted. In a locality where extensive but not high bridging was required, this would he an important item in favor of the narrow gauge.

Stations

Would be the eame regardless of gauge if the same freights and passengers were considered, but of course would be smaller if their qnantities were less.

Contingencies and Engineering.

The former varies by so many laws it could not well be compared; perhaps it might be said to hear a proportion to the amount of money appropriated. With the latter it would make but little, if any difference, for the eame ground would have to be gone over and about the same work would have to be done.

(To be continued.)

PROFESSOR PALMIERI recorded a singular observation on the recent remarkable eruption of Mount Vesuvius. The vaporous emanations alone were observed to be charged with positive electricity, while the ashes alone were charged with negative electricity. Hence electric effects resulted from the collision of the clouds of ashes with those of vapor, thunder and lightning being produced as in an ordinary storm.

A Railroad Needed by the Mines.

But few of our readers, says the Gold Hill *News*, have any reel conception of the vast emount of mineral wealth known to exist in thet porton of this State lying along the eastern slope of the Sierra Nevada, and extending, on the same line, through to the southern boundary of California. Owing, in the main, to the advantages of railroad communicatiou, the attention of miners and capitalists bas hitherto been directed to the eastward along the line of the Central Pacific road; although we have here, in the section alluded to, and much more conveniently located in other respects, a vast mining region, inferior in no particular to any in Eastern Nevada or in Utah Territory.

Included within a strip of, say 100 milee in width and 250 loug, north and south, we have a large number of mining camps or towns, in nearly every one of which mining operations are being extensively and profitably carried on, notwithstending the great disadvantages under which they labor by reason of their iselation, or lack of cheap and speedy communication with the business center of the coast. Of these we will mention Pine Grove, Aurora, Bodie, Columbus, Silver Peak, Lida Valley, and Montezuma districts, in this State, and on the eame general line southward, with but a few miles intervening, Benton or Hot Springs, Deep Spring Valley, Waucoba, Kearsarge, and Cerro Gordo in California. In all of these camps there are mines or ledges of silver, gold or galena ores of extraordinary richness, to say nothiug of hundrede of inferior grade that might be worked to fair profit under favorable circumstances. Under present conditions no one of a less assay value than $100 per ton can be profitably worked in any of these districts, and in consequence, hundreds and thousauds of tons of ore, varying from $20 to $100 per ton, assay value, are cast aside as being practically worthless.

We are aseured by parties well acquainted with that country, that the number of ledges to be fonud carrying ore of theee grades, to say nothing of those that are worked yielding away up into the hundreds, are simply incalculable. They believe that almost the ouly condition necessary to make this vast wealth aveilable to the world, would be afforded by a railroad. That is a grand desideratum of the re idents of that region. They well know that it is an essential coudition to the proper development of their country, and, fnrthermore, firmly believe that such a road would ever be a paying investment for its builders. Every ten-mile station for at least 250 miles of the route would be a freight depot, a condition of things not at all improbable when it is understood that a rich mining country at least 100 miles wide for the whole distance, would he tributary to it. In addition to its minerals, this country posseses a large agricultural area, capable of sustaining a large population, which would contribute largely to the triumph of the road.

For a distance of nearly 400 miles from the Central Pacific to the Southern Pacific Railroad route, there is no other practical route across the mountains to reach San Francisco, and any railroad to connect thoee two, running through the chain of valleye along the eastern slope of the Sierra Nevada Mountains, would inevitably command a profitable business and a commanding position in reference to the overland routes, to either one of which it could become a feeder. At the present time at least nine-tenths of all the freighting in the extensive region south of Aurora ie done via. the Southern or Los Angeles route, although that route offers no advantage in point of distance. The freight tonnage of Cerro Gordo aloue is but little less than 500 tone per month, notwithstanding the great expense or drawbacks of 275 miles of wagou traneportation over a very heavy road. This, though the principal, is the business of one district only in a dozen or more. With the impetue that a railroad would give to all the iuterests of the country throughout its length, the present amount of freighting would be of the merest insignificance compared to what it would then be.

An extension of the Virginia and Truckee Railroad of lese than 150 miles, would command the whole of this business, and in various ways make it contribute something to the advantage of our own section of the State. Otherwise we lose all benefit from the trade and freighting business not only of Southeastern California, but all of the southern portion of our own State as well. It is in the power of energetic projectors of the Virginia and Truckee road to control the whole of this, if they commence in time, thus forestalling a branch road which will surely be built north from either the Atlantic and Pacific, or the Southern Pacific overland roads, and which we have good reasou to believe will be commenced as soon as either of them reach the eastern foot of the Sierra Nevada. We mention these things in the hope that our own railroad men, now that they have one important link in the chain complete, will not rest until they give this matter a thorough investigation, and if then deemed advisable, to extend their road in time to head off one from the south. The counties through which the road would pass should, and of couree would, give ample eucouragement and assistance. It is an important project, and one which commends itself to the attention of all interested in the development of the true resources of our young and thriving State. It would be not only vastly beneficial to the section developed by it, but also to this; as bringing all lucrative trade and travel directly into and through our very midst.

Government Aid to Mines.

The *Mining and Commercial Times*, an English journal, has the following article on the above subject which will be found interesting to our readers:

After considering the great interest that European Governments take in their mines, it appears strange, upon turning to America, to find that the United states Government has thus far almost totally neglected theirs. The conservation and development of their great mineral wealth, it appears to us, should he one of the chief objects of the Government of the United States, for the mines of the west have done as much to preserve the financial health of the nation, as the commerce and agriculture of New England, New York, and Pennsylvania, or the valleys of the Mississippi, and the Ohio. When we look at the amount of money that has been spent by the Goveruments of Europe in the improvement of inferior mines, and then recollect that the American Government has done nothing toward the improvement of the greatest mines in the world—mines that are on the brink of ruin for want of assistance from the Goverument, and mines of which the Government actually stands in need—we can only stand and wonder.

Let us contrast for a moment the Comstock lode with the principal mines of Europe, before we consider the subject of expenditure. No mine has ever been worked in the Old World of magnitude equal to, or even approaching that of the Comstock. The Schemnitz mines in the northern part of Hungary, furnish an annual value of all metals not exceeding $1,500,000. The celebrated silver mines at Freiberg, in operation since the commencement of the thirteenth century, yield a silver product of the annual value of about $1,000,000; and in a period of nearly 350 years, have produced an aggregate value not exceeding $120,000,000. The Harz mines, in the district of Clausthal, in the former Kingdom of Hanover, are chiefly argentiferous galena, with copper pyrites, iron pyrites, and grey copper ore, and produce annually a supply of silver worth $600,000, lead, $575,000, copper, $90,000, iron, $125,000, or an aggregate value of $1,400,000. Competent geologists assert that the Comstock, with proper appliaucee for working the mines, will yield $30,000,000 per annum, or in thirty years, $900,000,000. It will thus be seen that the combined yearly product of Schemnitz, Freiberg, and the upper Harz is not much over $4,000,000; while the value of the annual gold and silver product that could be taken from the Comstock, is over seven times that amount.

Let us now see what has been spent on the European mines in money and talent. The Austrian Government began and finished the adit level of Joseph II. The Freiheg tunnel, beginning on a tributary of the river Elba, and extending over eight miles, so as to communicate with all the mines in the upper part of the district, being over eight feet wide and nearly ten feet high, securing a drainage at a depth of 1,600 feet, was begun and finished by the Government of Saxony. In the former Kingdom of Hanover there are several tunnels that were constructed at Government expenee. One of them commenced in 1777, and completed at the beginning of the present century, penetrates the mountains for a distance of six and a half miles, 900 feet beneath the town of Clausthal. The first one of these tunnels was commenced in 1525, and before the end of that century three more were conetructed; and in 1799 another was completed of a length, including gallerics, of nearly eleven miles. In 1871 was commenced the Ernest August tunnel, estimated to require twenty-two years in its completion, but by the improved appliances now nsed in tunuehng, finished in 1864, in twelve years and eleven months. The water in this tunnel has sufficient depth to allow the use of long flat boats for the transportation of the ore.

Thus it appeare that the best engineering talent of Europe bas been taxed for a period of three centnries to provide means of drainage and ventilatiou; and the Governments of Austria, Saxony, and Hanover, have expended millions of money on mines that in the aggregate do not equal a fourth of a single mine in America; and yet the Americau Goverument, knowing all this, and knowiug the value and importance of her mines, has not thus far expended a eingle dollar toward the development of her vast mineral and metallic wealth. And the gold, in dust, and ingot, and bar; and the silver, in brick, and bar, and lump, that might he extracted from the rivers and ravinee and mysterious recesses of that land, if proper aid were given by the Government, uot only towards the construction of tunnels, but also toward the erection of reduction, concentretion, and smelting worke on the most approved plans, would seem to the reader more like the fables of eastern story than solid fact.

THAT man is only truly brave, who fears nothing so much as committing a mean action, and undanntedly fulfils hie duty, whatever the dangers whicb impede the way.

MECHANICAL PROGRESS.

Boiler Explosive Phenomena.

Most nf the violent steam boiler explosions nn record may he referrable tn two nr three classes of phenomena, each of which is fully understnod, and all of which may be easily prevented by simply exercising proper care and attention. Passing over defective or improper construction, which is a prolific source of danger, hut which should be guarded against in the boiler shop, wo will consider only a few causes which are the direct result of either ignorance or carelessness—most often, probably, the former—a fact which shows the necessity of greater care in the educatieu and selection of engineers.

Unequal Expansion.

Many cylindrical hoilers, having the feed water introduced on the bottom, are broken hy the cooling and contraction of tho iron. A difference of temperature of 200 degrees or more may thus occur in the same plate; so that its different portions are subjected to an enormous strain. An explosion may occur from an unequal expansion, without the presence of a single particle of water in the boiler.

In one remarkable case, a man was clearing an empty boiler from scale and sediment, and finding these adhering too firmly to the inner surface of the boiler to he easily removed, conceived the plan of loosening them hy the application of heet. He therefore lighted a fire of pine shavings at either end of one of the principal flues. This caused an irresistible expansion of the flue. The shell 0f tho boiler was not able to resist the enormous force thus developed and a violent explosion was the result. The head of the empty boiler was blown off in the most sadden and violent manner and driven through the wall of the building that contained it. Locomotive wheels sometimes burst with great violeuce, from this same cause of unequal expansion.

Explosions from Repulsion.

A third cause of explosions is found in what we may call "repulsion of the weter." There may he no sign of trouble in the condition of the water in the hoiler. The temperature of the hoiler may not be elevated, at least in any way that subsequent examinatiou would disclose. There may be no indication of weakness in the boiler.

Any of our readers who have seen a drop of water fall upon the smooth surface of heated iron have noticed that it does not touch or wet the metal, but rolls about its surface like a marble on the floor. The little globe of water is surrounded by a thin film of vapor which protects it from the action of the heat, and prevents it from touching the metal or evaporating.

This phenomenon is known as the "spheroidal state" of water. The same state may be produced withiu a steam boiler. Wheu the fires under a certain part of the boiler are espscially intense, they may so violently best the metal above them as to drive away from it in spite of the pressure which forces the water down, that part of the water which is directly above the heated iron. A thin film of vapor is then interposed hetween the metal and the water. The iron, thus separated from the good couductor with which it has been in contact and covered only hy—the comparatively poor conductor—vspor, will rapidly iucrease in temsprature until it hecomes red hot, or perhaps white hot.

All is now ready for an explosion. Lst any force produce contact again betwesn the water aud the iron, and an enormous liberation of steam must follow. This force may be supplied hy the admission of more water into the boiler, or, as in the csse of a locomotive engiue, hy any sudden jolt or violent jar. Whatever the cause, the result is the same. Hot water and red hot iron are brought into sudden contact, and nothiug can withstand the explosive force thus produced. When the water once strikes violeutly, the souudest iron may be hroken and the strongest workmanship he destroyed.

Iu Paterson, New Jersey, an explosion of this character occured in the case of a locomotive engine, just finished. But a moment before the crasb, the safety valves indicated a very moderate pressure. In an instant, s considerable portion of a three story work shop was hlown down; four meu were instantly killed, and a nnmber of others were injured.

Overhealing.

The last causes of explosions which we will consider are those due to what is called overheating the water.

Water hy long hoiling loses the air which it contains. The result of this deprivation is, little hy little, to raise its boiling point. A Freuch experimentor, Mr. Denny, found that hy careful heatiug he could raise water to the temperatnre of 275° Fahrenheit hefore it vaporized. By his careful treatment, the water had heen freed from the air it contained. In consequence, its particles adhered more closely to each other than those of water iu its ordiuary condition, and it resisted vaporizstion. But when the heat grew so great as to overcome this cohesive force, the water vaporized with a sudden explosion. An npen pan of boiling water which had been thus freed of its air has exploded with fatal results.

As one class of explosions already described have occurred without any water in the boiler, so the present explosions may occur without any boiler. Either water or metal alone may thus fatally explode npon the application of heat.

In the cases now under consideration, the water, gradually freed from its contained air by heat long maintained at or near its boiling point, trembles just on the brink of a sudden explosion. When more heat is added, or when the pressure is reduced hy starting the engines, a sudden vaporization will occur, and nearly the whole mass of water will flash at once into steam. The resulting explosion is often of the most terrific character.

It is pleasant to know that snch accidents may he prevented hy the use safety plugs, so constructed as to he broken hy a very low pressure. The gradual escape of the overheated water into the furnace is thus provided for; and the temperature of the fire will be reduced without any dangerous agitation of the water.

It is of importance to remember that in no case will any contrivance, or patent, or iuvention take the place of hnman intelligence and watchfulness in preventing accidents. No patent has yet been discovered which will take the place of the human brain. An engineer who has his wits about him will prevent a had boiler from hursting, when a careless one will destroy the strougest hoiler in use. And when the public, through the courts, insist that hoilers shall *not* burst, ample means will he found to prevent boilers from bursting.—*Condensed from an Eastern Exchange.*

An Improved Mine Ventilator.

A correspondent ef the *Iron World* describes what he claims to be an improved device for venlilating mines, and which is in use in several of the ironstone mines, as follows: It consists of two sheet iron drums, about 8 feet in diameter, and fully 16 feet in length. Each drum is monnted on a shaft, but eccentrically, so that as it revolves its longest diameter just clears by 3-16ths of an inch a cylindrical cssing of 6 feet radius, in which it is placed—the sides of the cssing being closed, hut each casing is open at the top. A carved shutter at one side of the opening makes half a revolntion to the drum's whole one, so that (touching the drum all but about 3-16ths of an inch) it prevents air commuuication hetween the interior of the casing and the epace surronnding it. The air from the mine is led to the ventilator hy the air passage from the shaft, from which there is a communicstion with the space surrounding the casiugs. The action of the drums as they revolve in opposite directions to each other draws the air into these casiugs, sud finally expele it at the openings—the curved surface of the sbutter preventing any leskege of the air hack into the cylindricel casings. The operation appeared to us to he practically as effective as theoretically it appears to he without fault. Standing above the top of the cylinder, we could see the foul, smoky sir expelled at every revolutiou of the drums. But, of course, we leave to practicsl men the merits of the invention. That Messrs. Pease's manager has faith in it was evident. The appsratus, he informed us, hsd been in operatiou fully two months, and we were sssured that during that time it had done its work hesutifully. The convincing fact was thus statcd: Although worked under disadvantages, wheu compsred with the old furnace system of ventilation, Mr. Cooke's machine was then ventilating fully three-fourths of the mine; for seven dsys snd nights per week, at a cost for the week of from 4 to 5 tons of coke and coal; as against a small furnace still in use ventilating the other quarter, with a consumption of nearly 30 tons of coal—the distance, etc., heing such as should bave told in favor of the furnace.

Steamers Without Smokestacks.

It is reported that two Austrian marine officers and a marine engineer have succeeded, hy united experiments, in finding a method of conveying away nnder water the smoke of the furnace of the steam engine, in plaee of passing it upwsrd through a funnel into the air. They mske use of double ventilators, which compress the smoke and force it overboard. For propelling these ventilators they employ, it is ssid, "according to circumstances, either water-power—that is the pressure of the water between the surface of the water and the plsce where the spparatus is fixed," or for smsller vessels stesm-power. The advantages of this invention are the greater security of ships of war, ss in armor-plated ships the only vulnerahle part, the funnel, will he takeu away. Other advantages will be the saving of space now occupied hy the passsge of the funnel through the deck as well as security sgsinst dsnger from fire, complete regulation of the draught, and in consequeuce of that the application of a method for consuming the smoke, thereby effecting a saving of fuel, and finally hetter ventilation of the hoiler. For suhmarine and torpedo ships, and monitors, this discovery will he of great value, as these last will he rendered quite invulnerahle. The trials that have heen made have, it is allegcd, resulted in a complete success, even to the smallest details.

New Metallic Alloy for Cooking Utensils. It is well knewu that all alloys containing copper, even in minute proportions, are readily acted on hy acids, which makes them dangerous when nsed for household ntensils. M. Helouis has proposed en alloy, under the uame of platinum bronze, which is entirely inoxydizahle. It is a nickel alloy, prepared from nickel made thoroughly pure by various processes and maceration in concentrated nitric acid. The proportions employed are nickel, 100, tin, 10, and plstinum 1—the two latter metals being added to the fused nickel in the proportion of 4 of tin to 1 of platinum, and the remmiaing 6 parts of tin added subsequently. For hells end sonorous articles, the proportions are slightly varied, viz., nickel, 100, tin, 20, silver 2, and platinum 1.

Metallic Stain for Wood.—Soaking the wood in a weak solution of nitrate of silver, and then exposing it to the light, will produce an intense black color. Another way is to boil some chips of logwood in water for about a quarter of an hour. Then wash the piece of wood with it three or four times, allowing it to dry after each washing. Lestly, wash the wood by meaus of a common painting hrush, with a mixture prepered as follows:—Put one ounce of steel or iron filings into two ounces of viuegar, keep the vial near the fire so as to he gently heated for about two hours, then decaut the vinegar, and keep it for use.

Germany and the French Iron Wores.—Since the anuexation of Alsace and Lorraine to Germany, not a single steel work will be left in the east of France. These various works possess 200 hlast furnaces, aud 160 puddling furnaces, and produce about 140,000 tons of iron of all kinds per sunum. One of the most important of the iron-producing districts of France was the northesstern, which include the country traversed by the rivers Moselle and Meurthe, and which hy far the largest portion hss beeu transferred to Germany.

A Collosal Bell to Ring in Peace.—Of the 5,000 French guns taken in the war 22 huge specimens have been set apart for a monster bell to he cast for the cathedral at Cologne. The bell is to weigh 500 cwt., and will he 70 feet high, with a diameter of 13 feet at its base. With the exception of the Ivan Veliki at Moscow, which is a gong rather thsn s hell, having no clapper, and being struck with a hammer, it will be the laagest on the Contiuent, snd will exceed even Big Ben. The casting is to he procesded with, shortly, in the immediate vicinity of the cathedral spire.

SCIENTIFIC PROGRESS.

Illustrations of Instinct.

Dr. Le Baron, the accomplished State Entomologist of Illinois, has recently published his second report upou the noxious insects of the State, a document full of interesting and important facts. The closing paragraphs of the Doctor's first report present so striking a description of what is called "instinct" iu insects, that we copy therefrom as follows:

I have mentioned the wonderful instinct of the *Coccus* of the Pine, which prompts the female insects to improve the short period of their active existence, to migrate outwards upon the terminal foliage, where they and the generation succeeding them will find themselves in the midst of the greenest and freshest forage, whilst the males which are to acquire wings, and the consequent power of locomotion, fix themselves indifferently upon the first vacant spsce that offers, thus indicating s kind of prophetic vision utterly heyond any resch of intelligeuce which we can reasonably attribute to heings so low in the scsle of creation. The student of eutomology is continuslly meeting with instances of this kind, which arrest his stention and excite his wonder, and which bsffle his utmost ingenuity to explain.

It is the common instinct of insects which are wood-borers in their larva state, hut which have no such power in their subsequent stages, to gnaw their way to the surface of the tree before they stop feeding, so thst they can emerge without obstruction after they shall have completed their transformstions.

The Plum-gouger *(Anthronomus prunicida)*, which in its larval period occupies not the flesh but the kernel of the plum, when it has completed its growth and is resdy to trsnsform in the kernel, takes the precaution to gnaw a rouud hole in the shell, through which it may subsequently emerge. If it did not do so it would he fatally imprisoned, in its future beetle stste, within the mature and hardened shell, an event which the Gouger carefully guards against, though the horticulturist might regard it as a consummation devoutly to he wished.

The Disippus-butterfly *(Nymphalis disippus,)* lives in its caterpillsr state, on differeut kinds of willow. In this stste it passes the winter, inclosed in a willow leaf, rolled into a cylindrical case. But as the leaf would fall like the rest, when touched hy frost, or he hlown away hy the wind, the insect fastens its footstalk with silken threads to the hranch on which it grows, and thus securely rides through the frosts and storms of winter.

The larvæ of a beautiful East Indian butterfly, the *Thecla Isocrates*, live in companies of a half dozen or more, in the fruit of the pomegranate, and there also pass the pupa state. But before changing to chrysalids, each larva cuts a round hole in the rind, through which the future hutterfly, which itself has no teeth, but only a slender flexible proboscis, may he able to escape. and as the worm-eaten fruit would be likely to fall prematurely to the ground the larvæ crawl out and make the stem fast to the tree with their web, and then returu sud go through their transformations.

Now, are we to understand that these insects sre really endowed with a prophetic vision? Do they know what will he their own condition the next month or next year, or what will be the future necessities of their offspring which perhaps are yet unborne? We are hardly prepared to attribute to them such superhuman intelligence. If they do not know, then what prompts them to take such wise and far-reaching precautions? Who will answer? I ask the question, but I shall hear no response, for there is no earthly intelligence which can solve the mystery.

I can conceive of the formation of a planet, by the condensation of nebulous matter, in obedience to the law of gravitation. I csn form some idea, however unsatisfactory, of the development of organic hodies hy the operatiou of physical laws, responsive to the impressions of surrounding circumstances. But that an insect which wes horn yesterday, and which will die to-morrow, can, without the invocation of a wisdom superior to her own, adopt a systematic course of conduct heving for its object the safety and welfare of her future progeny, which will not spring into active existence till long after she herself shall have perished,—this, it passes the hounds of my imagination to conceive.

It is said that Galen wss converted from atheism by the contemplatiou of the human skeleton; but I confess that nothing has so strongly impressed upon my own mind the presence of an all-pervading intelligence in nsture, as the wonderful prophetic instincts of insects.

Combustibility of Iron.

Prof. Magnus, of Berlin, has recently devised a beautiful experiment to demonstrate the combustibility of iron. He takes a straight bar magnet of considersble power, and sprinkles iron filings on one of its poles. These filings, of course, arranged themselves in accordance with the lines of magnetic force, and however closely they may appear to be packed, of course no two of the metallic filaments sre psrallel, snd consequently a certain portion of air is enclosed as in a metallic sponge. The flame of a spirit lamp or gss burner readily ignites the finely divided psrticlss of iron, and it continues to hurn most brilliantly for a considerable time.

If the experimenter stands on a little elevation, and waves the maguet to and fro whilst burning, a most magnificeut rain of fire is produced. The experiment was first performed in Berlin hefore the Empsror of Germany and his court, and received much admiration.

The late Professor Faradsy used to show the extreme combustibilty of iron very strikingly. One of his experiments was to dust fine iron filings through a large copper ring covered with lamp cotton, soaked in alcohol, and set fire to. This produced a very large flame, though by daylight not very visible. The effect produced when the filings fell into it wss very fine; the whole flsme hecame intensely luminous as each particle of iron hurnt with those brilliant scintillstions which are characteristic of its combustion.

As a second experiment, the lecturer would frequently mix some fine filings with gunpowder, snd dust the mixture through this flame, or into a dish of hurning slcohol. The iron filings burnt at once, ss before, hut the gunpowder psssed through nnconsumed, and remaiued quietly in the dish until the alcohol was nearly consumed, and the flsme csme in contact with it, when it flashed off with the charscteristic pnff of smoke, but no scintillations, showing that it was the powder, and not the iron, which hsd passed through the flsme unconsumed. The influence with which the teo minute size of the psrticles, by which a large surface is exposed to the air, has on the combustibility of a snhstance is well illustrated in pyromorphic iron. If the oxide of iron he reduced, hy passing over it a current of hydrogen, the heat employed being less thsn thst of boiling mercury, the metsllic iron is left in such a fine state of subdivision as to take fire spontaneously wheu allowed to fall through the air.

The Influence of Specific Gravity on the Melting Point of Substances.—F. Mohr proves by experiment that substsncee, the specific gravity of which decreases after fusion, have a lowcr melting-point, thsn the original subhstance. The reversed case csnnnot well he proved hy experiment, as snch substances have to pass first through the temperatnre st which they hecome more dense, and they therefore can have bnt one melting point, thst is the higher one. The old theory that onr silicstes are formed hy cooling of flnxes he ahandons for the reason that natural feldspar has a specific gravity of 2.57 to 2.6 while the same material after it has undergone the melting process has a specific gravity, of 2.3 to 2.35. But other reasons led to the same point, as for instance the fact of the occurrence of feldspar crystals in the trunk of an antediluvian tree, or feldspar crystals fastened to clear calkspar crystals, etc.

OUR MINING SHAREHOLDERS' DIRECTORY.

[Compiled Weekly from Advertisements in Mining and Scientific Press and other S. F. Journals.]

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Name of Co.	Location.	Secretary.	S.F.Office.	Assm't.	Levied.	Delinq't.	Sale.
Adams Hill C. M. Co.	Eureka Dist.	W. W. Traylor.	419 Cal. St.	25.	Aug. 9.	Sept.12.	Oct. 2.
Alaska Con. M. Co.	Lyon Co., Nev.	G. R. Spinney.	320 Cal. St.	25.	Sept. 3.	Oct. 7.	Oct. 28.
American Flag M. Co.	Ely District.	Geo. R. Spinney,	320 Cal. St.	$2 00.	Sept. 2.	Oct. 8.	Nov. 1.
Arizona & Utah M. Co.	Washoe	C. H. Fish.	419 Cal. St.	$1 00.	Aug. 14.	Sept 17.	Oct. 7.
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Baltimore American.	Gold Hill, Nev.	J. L. Kinz.	411 Cal. St.	$1 00.	July 13.	Sept. 2.	Sept. 20.
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BECKWITH M. CO.	Ely District.	Wm. H. Watson.	302 Mont'g St.	20.	Aug. 19.	Sept. 23.	Oct. 23*
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Cook & Gever M. Co.	Storey Co. Nev.	C. H. Fish.	419 Cal. St.	50.	Sept. 4.	Oct. 8.	Oct. 28.
COTTONWOOD CR'K M.CO.	California.	Jos. L. Kinz.	411 Cal. St.	$1 00.	Aug. 19.	Sept. 28.	Oct. 15*
Daney M. Co.	Lyon Co., Nev.	Geo. R. Spinney.	320 Cal. St.	$1 00.	Aug 29.	Oct. 2.	Oct. 23.
Empire M. Co.	Grass Valley.	S. Pinkham.	401 Cal. St.	$10.	July 22.	Sept. 7.	Sept. 27
Empire M. Co.	Grass Valley.	S. Pinkham.	401 Cal. St.	$5 00.	Sept. 6.	Oct. 12.	Oct. 29.
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Francis M. Co.	Mariposa Co.	T. F. Cronise.	409 Cal. St.	75.	Aug. 20.	Sept. 20.	Oct. 15.
Gillis G. M. Co.	Tuolumne Co.,	Daniel Buck.	331 Mont'gry St.	10.	July 20.	Aug. 19.	Sept. 20.
Globe M. Co.	Gold Hill.	W. E. Dean.	419 Cal. St.	$1 00.	Sept. 4.	Oct. 7.	Oct. 25.
Gould & Curry S. M.Co,	Washoe.	A. K. Durbrow.	Merchants' Ex.	$15	Aug. 8.	Sept. 12.	Oct. 2.
Greenhorn G. M. Co.	Grass Valley.	J. F. Lightner.	438 Cal. St.	$1 50	Aug. 8.	Sept. 11.	Sept. 30.
Hale & Norcross S. M. Co.	Washoe.	J. F. Lightner.	438 Cal. St.	$5 00.	Aug. 22.	Sept. 26.	Oct. 16.
Heronles S. M. Co.	Nye Co., Nev.	J. T. Milliken.	608 Merchant St.	20.	Sept. 3.	Oct. 10.	Oct. 31.
Hermes M. Co.	Ely Dist.	B. B. Minor.	411½ Cal St.	$1 00.	July 13.	Aug. 19.	Sep .14.
Hermiguera M. Co.	Lower Cal.	J. H. Applegate.	729 Mont'gry St.	$3 00.	Sept 4.	Oct. 5.	Oct. 23.
Huhn & Hunt M. Co.	Ely District.	L. Kemple.	Merchants' Ex.	$1 00.	Aug. 30.	Oct. 4.	Oct. 24.
Ingmar S. M. Co.	Ely Dist.	C. S. Neal.	419 Cal. St.	50.	Aug. 12.	Sept.18.	Oct. 10.
Ivanhoe S. M. Co.	Ely Dist.	Daniel Buck.	331 Mont. St.	50.	Aug 10.	Sept. 10.	Oct. 8.
KINCAID FLAT M. CO.	Tuolumne Co.	K. H. Cornell.	320 Clay St.	$3 00.	July 17.	Aug. 23.	Sept. 14.*
Kinston M. Co.	Ely District.	L. Kinkaid.	Merch. Ex.	25.	Aug. 26.	Oct. 1.	Oct. 21.
Lane & Kartz M. Co.	Brit. Columbia.	B. B. Minor.	411½ Cal. St.	$5 00.	July 23.	Aug. 26.	Sept. 14.
Lemon M. & M. Co.	Eureka Dist.	I. T. Milliklin.	608 Merchant.	$1 50.	Aug. 14.	Sept. 17.	Oct. 21.
Lyons & Wheeler M. Co.	Arizona.	T. W. Colburn.	409 Cal. St.	10.	Sept. 2.	Oct. 4.	Oct 21.
MARCELINA S. M. CO.	Eureka Dist.	Chas. E. Elliot	419 Cal. St.	30.	July 24.	Sept. 9.	Sept. 30*
Minnesota G. & S. M. Co.	Idaho.	Wm. Wallis.	419 Cal. St.	50.	Aug. 20.	Sept. 23.	Oct 14.
Monroe Belmont M. Co.	Nye Co., Nev.	B. B. Minor.	411½ Cal. St.	$1 00.	Aug. 20.	Sept. 14.	Sept. 14.
MORNING STAR M. CO.	Alpine Co., Cal.	O. H. Bogart.	Merchants' Ex.	$1 00.	July 12.	Aug. 20.	Sept. 14.
MINA RICA M. CO.	Placer Co.	Geo. R. Spinney.	320 Cal. St.	20.	Aug. 6.	Sept. 10.	Sept. 30.*
MT. JEFFERSON M. CO.	Tuolumne Co.	W. O. Clark.	418 Cal. St.	10.	July 25.	Aug. 26.	Sept 16.*
National M. Co.	Nye Co., Nev.	B. B. Minor.	411½ Cal. St.	50.	July 4.	Aug. 9.	Sept. 14.
National M. Co.	Nye Co., Nev.	B. B. Minor.	411½ Cal. St.	50.	Aug. 21.	Sept. 23.	Oct. 14.
Nevada L. and M. Co.	Elko Co., Nev.	Wm. H. Watson.	302 Montgomery.	8.	July 18.	Sept. 10.	Sept. 30
Newton Booth Con. M. Co.	Ely Dist.	R. F. Scott.	314 Cal. St.	25.	Sept. 5.	Oct. 7.	Nov. 4.
NORMAN G. M. CO.	Amador Co.	Cal. Wm. H. Watson.	302 Montgomery.	5.	June 27.	Aug. 1.	Sept. 21.
North Gold Mine.	Idaho.	C. F. Balcom.	426 Mont'gry St.	50.	Aug. 22.	Sept. 23.	Oct. 19.
O. H. Treasure M.] Co.	White Pine.	D. A. Jennings.	401 Cal. St.	$1 50.	Aug. 9.	Sept. 16.	Oct. 8.
Pacific Borax Co.	Esmeralda Co.	E. Leuba.	507 Mont'gr St.	20	Sept. 5.	Oct. 7.	Oct. 31.
Page & Panaca S. M. Co.	Ely Dist.	L. Kaplan.	Merchants' Ex.	$5 00.	Aug. 14.	Sept. 19.	Oct. 11.
Pennsylvania.	Ely District.	Daniel Buck.	331 Mont'gry.	$1 00.	Aug. 12.	Sept. 9	Oct. 5.
Pioche W. Ex. Co.	White Pine.	T. W. Colburn.	419 Cal. St.	30.	July 12.	Aug. 22.	Sept. 16.
Pride of Mountain M. Co.	Winnemucca.	T. W. Colburn.	419 Cal. St.	6.	Aug. 26.	Sept. 30.	Oct. 21.
QUAIL HILL M. & W. Co.	Calaveras Co.	T. F. Cronise.	409 Cal. St.	$5 00.	Aug. 22.	Oct. 2.	Oct. 24.
Red Cloud S. M. Co.	Ely District.	E. F. Clark.	321 Mont'gry St.	25.	Aug. 24.	Sept. 24.	Oct. 16.*
Reno Star M. Co.	Lake District.	Wm. Willis.	419 Cal. St.	$1 00.	Aug. 10.	Sept. 13.	Oct 4.
SILVER SPROUT M. Co.	Kearsarge Dist.	T. B. Wingard.	318 Cal St.	50.	Aug. 26.	Oct. 8.	Nov. 8.*
Silver West Con. M. Co.	Eureka District.	F. R. Bunker.	Montg'ry Block.	50.	Aug. 26.	Oct. 5.	Oct. 30.
South Chariot M. Co.	Idaho.	J. L. Kluz.	411 Cal. St.	50.	Sept. 5.	Oct. 12.	Nov. 4.
SPRING MT. TUNNEL.	Ely Dist., Nev.	J. M. Buffington.	419 Cal. St.	50.	July 2.	July 16	Sept. 30.*
Sutro M. Co.	Calaveras Co, Cal.	T. B. Wingard.	318 Cal. St.	$1 00.	Sept. 4.	Oct. 7.	Oct 28.
Talmah M. Co.	Humboldt, Nev.	Geo. A. Hill.	18 Mont'gry St.	$3 00.	Aug. 26.	Sept. 24.	Oct. 15.
Tecumsch G. S. & M. Co.	Calaveras Co.	F. J. Hermann.	634 Wash'n St.	15.	Aug. 9.	Sept. 12.	Oct. 1.
TELLURIUM G. & S. M. CO.	Amador Co., Cal.	Wm. H. Soery.	Cr. Clay & Kirny.	$1 00.	Sept. 3.	Oct. 5.	Oct. 26*
Tehama Cons.	Schell Creek.	W. W. Stinson.	414 Cal. St.	$2.00.	Aug. 2.	Oct. 1.	Oct. 19.
Unions S. M. Co.	Virginia, Nev.	B. M. Gunn.	Merchants' Ex.	50.	Aug. 7.	Sept. 10.	Sept. 30.
VICTORIA & IMP. M. CO.	Utah T.	Wm. H. Watson.	302 Mont'gry St.	10.	Aug. 14.	Sept. 18.	Oct. 12*
WINNEMUCCA CHIEF.	Nevada.	T. F. Cronise.	409 Cal. St.	15.	June 19.	July 30	Sept. 16.*
Yule Gravel M. Co.	Placer Co. Cal.	W. H. Watson.	302 Mont'gry St.	25.	Aug. 3.	Sept. 5.	Sept. 15.

MEETINGS TO BE HELD.

Nams of Co.	Location.	Secretary.	Office in S. F.	An'l or Sp'l.	Date.
Cook & Geyer.	Storey Co., Nev.	C. H. Fish.	419 Cal. St.	Annual.	Sept. 23.
Cosala S. M. Co.	Mexico.	Chas. Baum.	610 Battery St.	Annual.	Sept. 16.
Crown Point Ravine M. Co.		B. M. Gunn.	Merchants' Ex.	Annual.	Sept. 23.
"420" M. Co.		H. O. Howard.	523 Montg'ry St.	Special.	Oct. 7.
Gen. Lee S. M. Co.	White Pine.	C. F. Schultze.	426 Montg'ry St.	Annual.	Sept. 17.
Golden Chariot G. M. Co.	Idaho.	S. W. Collins.	306 Market St.	Annual.	Sept. 28.*
McMahon S. M. Co.	Schell Creek.	Geo. R. Spinney.	320 Cal. St.	Annual.	Sept. 16.
Segregated Belcher M. Co.	Washoe.	E. F. Stone.	Meerchants' Ex.	Annual.	Oct. 1.

LATEST DIVIDENDS—Within Three Months.

Name of Co.	Location.	Secretary.	Office in S. F.	Amount.	Payable.
Belcher M. Co.	Washoe.	H. O. Kibbe.	419 California St.	$3.00	Sept. 10.
Black Diamond Coal Co.	California.			½ per cent,	June 28.
Crown Point G. & S. M. Co.	Washoe.	C. E. Elliot.	419 California St.	$3 00.	July 5.
Eastport Coos Bay Coal.	Oregon.	I. L. Fool.	Merchants' Ex.	$6 00.	Aug. 12.
Keystone Quartz M. Co.	California.	L. Yesaria.		50.	July 10.
Mahogany G. & S. M. Co.	Idaho.	T. J. Owens.	402 Mont'gry, St.	$1 50.	Aug. 7.
Meadow Valley M. Co.	Ely Dist., Nev.	T. W. Colburn.	419 California St.	$1 00.	June 20.
Raymond & Ely M. Co.	Ely Dist., Nev.	A. J. Moulder.	419 California St.	$7 00.	Sept. 10.
Pioche S. M. Co.	Ely Dist., Nev.	C. E. Elliot.	419 California St.	$1 00.	Aug. 10.

—* Advertised in this journal.

Stock Sales for Week ending Sept. 14—S. F. Stock & Ex. Board.

[Entered according to Act of Congress, in the Office of the Librarian of Congress, Washington, D. C., 1872.]

NAMES OF CO'S.	Fass't.	Shs. in ft.	FRIDAY. Shs	FRIDAY. Prices.	SATURDAY. Shs	SATURDAY. Prices.	MONDAY. Shs	MONDAY. Prices.	TUESDAY. Shs	TUESDAY. Prices.	WEDNESD'Y Shs	WEDNESD'Y Prices.	THURSDAY. Shs	THURSDAY. Prices.	Tot'l Sh's Sold.	Ass't.	Assess.	Decim
Adams Hill	300	20	50	1⅞							50	2	70	1½@ 2	170	1	85	1½
Alpha	6400	8					65	37 @8½	20	40	50	39			95	38	62	
Alps	800	37½	1015	4¾@4¾	100	4¾	125	4¾@ 5	365	5	95	4¾@ 5	440	5 @ 6¾	214	4	43	1½
Am. Flag	2800	15	240	16¾@17	110	16¾@17	125	15½@16½	455	16 @17	280	16½			1210	16	62	
Ariz & Utah	1900	19½	100	90	300	90c	120	90c	100	90c	100	90c	100	75 @80	1420		88	10
Belcher	1010	10	60	112 @113	155	112 @113	490	109 @115	423	106 @109	360	103 @106	395	97½@110	1845	117	95	12
Baltimore	1200	20							430	2½@ 2¾	265	2¾	55	2¾	750	2	66	
Bait'er Am	1200	20			100	2¾					400	2			500	2	55	
Bowery	1000	30	100	2¾	60	2½@ 3¼	260	3¼@ 3¾	755	3½@ 4	440	2 @ 2½	25	2	1640	2	70	½
Bacon																		
Buckeye							100	2¾			15	2¾	100	2½	215	2	76	
Best&Bel'r	224	100																
Belmont			100	6¾	50	6½	200	6½	100	6¾	300	6¾@ 6¾			750	6	45	
Chollar	800	10	205	61½@69	29	63 @66	430	61 @68	115	63 @71	360	63 @70	115	62½@65	1515	66	9	4
Caledonia	5000	4	160	41 @43	585	38½@42	395	36 @38	1655	32½@36	1420	36 @40	1280	35 @9	5445	38	25	4
Cs Virginia	1160	20⅜	155	29 @30	305	31½@34	630	32 @35	735	34 @36	775	25 @30	90	.8 @29	2695	31	20	1
Confidence	170	13½					50	85			10	9	10	8½	155	8	62	
Crown Pt.	60	166⅔	75	122 @125	175	125 @130	200	135 @ 142	160	140 @145	205	137 @139	190	121 @126	1005	130	77	1
Central	70	357					140	10 @10½	50	10					190	10	16	
Calaveras	3200	6¾																
Condor			650	3¾@ 3½	600	3¾@ 3½	400	2⅞@ 3¼	495	2¾@ 3	425	2¾@ 2⅞	650	2 @ 2½	3225	2	95	
Chapman			150	1½@1⅝			1250	1½@ 1⅝	1050	1⅝	450	1⅝	1050	1½@1¾	3950	1	52	½
Chr'ton Hill	1000	30	690	8¾@ 9⅜	260	9	1070	9 @ 9¾	820	8¾@ 9¾	1575	8¾@ 9¾	530	8¾@ 9¾	4945	9	36	⅜
Daney	1000	12			50	1⅜					85	1¾	100	1¾	235	1	31	
Eureka Co.	1000	30	100	19⅞@20	240	21 @22¼	135	21½@22	560	22 @22½	310	21¾@22	395	20½@21	1775	21	36	1
Eureka	1650	12	20	15							10	15	10	14	40	14	66	
Exchequ'r	400	20			20	15			20	15			55	15 @16	95	15	30	
Kohipse	70	357			66	11							150	10	210	10	50	
Empire M.	75	16	110	8 @ 8½	675	8¾	940	7¾@ 8⅝	3380	8 @ 8⅝	132	7¾@ 7¾	615	7½@ 7½	3452	7	94	1
Excelsior	4500	2⅝	800	12½@13¼	500	12½@13¼			1100	10 @11	155	12			2950	12	03	
Gould & C	1200	4	45	145 @147	12	150 @155	35	170 @190			25	165 @170	25	163 @170	352	163	75	2½
Golden C.	750	14⅜	10	10½			50	10 @10½					10	11½	80	10	35	
Globe	1000	12½							100	1			5	1	105	1	5	
On.G.H.Q.		40							50	5					50	5		
Hale & Nor	400	4	25	74	10	74	114	74 @78½	270	80 @83	85	80 @85	60	74 @77	664	77	02	3
H & Hunt	3600	8⅝	66	5½@ 5⅝	700	5½@ 5¾	455	5⅞@ 6¼	1375	5⅞@ 6¼	425	5⅞@ 6	400	5¼@ 5¾	4015	5	76	
Ida Elmore	1300	17½	20	13 @13½	100	13½			10	12½@14	290	14	100	14 @15	520	12	81	½
Imperial	184	643⅜	525	9 @ 9½	505	8¾@ 8¾	615	7¾@ 8½	360	8¾	640	8¾@ 8½	540	8¾@ 9	3215	8	65	½
Ingmar	1000	40	180	1⅜		1⅜	325	1½	160	1½	250	1⅜@ 1½	250	1¾	1210	1	4	¾
Independ't	2000	15																
Julia	900	7	200	5⅝	240	5½@ 5⅝	220	5½@ 6¼	1360	5¾@ 6	110	5½	80	5½	2030	6	65	⅛
Justice	85	21	70	11		85 11		20 11¾		85 11½@12		10 11½		10 11½	595	11	25	½
Kentuck	1800	14																
Knicker'r	1200	20	105	6⅞@ 7	190	6⅝@ 6⅞	110	6¾@ 7	130	6⅝	2101	6½@ 6¾	95	6½	2731	6	72	½
Mammoth	1800	20	200	½							50	½			250		5	
Meadow V		42⅛	1545	27½@28¾	2326	28½@30	3390	19¾@ 20	2730	20½@22	3155	23 @24	1010	21¾@23¾	15255	23	97	7⅛
Mahogany	720	13⅞	60	10¾@11	205	11	290	10½@11	160	10¾@11			115	10 @11	830	10	75	
Ophir	1400	12	715	51½@57½	515	63 @68	920	65 @71	410	72 @77	850	50 @70	1022	50 @60⅜	4437	62	81	⅜
O. H. Treas	800	26⅜	400	4½	368	4½@ 5	60	60	50	6			310	5 @ 5⅝	1215	5	50	1
Ovman	120	10			80	65 @69	270	65½@62½	45	61 @64	130	60 @62½	260	60 @63	75	62	65	
Occidental	800	12½			500	3									50	3		
Pioche	1000	20	1540	23¾@25	739	23 @24½	415	19½@20½	955	21 @22	290	23 @21½	655	23½@24½	461	22	85	½
Page & Pan.	2400	16⅞	635	2½@ 2¾	865	3 @ 3½	480	3 @ 3½	620	2¾@ 3	125	2⅝@ 2¾	935	2½@ 2⅝	3560	2	78	⅜
Pea Vine			200	1			520	1 @ 1⅛	100	1	160	1	100	90c	1120	1	01	⅜
Phoenix	4000	7¼	200	4					400	4 @ 4¼	155	4¼@ 4⅜	500	4¼@ 4⅜	2020	4	11	¼
Ray & Ely	800	20	390	17⅝@18	205	17⅝@17⅞	10	17@17½	45	17@17½	245	17¾@17¾	175	17@17¾	1068	17	3	
Savage	1000	30	170	11¾@11⅞	170	11¾@11⅞	230	11⅝@12	375	12⅞@13	985	12⅝@13⅛	380	12⅝@13	2.10	12	48	9
Sg.Belcher	160	40			65	6 @6⅛	165	81 @81½	50	76 @80	125	74 @77	80	70 @72⅜	490	78	66	
Sierra Nev	3000	7⅜	45	13½@14	130	13½@13¾	170	14¾@15⅛	290	15¾@15⅞	400	15 @15⅝	535	14½@16	1462	14	93	2
Succor	500	3			20	4¼			50	4			25		95	4	75	
Silver Hill	1800	12⅜	20	9½	260	7 @ 7¼	150	6½@ 7			100	7 @ 7¼	165	7½@ 7¾	800	6	42	⅛
St. Patrick	660	30⅝																
S. Chariot	20	250			100	1⅝									100	1	75	
Trench	5000	10													100	10		
Wash&Or'l	200	150	360	4½	280	4½@ 4⅝	1350	4¾@ 4⅞	500	4½@ 4⅝	400	4¾@ 4⅝	175	4½	3365	4	6	
Woodville	1400	20	280	3⅝	390	3⅝@ 3¾	200	3⅝	300	3½	40	3¾@ 3¾	200	3¾	1770	2	40	
Yel Jacket	1200	25			20	115 @116	90	115 @118	15	116	80	111 @115	40	112½	245	110	85	
Yule Grav.	400	25																

Notes.—| Nearly. ¿Over.

S. F. Stock and Exchange Board.

Thursday, September 12th, 1872.

Ths sales at the Board for ths week ending on ths 4th inst. amountsd to $2,276,000. Ths dividend of the Belcher mine, of $3, amounte to $312,000. Stocks have heen dull all the week. On Friday ths 6th, the markst wae unueually dnll, thers heing very little husinese dons at the Board. Saturday eome few descriptions wers lively. Monday the markst was strongsr for Washoe stocks; Crown Point, Gould & Curry and Ophir all advancing. The leading feature wae the hrsak in Meadow Valley which closed at $19.50. On Tuesday ths market wae still etronger though thers wae not much hueiness dons. Wednesday the market was weak again, though Ely stocke showed an improvement. This morning etocks were again weak.

Belcher.—Thsy are increasing ths quantity of ors. Ths ors hreasts on the various floors throughout the etopes on ths 1,000 and 1,100-foot levele, all look wsll. They have commenced clearing out the east drift on ths 850-ft. levsl, from a point 250 feet eaet of the ehaft. They intend drifting north 225 feet, and then eink a winzs from the snd of this drift to connect with the stope on the 1,000-foot level, for ths purposs of ventilation and running down wasts rock to fill up ths stope.

Chollar Potosi.—Total receipts for August wers $52,201. Bullion shipped on the 4th, $23,014. During ths week, ending Sept. 7th, 1,540 tons of ors wers sxtracted and sent to mill; averags aseay $32 per tou. No improvement has taken plae iu the ore-producing sections nor have any new ore deposits heen struck of any eize. On the 9th, in drift from first etation new wall, eams as is heing run to connect with the ore stope for ventilation, and 60 feet wsst oi stope, cams on ore that assayed $40 per ton. This etation ie small and aesaye $52 per ton.

Crown Point.—A letter of the 10th etates that the winzes are all looking splendidly, and ths 1,300-ft. lsvsl is opening very fine. Although efficient work has not heen done to test the extent or richneee of the ore body on thie level, yet ae the work of clearing up ths drifte and puehing them ahead progreseee, sufficient is developed to justify ths most sanguins expectations for the futurs of the mine.

Hale & Norcross.—Total receipts for August, amounted to $53,841. Ore extracted during week ending Septemher 7th, 760 tons; delivered to mills, 857 tons; ore on hand 876 tone.

Raymond & Ely.—Ths sum of $35,141 was ssnt down on the 7th, and $34,140 on ths 10th; total for nins days, $103,544, equal to $11,504 per day.

Savage.—Total receipte for August, 61,000. During ths week ending Septemher 7th, 1,219 tons of ors wers sxtracted; 1,319 tons eent to mill, leaving 160 tons on ths dump. Average assay of ors $24.32.

Pioche.—A dispatch of the 11th says ths ore in ths second lsvel is eixtesn inchse wide, and assaye $150; third lsvsl, tsn inchss wids, assaying $144; second drift east from raise improving. Taking ont first-clase ors. Thse hullion at the Bowery mills, hurned on ths 8th inst., was unharmed hy tho fire. The American Flag mill has hssn engaged to orush 200 tons of ore, and mors, if desired, heginning on ths 20th. Ths August dividend of thie mine was passed.

Ths hnllion rsceipts from ths Kentuck, for August, were $20,543; hullion ehipped on ths 6th, $4,565. Four of ths Eureka Consolinated furnacss ars running.

Temperature at San Rafael.

From ths weathsr record of thres daily obsrvatione at the Tamalpaie Houee, we condsnse ths following

Notes of Temperature.

1872.	9 A. M. High.	9 A. M. Low.	12 M. High.	12 M. Low.	3 P. M. High.	3 P. M. Low.	5 P. M. High.	5 P. M. Low.
January	55°	45°	55°	47½°	70°	50°	60°	47°
February	58	43	82	47½	55	44½	55	43
March	58	45	58	48	70	49	58½	42½
April	66	51	78	62½	82	55	77	51
May	72	55½	85	60	82	59	79½	53
June	76	50	87	56½	89½	60	92	51
July	71	59	79	85	84	56½	85	64
August	70	58½	81	54	85	64	83	53
September	59½	58	80	56½	85	55½	81	62
October	72	59	81	50½	88½	68	83½	52
November	58	49	80	54½	79½	55½	78	51½
December	58	41	54	49	57	51	58	43

In addition to this very uniform temperaturs, San Rafael hae no fog and little wind. It is fast building up with fins suhurhan residence. All the land not covsred with mors than nine fest of water, at low tide, has been taken up. It ie distant from San Francieco 14 milse,—11 hy ferry to San Qsuntin, and 3 hy rail to San Rafael. It is qnits a rssort for invalids, and not the leaet of its attractions ie the excellent firet-clase hotel, ths Tamalpais.

C.

Mining Summary.

The following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

California.

ALPINE COUNTY.

Monitor.—Monitor *Miner*, Aug. 31: The Down shaft continuee to improve. Samples taken out yeetsrday, ehowed much more pure silver-glance ore than any hefore.

Leviathan.—Hundreds of hage of ore aseaying from 31 to 44 per cent. copper are heing deposited in front of our office.

AMADOR COUNTY.

Clean Up.—Amador *Ledger*, Sept. 7: The Kennedy, after a run of 15 days, cleaned up Monday a little over $9,000.

Plymouth.—Cor. eame: Ths Phœnix is heing retimhsred in the lower works. They will commences hoisting in a few daye. Their nsw 40-stamp mill will prohahly be running hy Nov. 1st.

The Alpine Co. are working on a 4-ft. ledge at 300 ft. and hoisting good pay rock.

Preparations are being mads for opening a numher of minee north of thie place, among which we note ths Condo, Philadelphia, Great Eastern, and ths Aden.

A 10-stamp mill has juet heen started on the Wheeler.

Sinking.—A S. F. Co. have located a claim south of town, heing a continnation of the Pcter'e lode, and are actively engaged einking a shaft upon the ledge.

BUTTE COUNTY.

Douglas Quartz Ledge.—Oroville *Record*, Sept. 7: Tunnel in about 100 ft. and exhihits a ledge. Free gold is discernihls through all of it, and much of it is decomposed quartz, from which they havs washed, with a quickeilvered rocksr, ae high ae 5 ozs. per day.

CALAVERAS.

Up Country.—Calaveras *Chronicle*, Sept. 7: The Good Hope pays handsomely; 37½ tons recently crushed, paid $14 per ton; 32 tons from ths Bartola, yielded $800. The Sandserson hae struck it rich. Ths south level is in 20 ft.; ths vein is two ft. wide; 20 tone of ore on ths dump and plenty in eight.

State of Maine.—Ths rock lately crushed paid handsomely.

Wolverine.—Ths new hoisting worke are on the ground, and are heing placed in position rapidly.

Campo Seco.—San Andreas *Citizen*, Sept. 7: Preparatious ars heing made to re-open the "Simme' quartz mins."

Right Bower.—The nsw ehaft, 84 ft. from the old oue, eunk for ths purpoee of giving purs air, ie down over 70 ft., and the work progreeeing finely. The rock heing crushed—8 etamps running—paye $70 per ton.

Railroan Flat.—Gamhls & Co. have their shaft down on their claim 150 ft., ehowing a fine vein of quartz from 3 to 4 ft. in width.

Petticoat Co. ars sinking their ehaft down ovsr 400 ft., with evsry indication of finding a large hody of ors.

Prussian Hill Co. are etoping out ore; havs an immense hody in sight; will averags about $15 psr ton; mill kept pounding away day and night.

Sanderson ehaft down ahout 90 ft.; level run south 20 ft., ehowing a well dsfined vein from 1 to 2 ft. in width. There is about 20 tons of ors on dump, sxtracted from ths levsl, which will pay ovsr $100 per ton.

Upper Country.—Calavsras *Chronicle*, Aug. 31: The main shaft of the Ohio Coue. reached the bottom of ths old works and water at 97 ft. Ths vein ie 20 inches wids and ehows gold. Ths ore is worth $50 per ton. Hoisting works will he pnt up. Ths Blazing Star and Bartolo stopped work temporarily. Ths Lone Star is expectsd to start in a ehort tims with a full force. Ths main shaft of ths Petticoat is 400 ft. deep, and in harren veiu matter. J. C. Heyer is eugagsd at running a new tunnel on ths vein, 100 ft. helow ths old work. The. ors from ths mins of S. Smith & Co., yielded $792. $42.81 per ton, the gold being 865⅞ fine. Ths vein is 9 ft. wide. Herryhansen Broe. have out 20 tons of ore, estimated worth $80 per ton. Ths nsw mill of the Heckendorn at Blus M

is very rich. A tunnel 200 ft. in length is being run to it.

At the St. John Mine the shaft is now 360 ft. deep; 3 levels or drifts have been run. In the bottom of the shaft, the ledge is increasing in thickness and measures, from wall to wall, a little over 6 ft. in width. The Co. contemplate erecting a 10-stamp mill.

Quincy Mine has a ledge 2 ft. thick, very rich; $50 and $70 being the general average to the ton; the shaft is 75 ft. deep.

The Lost Lead Mine vein is from 1 to 3 ft. thick and the rock from it pays $30 to $50 per ton.

NEVADA COUNTY.

Yuba G. Co.—Nevada *Transcript*, Sept. 5: At Relief Hill the gravel is rich, the Eagle claim paying from $30 to $40 per day to the hand for drifting. The Co. has a 30 horse engine for hoisting and their shaft is down 154 ft. They have yet 30 or 40 ft. to go to reach the bed rock.

California—Illinois Mine.—The incline is down 120 ft. and some spleudid rock is obtained in drifting to get back for working.

Keystone Co.—The Co., on Montezuma Hill, will be ready to commence washing gravel about the 1st of Nov. They have run a tunnel 450 ft. The cost of running it has been from $30 to $40 per ft. They have about 7,000 ft. of 15-inch iron pipe, and have expended in the neighborhood of $25,000 on the claims.

Cunningham Ledge.—A few days ago they struck a splondid ledge, varying in size from 12 to 20 inches, and have 80 ft. backs.

Montana Ledge.—The Co. is getting out rock very fast, and have on dump over 50 tons. Good judges assert that it will pay from $30 to $40 per ton.

Shipment.—G. V. *Union*, Sept. 3: The Eureka sent off yesterday gold to the value of $9,000; the result of 2-weeks' run. From Delanos bank $3,000 was shipped; Findley & Co. send down about $4,000 worth.

Hope Gravel Mine.—Yesterday the mine made a good clean up for a 2-weeks' run, the yield was $3,000.

Seven-Thirty.—A crushing recently made was good. 15 tons yielded $375.

Independence Cons.—A tunnel is being run through the hill, and there are several ledges which will be cut and worked through the tunnel.

Started.—Nevada' *Gazette*, Sept. 17: The mill of the California and Illinois mine started up on Sunday last.

PLACER COUNTY.

Rich.—Placer *Herald*, Sept. 7: We were shown a chunk of quartz rock which surpasses anything in richness in froe gold we have ever before seen. It was from the Auburn Co.'s ledge at a depth of 150 ft. In this specimen the gold seemed evenly distribnted throughout the whole rock.

Belle Mine.—We were shown a piece of quartz which was very rich in snlphnrets, and when pounded fine and pauned, yielded a very flattering prospect.

SAN LUIS OBISPO COUNTY.

Mines.—San Luis Ohispo Co. *Tribune*, Sept. 7: We have been informed that the Keystone quicksilver mine, near Cambria, has been sold to Cross & Co., of S. F., for $31,000.

SANTA BARBARA COUNTY.

The Mines.—Ventura *Signal*, Aug. 31: The mines in the northern part of the county are the snbject of mnch expectation with the initiated ones. Some good gold and silver-bearing rock has certainly been found.

SANTA CRUZ COUNTY.

Silver and Copper.—Santa Cruz *Sentinel*, Sept. 7: Otie Ashley, running a tunnel into his mine, above Fall creek, has strnck a ledge of rock which assaye $50 per ton—$30 in eilver and $20 in copper.

SIERRA COUNTY.

Oro Quartz Mine.—Downieville *Messenger*, Aug. 31: They have struck a large ledge of quartz which prospects well, and a number of smaller veins that are very rich.

A Prospecting Mill.—Manson has bought a pan and is getting ready to put up a prospecting mill.

East Fork.—The ownere of the old Wehe ledge on the East Fork have uncovered a fine body of ore in their claim.

TUOLUMNE COUNTY.

Rich.—Tnolumne *Independent*, Sept. 7; In the Potter and McKinny claim, Negro Guleh, they have struck it immensely rich. On Saturday they fonnd one piece weighing 85 ounces, estimated to contain 1 ounce of rock and 84 of gold.

Strike.—The last few mouths have been prolific in Tuolumne county in gold discoveries. This week a rich strike has been made about 50 milee in the mountains east of Sonora. The vein is 6 feet wide, and the rock ie very rich, bearing sulphates of silver and gold.

Nevada.

BELMONT.

Monitor Co.—Taking out good ore from the lower level, running south to connect by chute with the lower tunnel No. 2., 300 ft. of which was finished to-day.

El Dorado Co.—Have commenced stoping in the El Dorado, dowu in the 340-ft. level, both north and south of main incline; are hoisting nothing put pay rock; a breast of ore is exposed, measuring 6 ft. thick. Contracts will soon be let for sinking main incline 100 feet deeper.

Arizona.—Is looking splendid and doing well in its prodnction of rich ores.

Belmont Co.—Have main incline down 70 ft. below water level; are drifting each way on the vein with favorable indications. Working 20 men.

Combination Co.—Taking ont plenty of good ore. Working 20 men.

Yankee Blade.—Virginia Tunnel.—Rnnning night and day; main ledge not yet reached.

Patriot.—Good ore coming from the incline.

ESMERALDA.

Columbus Dist.—Reese River *Reveille*, Sept. 4: The Colnmbus are pushing operations ahead. A 10-stamp mill and a White furnace nro being erected which are expected to be in operation in about 6 weeks. A rock crusher will be attached, and it ls estimated that 20 tons of ore per day can be reduced by the works. There are abont 300 tons of ore on the dumpe with plenty more in sight; 20 men are engaged.

Holmes Mine.—Gold Hill *News*, Sept. 6: Ben. Hazeltine's mill is running steadily crushing ore from the Holmes which averages $45 per ton. The Co. are making arrangements to erect a mill of their own near tho mine.

EUREKA.

Shut Down.—Enreka *Sentinel*, Sept. 3: The Richmond smelting works have been shut down for a few days for repairs.

Ruby Hill Tunnel.—By actual measnrement this tunnel was in 210 ft. nt noon yesterday.

ELY DIST.

Arkansas.—Pioche *Record*, Aug. 31: The incline is down 225 ft., and ore shows in the incline all the way down from 3 to 3½ ft. wide. They have 60 tone of milling ore on dump averaging $200 per ton. First-class steam hoisting works have been put np.

Pacific Tunnel.—The tnnnel is in 1,000 ft. with fine stratas of ore at many places, and at the present face an apparent fine body is making its appearance.

Huhn & Hunt.—The Huhn & Hunt has between 3 and 400 tons of ore on dump, averaging $150 to the ton, and the mine actually shows in sight between 2 and 3,000 tons ore. About 123¼ ft. from the mouth, a winze 65 ft. in depth has been sunk, nnd the ledge shows immense bodies of rich ore. In the tnnnel the ore is base, but good in many instances. The length of the tunnel ie 350 ft.

Phœnix.—The mine is coustantly improving. The working shaft 5x9 has been commenced, over which hoisting worke will be immediately placed.

Marnell Tunnel.—A contract was let to tap the Sunburst, and that ledge was tapped on Wednesday last. The length of the tunnel is 190 ft.

Chief of the Hill.—Above the level of the tunnel, through which the mine will bo worked immediately, they have ore opened to the height of about 220 ft. and 240 long. The average width of the vein is 2 ft. The average assay is nbont 150 per ton, making a total gross value of $1,218,450.

HUMBOLDT.

Bullion.—Unionville *Silver State*, Sep. 7: Amount shipped from the Arizona since our last issue, was $7,200.

Arizona.—A drift run in from the old works south of the tnrn-table, discloses a large body of excellent milling ore. In the new tunnel the ledge ie 4 ft. thick, and the ore is of excellent quality.

Gem of the Sierras.—The Sierra has commenced operations.

To be Resumed.—Work is to be resumed on the Gen. Grant and Venus mines shortly.

Shut Down for Repairs.—The Silver Mining mill shut down for repairs last Sundny. It is undergoing a thorough overhauling.

Indian Dist.—We were shown some excellent specimens from the Black Hawk ledge. Horn silver and gold are visible to the naked eye in some of the pieces. The ore assays from $150 to $1,200 per ton in silver, and one snmple run away up in the thousande in gold.

REESE RIVER.

Bullion.—Reese River *Reveille*, Sept. 4: W. F. & Co. shipped from the office during Aug., 65 bars weighing 6,664 lbs., valued at $67,678.75.

Grove Tunnel.—A fine body of good ore was struck in a chute from the 200 ft. east level last week. A good class of ore is coming from the 200 ft. east level, where the ledge is large. Fair rock is being found in the breast 125 ft. down the incline.

Star of Nevada.—The contract on the tunnel will be completed to-day. The work ie to be continued.

Sayebrook.—In splendid conditiou. The ledge at the 150-ft. east level is large and carries a splendid class of ore.

Morgan and Muncey.—A recent crushing from the 300 ft. level returned $1,480.74 per ton.

Oregon Shaft.—Extensive operations are continued through this shaft.

Saratoga.—There are 3 tons of $3,000 ore in the ore-house, besides abont 12 tons of their low grade ore, which will only work from $500 to $600 per ton.

North River Tunnel.—Pay ore is coming out of the North River ledge.

Lane & Fuller.—(Pacifio Co.)—Getting plenty of good ore.

WASHOE.

Review.—Virginia *Chronicle*, Sept. 7: Knickerbocker.—Shaft 470 ft., and are drifting west on the 400-ft. station.

Arizona & Utah.—The new shaft is down and timbered 15 ft. The work is progressing rapidly.

Bullion.—Drifting west on 800-ft. level and cross-cutting.

Tyler.—They have started to pnt np a new horse whim and are going to clean their old shaft out, preparatory to prospecting.

Utah.—Work is progressing finely. The shaft is down 135 ft., in good working ground.

Sierra Nevada is rnnning on rock from the upper levels, and prospecting without any new developments.

Phil Sheridan is to work raising an air shaft, nnd they expect to have it through in a week. Cross-cut in the tnnnel ehnft looks well for ore.

Caledonia is drifting in the vicinity of the ledge on the 400 and 700-ft. levels. The water keeps increasing. They have not cut the clay wall yet.

Senator.—Have their new machinery completed and are preparing to build their hoisting works. They will resumo work on the shaft in about a week.

Kentuck is taking out 50 tons of oro per day from the 600-ft. level. The connection with the Yellow Jacket on the 1,300-ft. level has not yet been made.

Overman.—Are preparing to pnt in new machinery. Two new boilers arrived yesterday, and the rest of the machinery is expected in a few days.

Yellow Jacket is taking out 20 tons of ore per day. They are prospecting on the lower levels. On the surface they are prepariug to put in a new pumping engine.

Julia.—They started their new machinery this morning, and are engaged taking the water out of the shaft, preparatory to resuming work again.

Jacob Little.—The ore stopes are looking well, and the Co. are about to start a new tnnnel, which will cut the ledge 800 ft. below their present workings.

Chollar is taking out about 120 tons of ore per day from the old miue. At the shaft they are putting in new engines and new pumps.

Imperial.—The new station at the 1,700-ft. level has been opened and a drift started. The winze is down 50 ft. and still in clay and quartz The cross-cut from the south drift, 1,600-ft. level, is in 26 ft.

Ren Jacket.—This mine is looking better than it has since it was opened. The wall rock ie 10 ft. apart, with rich ledge matter running all through.

Ophir.—Sinking the shaft. The west drift station is in hard rock. The drift on the second station is in quartz and porphyry. The raise from south drift on second station is looking better.

Justice.—It is reported that this mine has struck tho ledge in the east drift, 400-ft. level. They are taking about 20 tons of good milling ore out of the Waller's defeat incline shaft.

Gould & Curry is opening the 1,600-ft. station. They are still prospecting on the 1,300 and 1,500-ft. levels, but no new developments. The pump is in working order again, and the work progresses rapidly.

Succor is not doing mnch but prospecting new shafts.

Baltimore.—Everything ie progressing finely. The shaft is down 252 ft.

Belcher is taking out 250 tons of ore per day, principally from the 1,000 and 1,100-ft. levels. All of the ore stopes are looking well. On the surface they are puttiug in new boilers and building nn addition to the boiler house.

Crown Point is taking out about 500 tons of ore per day. The drifts on the 1,300-ft. level have been cleaned ont and are now in good working order. The two winzee from 1,200 are looking well and are down 95 ft. The ore stopes on the 1,100 and 1,200-ft. levels are looking well.

Savage.—Daily yield 77 tons. The incline is 55 ft. below the 1,500. The ore on the south end of the 1,400 ft. level is improving. On the 1,500-ft. level they are rnnning a prospect drift east. Tho winze between the 1,400 and 1,500 is through. The second and third stations are looking well. On the sixth station, old works, they have a fine body of ore 6 ft. wide, which will assay $100 per ton.

Hale and Norcross.—Gold Hill *News*, Sept. 7: Sinking of the incline is continued in the hard material lately encountered; 12 ft. have been added to its length during the week. The main ehaft is somewhat crushed in for 300 ft., and the work of repairing the damaged portion is commenced.

Silver Hill.—The drift toward the ore vein, running westward from the new shaft, is in 90 ft.

Buckeye.—A new body of excellent ore is being developed at the 300-ft. level, south of the shaft. A station for a new level ie being opened from the bottom of the incline.

Imperial-Empire.—Much trouble has been experienced during the week with the water tanks, and but very little progress has been made in either the drifts or winze.

Beach and Paxton.—The work of cleaniug out and retimbering the old tunnel is making excellent progress. It is in about 250 ft., and expected to soon reach the ledge.

Woonville.—Daily yield abont 10 tons of high grado ore, keeping the mill running steadily.

Insurance.—The tunnel is cleared out and repaired to the ledge, a distance of 550 ft. Next week the Co. will commence the extraction of ore for milling.

Occidental.—The work of exteuding the lower tunnel ie carried on without intermission, day and night.

Union Consolidated.—The winze in the main west drift is down 40 ft., in good sinking ground.

WHITE PINE.

Bullion.—White Pine *News*, Aug. 31: The shipment from White Pine, during the past week was $20,814.58. The amount shipped for Aug. amounts to $116,048.46.

Treasure Hill Mines.—Eberhardt and Aurora Co.'s Mines.—The Keystone and Blue Belle shafts have been connected for the purpose of getting air, and sinking has commenced.

North Aurora.—The Ridsdale and DePass chambers continue to take out good ore. Running the lower Sonth Aurora tunnel to connect with the North Ridsdale shaft, which is being snuk to connect the Central shaft, and is down 74 ft., finding some ore, which shows that they are on top of a body of ore that is running north and south from the DePass to the Lady's chamber, which ie in the north end of the North Aurora.

Sunbeam.—Hoisting out ore of the Moscow shaft. Running east in the drift, and have struck a good quality of ore.

O. H. Treasure M—Has reduced the force of men this week, and concentrated the force of men sinking in the lower levels. The Wheeler tunnel is progressing steadily, and is in the spar veiu, mixed with quartz.

Copper Glance.—This miue is yielding ore of a very good grade, both from the North shaft and Northwest drift. The shaft is down 40 ft. in ore of a good chnracter.

Beecher Cons. M. & M. Co.—The ore in the old Blasdel works, is of a much better quality.

Pennsylvania.—The Jackson shaft is down over 80 ft. in vein matter, with good indications.

Pickwick & Minerva.—Sinking on the ledge and down 17 ft., with good prospecte.

Mammoth.—Continues to rnn in the same body of ore, with a slight improvement in rock.

Noonday.—Sinking in new shaft, in a body of high-grade ore.

Silver Plate.—Work steadily progressing, the mine and ore having improved during the week.

East Shenovgan.—This mine continues to yield good ore from the various workings. A force has been put on to run the South drift into the hill.

Ward Beecher.—Running a drift due east from Phillpots chamber, in a body of low-grade ore.

Hamilton M. & M. Co.—The Pogonip & Othello mine is being steadily worked, with good indications.

Outside Dists.—Robinson.—The Canton Co.'s furnace has been running for n week, but shut down yesterday for repairs. From 20 to 25 tons of ore was run through each day, turning out about 2 tons bullion daily, which assays from $125 to $150 in silver and about $600 in gold. The Altmau ore is rich in gold. A shaft 80 ft. in depth has been sunk. In a few days the Co. will commence tho erection of a 10-stamp mill, part of the machinery being already on the ground. The Foster & Hendricks mine is looking well, and some good ore is being extracted; new strikes and developments nre almost daily made.

New Strike near Robinson.—The excitement in regard to this new strike continues nnabated. A town site has been located, and two springs of good water have been fonnd about a mile distant. The Emma, on which a shaft has been sunk 20 ft. shows good ore—about 40 tone on dnmp. The Hendricks, Watson & Benniefield is showing good ore; shaft down abont 12 ft. So far, all the mines struck, contain gold.

Review.—Schell Creek, Aug. 31: McMahon is being worked steadily; sinking on the ledge, and running a tunnel into the mountain. They are taking ont immense quantities of rich ore.

Woonburn is lying idle waitiug for the returns from ore sent East some weeks ago to Balbac & Sons.

Jupiter.—Work is being pushed ahead; there is an incline shaft down 35 ft. in pretty good ore.

Summit has not been worked steadily; looking as good as ever.

Ontario.—Shaft down 40 ft. in fair milling ore. The east drift is in 25 ft. showing a body of ore 2 ft. wide which assays in the thousands.

Kavanagh Tunnel Co.—Tunnel in 55 ft. in soft granite, quartz showing through it in streaks. The owners expect to cut the main ledge of the hill.

Schell Creek is working a large force of men. The tnnnel is in some 180 ft.

Tehama Mine, work progressing, extracting large quantities of ore.

Arizona.

Mines and Mining.—Prescott *Miner*, Aug. 24: Lovejoy & Co. are ground sluicing on Lower Lynx creek, and working $15 a day to the hand. Further up the creek, several Cos. and single individnals are taking out gold by the ounce. Same is true of the placer fellows of the Hassayampa, Big Bug and Antelope creeks. Men are sinking on the Davis mine, Hassayampa Dist.

Mohave Co.—A crnshing of 5¾ tone from the Keystone has yielded $1,400.

Colorado.

Bullion.—Central *Herald*, Sept. 4: The Palmer and Nichol's reducing works, Georgetown, shipped during the past year, bullion to the amount of $141,430.

Idaho.

Bullion.—Owyhee *Avalanche*, Aug. 31: W., F. & Co. shipped from here, during the week ending yesterday, 6 bars valued at $8,625.37.

Local Record.—The War Eagle is in active operation. The nndergronnd force numbers 30 men—24 in the stopes, and 6 sinking the shaft,

[Continued on page 172.]

Smoky Chimneys.

Among home discomforts, if there is any, one affliction that spproaches very nearly to thst of a cheerless, uninviting exterior and surroundings, it is a smoky cbimuey, that instead of giving a draft to the smoke. turne it downward at intervale, and filling the house with its embittering effecte upon the eyes and good temper of tbe occupsnts.

Many chimneys smoke that otherwise would not, eimply because they are too large st the top, permitting large bodies of cold air to drop into them, obstructing the upward paseage of the smoke. Most stovepipes draw hetter than chimneys only because they are generally smaller and smoother thau hrick chimneys.

Forms of Chimneys.

Fig. 1, is an objectionable form for a chimney and will often emoke, when the same, improved upon, as in Fig. 2, would not. A good rule therefore, is, for all lsrge chimneys to he contracted at the top. But even this will not always remedy the difficulty, as in cities where it ie quite impossible to build chimneys upon low honses with eafety, that shall he as high as the tops of adjacent ones.

These low smoky chimneys are particularly liable to direct downward drafts from currents of wind rushing over the tops of the higher buildings and dropping down upon and into them with great force. To provide a remedy that shall be effectual and yet inexpensive, resort has been had to a great variety of sheet iron caps which are attached to the tops of the chimneys or stove pipes, and are intended to ward off the ill effects of etrong currents of wind, come from what quarter they may.

Scientific Tests.

We were personally present wheu a large number of these caps of a variety of forms were put to the test. A glass tube two inches in diameter was made fast and upright in an open tub of water. To the top of this tube was screwed any one of the caps represented hy the engravings and tben exposed to strong, steady and unsteady currents of air from a blower; the etraight lines indicate the surface of the water in the tub.

The cap, Fig. 3, in common nee in many places, is revolving, always presentiug its poiut to the wind except when it comes in an upward or downward direction. When exposed to the air hlast the water in the tube was lifted irregularly an inch or more. When the blast by means of a bent nozzle was brought directly down upon it, the water would fluctuate sometimes a little above and a little helow the water level; therefore no improvement under a downward current, but from a horizontal direction good.

Stationary Caps.

Revolving caps will wear out, stationary ones are therefore preferable. The cap, Fig. 4, before the blast, drew the water up a half inch in the tuhe. With its side to the blast there was motion to the water, hut with little or no rise or fall. When turned with its opeuing to the blast, all the water was driven downward out of the tuhe; this form is therefore objectionable uuless the wind he always from tbe right direction.

Cap Fig. 5, in the blast and in the position shown, caused the water to waver, now above and now below the geueral water line. When turned side to or angling, iu any direction, the effect was the eame, and the eame with the hlast directed upon its top. Thus Figs. 5 and 4 are only serviceable to eome extent in keeping out the rain

When Fig. 6 was placed in the blast, the water was lifted and suetained to a hight of 3 inches in the tube, and no matter how turned, or at what angle the hlast fell upon or against the cap the effect was very nearly the same; and no other form could be enbstituted as good as it. Fig. 7 came the nearest to it, with the advantage of heing a perfeot protection against even a driving rain, which is not entirely the case with Fig. 6, though nearly perfect.

In the *Country Gentleman* of recent date we fiud a direct corroboration of our experiment; it says: "For a small etove chimney, we have never found anything to exceed the sheet iron cap shown in Fig. 6. It was placed on a low chimney, where high roofs around made many conflicting currents, which sometimee blew the flames out of the stove below iu streams into the room. After this cap was placed in the top of the brick flue, it never smoked again—and not only so, hut it always drew with a strong current whenever there was wind, fire or no fire.

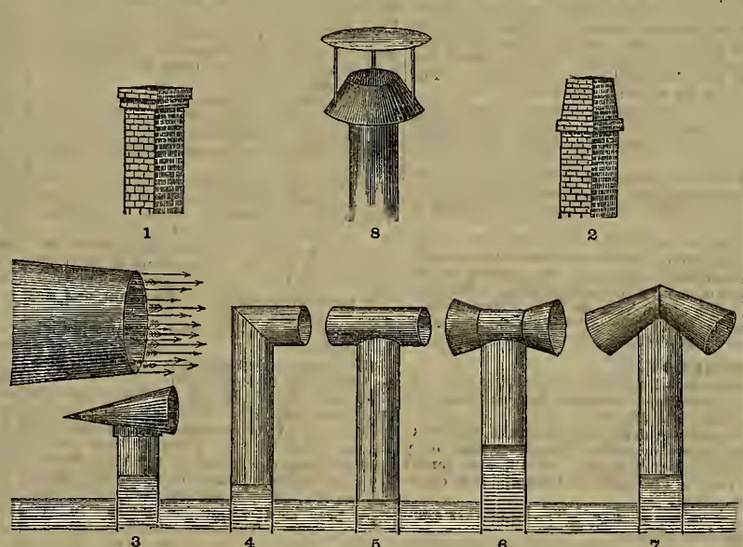
Emerson's chimney cap, Fig. 8, although quite different in construction, operates on the same principle. The cap prevente the wind from striking the top of the chimney. Between the cap plate and the sloping rim, there is a contraction and expansion of space similar to that shown in Fig. 6."

Interesting Lecture on Preserving Fruit and Other Articles.

By E. S. CARR, M. D., L. L. D., Prof. Agriculture and Horticulture, University of Cal.—Before the Oakland Farming, Horticultural and Industrial Club, Aug. 30th, 1872.

[Reported for the Press].

Ladies and gentlemen, I propose to give yon a talk on the preservation of food in general, so as to place before your minds some of the leading idess that lie at the foundatiou of the subject—that of meats and vegetables as well ae that of fruit. The entire object of all processes tending toward this end—the preservation of food—is to prevent its decay. It is of course a well-known fact that organized substancee, vegetable as well ae animal, are much more prone to undergo change than purely mineral oues. This arisee from their structure and the composition of the materials that enter into them. When we examine into their composition we find that they are more prone to undergo decay than those of mineral masses. These snbstances that enter into the composition of food are principally four in number. One is carhon, which is found in a pure state in the diamond, and in charcoal, and which forms, in the state of carhonic acid gas, the greater proportion of all vegetable substances; oxygen, which forms by weight nearly a fourth of the atmosphere. Nitrogeu, which forms by weight about three-fourths of the atmosphere, and hydrogen which forms eight-ninths of water. Now these elements form the



greater proportion of all organized snbstances. There are others which exist in small quantities, but we may lesve them out of consideration. Take the tbree which are found in a pure state only as gaseous bodies. Hydrogen is the lightest, and all iu their elementary state are gaseous bodies. Let me call your attention to one of them. Nitrogen is the most indifferent substance in nature. All bodies that contain it are more prone to undergo decomposition than others. It exists in common nitre as one of the principal ingredients of gunpowder, aud we all know how readily it there undergoes decomposition. In combination with it no compound is so stable as otherwise. All organized bodies contain more or less of it. Starch does not contain any of it, nor sugar either. This is one reasou that neither starch nor sugar decay in a pure form. But fresh meat and fruits will, because they always contain more or less of it. Carbon is evolved hy comhustion and hy decay, and it is well known that

Combustion is Only One Form of Decay.

All solid aud liquid bodiee that contain nitrogen are much more prone to undergo decomposition snd decay. So we see from the very nature of the materials that form the fruits, vegetables, and meats, the reasons why they are prone to undergo decay. And this is what we try to prevent by all processes of preservation. I have put down on the blackboard the

Circumstances Favorable for Decay.

In order to have decay we need the presence of air, water, and heat—heat of from 40° to 200°. If we have such a temperature snd have water and air present, we have all the conditious neceseary for the decomposition and decay of the substances of food. If we have only one of these conditions absent, decay will not take place If we have the usual temperature, hetween 40° and 200°, and have water but no air, no decay takes place. The reason is this, that air only, contains in a free state the elements which can

Tear to Pieces Organic Substances,

Vegetable and animal; oxygen is the great leveler—it tears to picces organized bodies, but only in a free etste—only free oxygen can do this. You all know many of ite chsracteristics. It mskee gas burn, and oil and candlee. It takes hold of them and tesrs them in pieces; and burning is one form of it. So it is with all ordinary decay of animal and vegetable matter which is placed in the soil or remains on the surfsce—oxygen causes it. If it is moist and we have oxygen present then it goes to work and tesre it in pieces and produnce ordinary decay, whence arises new and simpler combinstions than hefore. Suppose we have oxygen aud water but

A Temperature Below 40 Degrees.

Down to 32°, where water freezes, we hsve no decomposition. Even above that point at which watcr freezes we can have no decomposition, and the oxygen cannot work. If air is present and the proper temperature, but no water, decay will not take place.

When we Dry Our Meats

We may have a high temperature and all the other necessary conditions, but there is no decay. We must have water to produce fermentation and motion. A snbstance that causes decay mnst come into contact with that which is acted on. When there is water present it overcomes the elastic force of oxygen so that it can corrode and tear away. Take away the water and air cannot come in contact with it. We must have air, water, and a temperature of from 40° to 200°. With

A Temperature above 200 Degrees

It is too hot for this decomposition. If we understand this, we understand all that is necessary to attend to in drying meats. Let us look in the first place at the influence of water. We preserve a great deal of food by drying it. We cannot take the water away entirely. Take a piece of wood, ever so well seasoned, and we can take from it from fifteen to twenty per cent. of water; there is so little left, that it will not readily decay. We preserve food by exhausting the water from it—hy drying it. This we do gradually by an elevated temperature, though water will pass off at the freezing point. Ice in a dry atmosphere will show signs of vapor. We get rid of the water that exists in snbstances which we wish to preserve by applying heat, and driving it off in vapor. Take a piece of meat, dry it and the water will evaporate and pass off, leaving so little, that it will not decay because the oxygen cannot come into contact with the hydrogen. In some dry climates nothing will readily undergo decay. The atmosphere is very dry, so that it will readily take away water in the form of vapor. You are aware of conree that in such climates water will dry off the body more rapidly than elsewhere. In tbe desert places of Arizona, people can hardly live twenty-four honrs without water. It passes off so rapidly in that dry atmosphere, that intense thirst is quickly produced. So that when meat, fruit, vegetables, etc., do not dry readily in ordinary circumstances we must use artificial heat and mechanical appliances; of these that exist there are various kinds. There is

An Excellent Process for Drying Fruits

Which has been introdnced on this coast at Sacramento, and Santa Clara. It consists of a tunnel five feet square and fifteen feet long, where the fruit is dried after heing prepared by having the stones taken out, the skins peeled off, etc. The fruit is placed in tiers in the tunnel, on shelves, one above the other. The air in tbe hottom is heated by pipes to 180 degrees—at the top it will be about 120 degrees. The mechanicsl arrangements are such that the shelves fit in nearly air-tight, and move by four continuous chains that have brackets connected with them on which the shelves rest. As the chains revolve the shelves come down, and are discharged in rotation near the bottom. The shelves are so arranged in the tunnel that a current of hot air passing through takes away rapidly moisture enough, so that the fruit will be able to he kept a very long time. They are thus dried more rapidly than if exposed to the air at an ordinary temperature, or even warmer air. We can by this method rapidly prevent changes that represent incipient decomposition in the process of drying and preserving, hetter than under any other circumstances. The process was patented in 1860 or 1862, in Baltimore. Some one in New York two or three years since got a patent for pretty nearly the eame process. It is a simple snd quick method, and one by which we can get rid of the moisture and preserve the natural qualities of tbe fruit without being impaired as they are in the ordinary procese of dryiug. Fruits of all kiuds after treatment present almost the same flavor as the fresh fruits themselves. The same priuciplee that are applied in drying fruits, are also applied in drying and preserving meats. We may make use of artificisl warmth to get rid of the moisture hut the meats will ouly keep good a short time. All these substances that are used as food may be

Preserved by Excluding Atmospheric Air.

It is several centuries since the first attempts were made to preserve meats and fruits hy excluding the air. All have for their object the getting rid of the air, as we may have water, and the proper temperature for chemical change, but if the air is excluded, there will he no decomposition. It matters not whether snbstances are liquid or solid, we can preserve them hy excluding the air. In the common process of drying fruits by exposing them to atmospheric air, we have a kind of incipient decay getting in. Exclude the air from fruits, and there will be no decay, they will last a thousand years. There may be a favorable temperature and water but there will be no decay, hecanse the oxygen is excluded in excluding the air. It is the same with solid articles, and with all animal and vegetable substances. We may get rid of the air by pumping it out. This process of preserving is often used in connection with others. The whole process of preserving fruits in jars or cans depends upon it. Let a jar of this sort, (holding up a common glass jar), be filled with fruit; we put in syrup which excludes the air by filling up the interstices between the pieces of fruit, there will still be a little air in the upper part, which we expel by heat. We cannot apply a heat of 212°, or the glass will break. But we put the jar in a vessel of cold water and accumulate hest till we elevate the temperature sufficiently to drive all the air out. The water made into vapor is too driven out. Then put the stopper in to prevent the air from going in. Now if this is done perfectly, the arrangements we make use of will not allow the air to psss in, and the fruit will keep a very long time. Iu this connectiou let me call your attention to a

New Kind of Jar

Handed me this eveuing, more simple in construction than the ordinary one, with a projecting rim of glass ou the inside. It is covered simply with a metallic cover, japanned on the inside so that the acid of the fruit can act only a little ou the projecting metallic parts. It comes against the inner projecting parts and fits tightly. India rubber fitted on the upper surface of the glass makes it air-tight. Through a small opening on one side we can let the air in by inserting the point of a knife hetween the cover and the India rubber. By putting the knife on the top of the India rubber, and pressing downward, the air can he easily admitted and its pressure, which is equal to fifteen pounds to the square inch, easily removed. Iu the case of the ordinary fruit jar, the fruit is put in and covered with syrup and heat applied while the jar is opened. In this jar the cover is kept on loosely while the fruit is heated. By heating tbe fruit in an open vessel eome of the flavoring qualities will eecape. If we heat it in a confined vessel we ohviate the difficulty. It is said that this jar effects this desirable object. It is placed in cold water, and heated a certain length of time, which depends on the material to be preserved. Strawberries would not take long; corn would take longer. The vapor passes out through the opening on the side of the jar. In fact this method is resorted to in preserving meats. Put meat in a metallic or tin vessel, and stop it, subjecting it to a temperature of 212°. The heat will cause the oxygen to he consumed by uniting with the elements of the organic matter, and the heat will cook the meat and preserve it from decomposition. Have a perfectly tight jar and strong enough to resist the pressure of the steam on the inside and the heat will change

The Material that Tends to Undergo Decay,

So that it will not decay so readily. Cooked food, meat and vegetables will not decay so readily as uncooked. Have a temperature in the neighborhood of 200° and the white of an egg will not decay so readily as before cooking. So heat excludes air, hy expansion, driven out, and it also acts in the organic matter of vegetables and on the part iu meat like the white of an egg, and renders them less liable to decay. By having a confined vessel in which you can make use of applied heat, you will use up the oxygen by that process, and the heat will change the nature of the food so that the principle of decay horn of it will be destroyed. It was used a few years ago exclusively to preserve meat. Australian meat was put up in and subjected to an elevated temperature of from 212° to 240°. The cans were made strong enough to resist the small amount of steam generated during the process, and by which the food became cooked. The vapor generated on the inside passed out through the small opening. The operation was repeated two or three timee. Sometimes the meat preserved by this process is over cooked. Then there is another process by which hy the diminished pressure of the air it can be cooked at a lower tempera-

tnre. Sugar is made more quickly and at less expense of foel by diminishing the pressure of the air in vaenum pans. Take the pressure of air from water and it boils at 70°, although it will feel cold at 70° to the hand. By having the vapors pumped from the npper part of the vessel, while the heat is being applied we can get rid of the air that snbjects meat to overcooking. Sometimes alcohol has been put in. Alcohol boils at a less temperature than water. There are a variety of other methods to prevent overcooking.

[To be continued.]

Useful Information.

Bridging Joists.

A great many builders omit bridging joists, simply because they have never been able to understand and appreciate the advantage of such a practice. It is not uncommon to see pieces of boards nailed between the joists of every floor, about midway from the joints where the joists are supported, as a substitute for bridging. The object of bridging joists is to give stiffness and solidity to the floor after the boards are laid. Pieces of board as wide as the joists, extending from the other, near the middle, in lieu of bridging, will give but little stiffness to the floor. When bridging is done by nailing pieces of thin plank, or pieces of small scantling between every two joists in the form of the letter X, any superincumbent pressure applied to any one joist will be sustained, more or less, by two joists on each side of it. Hence when a person walks across the floor, the joists of which have been bridged, his weight will be received by five joists instead of one, as would be the case were the joists not bridged. When the joists are not properly bridged, a floor will sometimes spring and vibrate to such an extent, when one walks across it, as to give a tremulous motion to every article of furniture in the dwelling. When the joists are not bridged, the wall or plaster beneath will frequently be broken loose from the lath in places, so that large patches will fall to the floor.

Painting Floors.—For painting floors the mineral paints are exclusively osed. Paints which contain white lead are too soft, and wear off very easily. If a floor painted with colors wears off unreasonably fast, it is sure proof that the paint contained white lead. This generally happens because such colors cover better, and are more easily applied. Even the use of varnish boiled with litharge is to be avoided, and one boiled with borate of maoganese preferred. As a rule it should have two coats, but the greatest care should be taken that the first be perfectly dry before the second is put on.

After the floor has been painted, in order to give it a polish and make the surface more permanent, it is coated with what is called "floorine," which may be made thus: Dissolve one ounce of shellac in one-fourth of a pound of 80 per cent. spirits, and add to the solution one dram of camphor, and strain out the lees in a linen cloth. This lack is used after the paint is dry, and gives more tenacity to the surface. A fresh coat of lack may be applied from time to time, as it wears off, and you have always a fine polished surface, which can be washed.

Durability of Shingles.—Except in few localities, good, shaved pine, or cedar shingles are not obtainable. Where they are to be had at reasonable rates they are the best of all common materials for roofing farm boildings. Well laid, first-class shingles will make a good roof for half a century. On the other hand the common sawed hemlock and poor pine shingles will last scarcely three years. Nevertheless these latter must of necessity be used, and such means as are available should be employed to add to their durability. First the slope of the roof should be steep, as a good pitch will add half to their lasting quality. It is probable that crude petroleum could be used with good effect to saturate the shingles in cases where tainting the water would not be objectional. Moss can be kept from roofs by sprinkling them with lime.

Working in Horn and Tortoise Shell.—The horns are first macerated in cold water and then treated by heating in water and over a flame to soften them until they can be pressed out and split if necessary. Two methods are described *aplatissage a blanc* and *aplatissage a vert* (white and green flattening). Horn may be moulded by the use of the chippings which are heated until they become somewhat soft and then considerable pressure applied to make the parts unite firmly. In the same way artificial horn may be made. By mixing horn and caontchouc in powder, heating and pressing, may also be made another species of artificial horn. The spots on horn made to give it the appearance of tortoise shell, are made by solutions of gold, silver and lead.

An American Substitute for Gum Arabic.—It is said that the mesquite gum of Western Texas is almost identical with gum arabic, and during the past year has become an article of export, some 12,000 pounds having been gathered in Bexar county, and as much more between that and the coast. This gum exudes from the stems and branches of the mesquite, a mimosa, several species of which grow in Texas, New Mexico and Arizona.

Distinction Between Wine and Fermented Fruit-Juices, such as cider and perry. The detection of malic acid is not sufficient to prove a sample of wine to be adulterated, since it is naturally present in grapes. The most certain procedure is to filter and add ammonia in excess. The fruit-wines, when this has been done, deposit crystals, which adhere to the sides of the test-glass. Genuine grape-wine, on the other hand, deposits a powder, much less in quantity, not adhering to the sides of the glass, and, to the naked eye, devoid of crystalline structure. Both these deposits are soluble in dilute acetic acid. Under the microscope, the fruit-wine deposit appears to consist of tubular crystals, with parallel sides; that from grape-wine forming minute stars. When dissolved in dilute acetic acid, the deposit from cider and perry was found to contain lime and phosphoric acid. In grape-wine, lime is also present, but in smaller quantity. In this case, if the precipitate given by oxalate of ammonia is filtered off, a fresh addition of ammonia gives a further precipitate. This is not the case with cider and perry. If perry and wine are mixed in equal proportions, a deposit of crystals is found on the sides of the test-glass, on adding ammonia. In cider and perry the phosphoric acid is present, in combination with lime, whilst in wine it is combined with magnesia. The most characteristic reaction is that with ammonia.—*Mechanics' Magazine.*

Facing Oil Stones.—A correspondent of the *Scientific American* says: "I have in the course of my life spent a good deal of time in facing off my oil stones. I have used sand on a board, wet and dry, or an old millstone, or a hard brick. If the oil stone was soft, it could be cut or rubbed down in a short time; but if a hard one, it was a serious job. The thought struck me about two years ago that emery would be the thing to quickly cut a hard stone which I have. I dressed off a white pine board, put a thin coat of glue on it, when dry put on another, sprinkled coarse emery on the glue, rubbed it in well, and when dry put on another coat of glue and emery. I have been using it every since; it does not take one-tenth of the time to face off that stone than it formerly did with sand, etc. This may save some one some hard rubbing.

Albumen Charcoal.—A preparation called albumen charcoal has been devised for the purpose of clarifying sugar syrups, and for which it is said to answer an excellent purpose, a very small quantity only being required. Its application in clarifying wines has been suggested, although it is not stated whether it is exactly suitable. To prepare this substance, finely powdered and purified animal charcoal is to be mixed to a stiff dough with white of an egg, and torn apart into small pieces, dusted with the charcoal, dried and pulverized, and again kneaded with egg albumen to a dough, which is to be dried and powdered anew.

Grape Sugar may be detected in a solution by adding about five cubic centimeters of a solution made by the mutual decomposition of concentrated basic lead acetate, and dilute copper acetate. The solution turns yellow on boiling and in a short time deposits a yellow precipitate if only 0.001 per cent. of grape sugar is present. Milk sugar, if the solution is quite dilute, gives the same reaction. In concentrated solutions, however, the grape sugar gives an orange colored solution and precipitate, while milk sugar gives a red color.

Small Water Power.—A pipe which will deliver 53-4 gallons of water per minute will furnish about 85 hundredths of a one-horse power, sufficient to drive a moderate sized machine such as could be worked by a boy. The size of a turbine adapted thereto would be, say, 8 to 9 inches inside diameter of casing, with 7-inch diameter of central wheel from outside to outside of buckets. Twenty buckets would be better than a larger number.

A cement to stop cracks in glass vessels to resist moisture and heat: Dissolve casein in cold saturated solution of borax, and with this solution paste strips of hog's or bullock's bladder (softened in water) on the cracks of glass, and dry at a gentle heat; if the vessel is to be heated, coat the bladder on the outside just before it has become quite dry, with a paste of a rather concentrated solution of silicate of soda and quick lime or plaster of Paris.

To Give Plaster of Paris Hydraulic Properties.—It has recently been discovered that plaster of paris or anhydrous sulphate of lime, when heated to 500° Cent., acquires true hydraulic properties, and, when mixed with a due quantity of water, will at the expiration of about three days, set into a white, semi-transparent mass of great beauty.

To Bleach Flannel.—Soak for an hour in a week solution of bisulphite of soda, then add a little diluted muriatic acid, stir well and cover the vessel for twenty minutes. After this, take the flannel out, rinse in plenty of soft water and dry in the sun.

Dip the hand in a finger-glass until the temperature of the water therein is raised one degree. An amount of energy is withdrawn from that hand sufficient to project that water to a hight of 772 feet above the earth's surface.

A Steel Carriage Wheel has been invented. It is very light and much stronger than a wooden one.

Good Health.

The Philosophy of Good Health.

Man deals with life pretty much as he deals with his teeth. In youth, and while they are sound, he values them somewhat,—in name, and for their uses and their comeliness,—but does all he can to injure them. When they ache and torture him, he cannot extract and throw them away fast enough. But, when there only remain to him two or three old snags, mere apologies for teeth, which it were better for him to be without, he treasures them as if they were invaluable possessions.

It is so with life. In the first periods, when we seem to tread Elysian fields, and dance like blossoms in the zephyrs of a perpetual spring, full of a vigor that we think is unfading, we cannot live too fast. We sail for every shore, and landing, burn our ships behind us. But when the years increase, when age draws nigh, and, in its ever lengthening and deepening shadows, strength fails and functions decay, and the sparkling fountain is wasted to a slow trickling rill, what a change comes o'er the spirit of our dream, and how tenaciously we cling to the last poor fragmentary leaves of the dog-eared volume! And at last, when decrepitude lies prone upon us, when we have received the "three sufficient warnings," and are come to the last scene of all in "the eventful history," friendless, alone, deaf, lame, and bent like sickle, sans eyes, sans teeth, sans everything, how sordidly, eagerly, desperately, we cling to the worthless mockery of life, as if, the simple habit of living, by being long indulged, had grown into a passion for existence!

So also do we deal with health, the attribute and the privilege of youth. There is nothing we fling so recklessly away while we possess it; there is nothing we strive so desperately to secure when our follies have put it beyond our reach. How strange it seems that we should never come to estimate good health for what it is worth until it has almost or quite forsaken us. There is not an invalid anywhere but would make any sacrifices and yield up his dearest possessions to recover what he might have made his own with scarcely an effort had he felt its value at the proper time. Yet it is not strange neither, for man is not capable of appreciating what has cost him no labor to secure. Even liberty itself is no treasure save where it has been purchased by battle and privation. How shall man know what health is until he has lost it, when he has no consciousness even of his nerves, until some shock has impaired or preternaturally aggravated their action?

Nevertheless, health is more than a blessing to man,—it is a necessity. It is "indispensable to almost every form of human enjoyment; it is the grand auxiliary of usefulness; and should a man love the Lord his God with all his heart and soul and mind and strength, he would have ten times more heart and soul and mind and strength to love Him with in the vigor of health than under the palsy of disease." Man, in fact society, the living world in which we pursue our activities, is but an aggregate of individual men, and if the members be unhealthy, doubt not but the body will be unhealthy likewise. He was not an unwise philosopher who said that domestic happiness owed more to digestion than to morality.

The boon of good health is more possible of achievement now, and nearer within man's reach than ever it was in any previous age. "If you are careful with it," says the proverb, "glass will last longer than iron." Modern enlightenment endows us with a large store of the very kinds of knowledge needed to teach us how we may bestow proper care upon the preservation of our good health. We know the causes of our disorders, of many of them at least. The capacity of human nature to accommodate itself to untoward circumstances and to resist unfavorable influences, to lay down old habits and to take up new ones, is very remarkable. Surely that same flexibility of function which enables the sedentary sewing-woman to violate every law of health and yet live; which saves the sedentary smoke-dried German student from premature paralysis, and enables the London fashionable to preserve bloom and vigor while turning night into day and day into night; which sustains Livingstone in the sweltering jungles of Africa, and made existence possible to Kane and his companions frozen fast to the Glaciers of Greenland—surely an adaptability so great will put it in man's power to change his mode of life from a disorderly one against nature to an orderly one in accordance with nature, and will make it quite tolerable for him to put his belly-gods peremptorily away, quench his unruly appetites, and master the whole secret of a blooming and unfettered old age.

Nor are the means for procuring health far to seek nor difficult to attain. We must go back to nature—not indeed in Rousseau's sense of returning to savagery and unkempt nakedness, but, by using art, to discover the curative processes our instincts naturally pursue, and the philosophy of the regimen they require us to adopt. This, in effect, is to enforce upon our lives, our habits, our very thoughts, the scrupulous, sedulous, daily constant exercise of right reason. He who corrects and controls his appetites, gets something of the divine nature thereby. A proper regimen, a proper mode of motion and of rest, a proper sobriety of appetite and a sweet continence of temper, and the whole tale of illimitable physical and moral regeneration is told at once. Surely there is no difficulty here. Surely the simplest man amongst us, or the most obdurate in passion and in unreason can if he try pursue

"The rule of 'not too much,' by temperance taught.
In what thou eat'st and drink'st; seeking from thence
Due nourishment, not gluttonous delight.

Salt—Its Effect on the Blood.—Dr. Stevens, a French physician, saw a butcher killing a pig. He observed that he stirred the blood of the animal, and added a handful of common salt to it while stirring, which immediately made it crimson, and the stirring being discontinued, remained fluid. The change of color awakened his curiosity. The butcher could give no explanation of the phenomenon, except that it kept it from jellying and spoiling. Dr. Stevens seized a vessel, caught some blood, and made several experiments by putting salt into it, and found that the blackest blood was instantly changed to a bright vermillion by salt. "And," said he, "here is a fact that may lead to a practical rule." He has observed, in cases of yellow fever in the army, that the blood drawn was very black and fluid and on adding salt it became vermillion and retained its freshness; whereas, putridity of the blood is one of the characteristics of yellow fever. He therefore abandooed the usual mode of treating it, and gave his patients a mixture of various salts, and in a very short time reduced the mortality of fever in the West Indies from one in five to one in fifty.

Toothache, Earache, Etc.—It is a bad practice to put cotton wool, soaked in laudanum or chloroform, into the ear for the relief of toothache. It is true that it may sometimes prove effectual, and procure a night's rest, for the connection between the teeth and the ear is very close. But let it be born in mind that the ear is far too delicate an organ to be used as a medium for the application of strong remedies for disorders of the teeth, and that both laudanum and chloroform, more especially the latter, are powerful irritants, and that such applications are always accompained with risk. The teeth should be looked after for themselves, by some competent dentist; and if toothache spreads to the ear, this is another reason why they should be attended to at once; for prolonged pain in the head, arising from the teeth may itself injure the hearing. In earache everything should be done to sooth it, and all strong irritating applications should be avoided. Pieces of hot fig or onion should on no account be put in; but warm flannels should be applied, with poppy fermentation externally, if the pain does not sooo subside.

Effects of Mesmerism.—A gentleman residing in an interior town in Pennsylvania states that recently while a mesmeriser was performing in his place his neighbor's little daughter, a pretty, bright child, became a very interesting subject; and during the stay of the professor was nightly under his influence, sometimes for two hours. Her mind seemed in a strange way the day after be left, and in two days she was taken with a severe headache with darting pains; these terminated in a stupor, and, for about six months, she has been under medical treatment. The physicians say she has no disease. The poor child is an object of pity, having pined away to a skeleton and become perfectly helpless and idiotic. She does not know her own wants; never asks for food, merely opens her mouth when it is touched, and takes it like a young bird.

A New, Bright and not Poisonous Green.—It is announced that a green of nearly the same brilliant shade as Paris green may be obtained by taking twenty parts of oxide of zinc and one of sulphate of cobalt, mixed into a paste with water, and exposed to a red heat. If so, the invention is of considerable value, as the Paris-green is subject to the grave objection of being highly poisonous; and cases of fatal poisoning occur repeatedly by its use. Our readers will know that it is arsenite of copper, according to the detailed information given in previous numbers of this paper in regard to its manufacture.

Poisoned by Woon.—John L. Norman was recently employed by the St. Louis and Vandalia Railroad Co. to assist building a depot, during which time he was so severely poisoned that he was physically ruined for life, for which damage he has sued the company for $25,000. The timber employed in the construction of the depot had been saturated with arsenic and other poisons to prevent decay. Five or six workmen died from the effects of the absorption of poison into their systems. Eleven other workmen filed suits against the company in Belleville, Ill.

Ammonia for Hooping Cough.—Since it has been shown that the inhalation of air charged with the vapors of ammonia are beneficial in cases of hooping cough, M. Groatham, of Paris has been experimenting on the effects of boiling strong ammonia in the room where the patient was, with decided success.

Poisonous Wall Paper.—It has been found that the deleterious effects of green wall paper are most noticeable in rooms lined with flock paper, from which particles of wool, with, of course, the green coloring matter, are constantly getting detached. Green paint is not so hurtful, and the idea of varnishing it is a very good one.

MINING AND SCIENTIFIC PRESS.

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ILLUSTRATIONS AND REPORTS OF MINING ENTERPRISES WANTED.—Drawings or photographs of mining works that are of general interest to our readers are solicited for publication in this journal. Official reports of Companies, and description of mines of importance, of special interest, are also desired. Sketches of any new method and discoveries will be very acceptable.

San Francisco:

Saturday Morning, Sept. 14, 1872.

Gold and Legal Tender Rates.

SAN FRANCISCO, Thursday, Sept. 12, 1872.—Legal Tenders buying, 68¾; selling, 69. Gold in New York to-day, 113.

Table of Contents.

EDITORIALS.—The Diamond.—No. VI: The Silver Mines of Peru; A New Lease—Stanford's Extension: 169. Important Coal Discovery Near Oakland, 169.
ILLUSTRATIONS.—Foot-Power Circular Saw; Geological Section of Queen's Hill, Nevada, 161. Smoky Chimneys, 166. Quicksilver Elevator, 169.
CORRESPONDENCE.—Broad and Narrow-Gauge Railroads, 162.
MECHANICAL PROGRESS.—Boiler Explosive Phenomena: An Improved Mine Ventilator; Steamers Without Smokestacks; New Metallic Alloy for Cooking Utensils: Metallic Stain for Wood; Germany and the French Iron Works; A Colossal Bell to Ring in Peace, 163.
SCIENTIFIC PROGRESS.—Illustrations of Instinct: Combustibility of Iron: The Influence of Specific Gravity on the Melting Point of Substances, 163.
MINING SUMMARY from various counties in California, Nevada, Arizona, Colorado, Montana and Utah: Mining Shareholders' Directory, 164-5. Market Reports, 172.
USEFUL INFORMATION.—Bridging Joists; Painting Floors; Durability of Shingles; Distinction Between Wine and Fermented Fruit-Juices; Facing Oil Stones; Albumen Charcoal, 167.
GOOD HEALTH.—The Philosophy of Good Health: Salt—Its Effect on the Blood; Toothache, Earache, Etc.; Effects of Mesmerism; A New, Bright and not Poisonous Green, 167.
MISCELLANEOUS.—A Railroad Needed by the Mines; Government Aid to Mines, 162. Interesting Lecture on Preserving Fruit and Other Articles, 166. A Californian in Swansea, 170.

State Fair.

On Thuredey of next week, Sept. 19th, the California State Agricultural Fair opens at Sacramento and will continue for ten daye, closing on Saturday the 28th. There never hae heen a eeaeon before when the proepect eqnele the present for a grand and succeesful Fair.

Never at any former Fair hae eo much excellent blooded etock been entered for exhibition and preminm ae now, ae ehown by the book entriee and the largely increaeed nnmher of etalls that have been fitted up for ite accommodation. The eimple display of etock will be grand and worth all it will cost any one to give it their inspection.

At the pavilion a much more attractive display of art, industrial, egricultural and floral objects will he on exhibition than ever before eeen at our State Fair, as a epecial effort has been made to call out a largely increaeed amouut of all menner of manufactnred goode and the producte of our dairiee, grein fields and gardene, by liberel premiums.

It ie important that thoee heving etock, or articlee of home product or manufactures for exhibition, ehould be on hand early, and secnre their entries in time to he among the regular competitors for the Society'e premiume, end thue helping to alleviate that unpleasant rush of businees eo common on the first day or two of the Fair.

MILLS.—It ie said that Eastern companies will ehortly order three large etemp-mills from this State for Utah. In one inetance $100,000 have heen appropriated for the purpose of buying machinery.

ON FILE.—Letter from "L. P. Mo."

The Silver Mines of Peru.

[Written for the PRESS by W. T. RICKARD, F. C. S.]

Seeing in the MINING AND SCIENTIFIC PRESS e few weeks ago, a very interesting paper on chloride of silver in limestone formatione from the pen of my valued Chile friend, Henry Sewell, now of Salt Lake, I am induced to communicete "what I know" of these minerale, from a five-yeers' residence in the countries alluded to by Mr. Sewell, and particularly the district of Huantajaya in the Province of Tarapaca, South Pern, eituated in the most favorahle position that can he well imagined for foreign enterprise, viz.: within six miles of the port of Iqnique.

These celebrated minee are located in the mountein of Huantajaya, at an elevation of 2,877 feet from the level of the eea, which is reached hy a gredually sloping road to the edge of the coast range of mountaine, where it falls eome 1,800 feet and then descends by an easy grade to the town of Iquique. They have rendered the province of Tarepaca eo celebrated in Peru, thet it has sometimee been celled the Potosi of the eonth. They were discovered in 1556 by Spaniards from Arica, who worked at a spot called the Chifiones, hut who, after a time, ebandoned them.

The mines were re-diecovered by an Indieu, named Cncumate, during one of hie journeys to the coast for gnano, who made them known to Jnen de Loyaya, who commenced working, bnt died without reeping much henefit. In 1718 Don Bartolomeo de Loyaya found rich ore in the vein of San Simon, and in 1727 the panizo or nnconeolideted rock (compoeed principally of argillaceous limeetone, conteining fossil shells of the oyeter family) was discovered, in which were found the papas or insuleted massee of eilver; one met with in 1729 weighed 800 pounds, another in 1794, 400 pounds. The penizo having beenhored throngh, the principal vein was found, which led to the discovery of several othere.

There are at present about fifty miues opened in the dietrict, within a redius of two miles, all of which have yielded oree, more or lees, consisting of native silver, chloride, chlobromide sulphide of eilver, and their combinatione with copper, lead, etc., in a matrix of carhonate of lime, hoth crystalline and amorphoue.

Some idea may be formed of the great production of the minee, when it is known thet one family alone, the La Fuentes (descendants of whom hold eome of the best mines to thie day) peid in duties to the Spenish Crown, more than $5,000,000. They eent a mass of native silver weighing nearly 3,700 pounds, of the value of $750,000, as a present to the King of Spain. It was rolled by hand from the minee, and then ellowed to fall, hy its own weight, down the sendy side of the mountain range to Iquique; a portion of the track it made ie to he eeen to this day. (Vide "Antiquities and Ethnology" of Peru, by Wm. Bollant Esq., F. R. G. S.) Again, in Baron Von Humboldt'e "New Spein," vol. 3, p. 341, we find, "I estimate the product of Huantajeya, Porco, and less considerahle Peruvien mines, from the 16th century till 1803 at from 150,000 to 200,000 marcs of silver per ennum—$350,000,000." Also, Von Tschudi, in his travels in Peru, in 1854, seys: "The minee of Huantejaya, on the coast, were also very rich, and the silver ohtained from them was either very pure or conteining a very elight admixture of foreign eubstances. They yielded an incredihle quantity of metal."

Towards the letter end of the eighteenth century 30 of thepe mines had ceased to be worked from the following, amonget other causee, as stated hy Humboldt and othere: The extraction of silver was done on the moet primitive eyetem, and was attended with euoh heavy chargee, that none but the richest claesee of ore wonld pey for working, and all rock containing lees than 2 *per cent* of eilver wae thrown on the waste dumpe (desmontes) as too poor to pay the coet of reduction. The price of silver was very low. The consumption of gunpowder was excesive, two-thirds heing waeted.

Bad as the syetem of amalgamation was in Mexico, where the cost constituted 24 per cent. of the value of the eilver ohtained, Humboldt eays (p. 305) it was worse in Peru, where the expenses amounted to from 30 to 38 per cent. To all this, add that in Peru the moet of the miners were adventnrers without capital, which was advanced to them by capitaliste, according to Langloie Von Tschudi and others, at the most ruinoue and exorbitant, rates of interest so high as 100 to 120 per cent.

At Heuntajaya all these disadvanteges were aggregated hy ite great dietance from the capital (900 miles) and its local difficulties, being in a rainless district, and weter haviug to be imported from a great distence (25 miles). It ie not wonderful, then, as Mr. Skinner statee, that the oree of these minee, worth $130 per ton, did not then pay the coet of extractiou.

A few years later the power of the Spanish goverument wae ehaken. Then followed the struggle of the Spenish Coloniee with the mother country for their independence—the flight of all the Spanish capitaliets—the withdrawal of lahorere to fill the contending ranke—the abandonment of all commercial and mining enterpriees—and, as a metter of course, Hauntajaya, formerly employing thousands of lahorere, returned to its originel desert state—so much so that in 1825 the town of Iquique contained hut 100 souls, and in 1856 when I visited the district, hut 6 inhabitante were to ho found in the town of Huentejaya.

Iquique continued to he the abode of only a few fishermen until he discovery of the nitrete of soda beds in the immediate vicinity, in 1830, in which year four veesels were loaded with that article the export of which has gradnally increaeed, until the year 1860 it had reached 80,000 tone, employing from 140 to 160 vessels; conseqnently it is now, next to Callao, the most frequented port in Peru; British mail eteamers calling twice a month (plecing it in direct communicetion with San Francisco). The population now numbere over 5,000. It is ohvioue therefore that what were difficnlties and disadvantagee to the minee of Huantejaya, principally owing to their former state of isoletion from the world, are no longer such.

My ettention having been drawn to these extraordinary mines in 1856, hy Don Pedro King, Don Battazar Le Fuente end others, more or lees iuterested in them. I wae induced to examine the enormoue maeses of debrie or desmontes, which have been there accumulatiug to the extent of *many millions of tons*, during the lest 150 years, and the result of assays of 46 different eamplee, taken from the dumpe of the various miuee of the district, *without picking*, gave au average value of $52.50 per ton.

Upon one occasion (of a picnic at the mines, given hy my partner Dr. Coleman, and eelf, to the officere of H. M. Steam frigate "Retrihution)" eamples were takeu by some of the party from piles of ore which had been picked from the mase of theee desmontes, they aesayed ae follows:

No. 1, taken by Dr. Sole, Surgeon of "Retrihntion" $150 eilver per ton; No. 2, taken hy Paymaster Bullen, do. $129.62; No. 3, taken hy Engineer Urquart, do. $45 eilver per ton No. 4, taken hy myself, $83.75 per ton. Average $102 per ton of 2,000 lbs.

All this enormous quautity of rich refuse ore ie of the character, which is now most highly esteemed in thie country, viz. a eoft, friable rock, (ergillaceous carhonate of lime and limestone), containing eilver in the stete of chloride, chlohromide, or native; in fect both ae regards rock and metal, in the moet favorahle condition for milling. Samplee operated upou hy the system of amelgametion I then iutroduced into the country (Rickard & Mitchell'e, approximating to the Wheeler, or Varney pen), worked up to 90 per cent. of their assay value.

The argillaceous, fossiliferone limestone of the mouutaiu of Huantajaya is permeated by veins of crystallized carhonate of lime which carries the richest of the ore; theee are cut off near the base of the mountain, hy a Trap formation, lying almost horizontally, some 30 feet in thickness, of extreme hardnese, and described by the netivee as the piedra mesa—(table-rock.) On reaching thie rock all the mines, of course, gave out, and for a long time it wes concluded thet Huentajaya wae exheusted, till one mine owner more adventuroue than hie neighbors, penetrated through this "piedra meee" and found hie mine, the "mina veja" richer and more extensive than ever.

I am not awere that the point of npheeval of thie trep, which hes forced ite way to the surface iu thie horizontal way, hee yet been found, and owing to the unscientific menner iu which the minee have heen worked, and went of ventilation, ouly some sixty or eeventy feet in depth has been reeched below the trap, without, however, eucouutering auy more of it, and rich ore having been taken out up to the time of abaudonment from had air.

All that is required to revive the prosperity of this important district, is a moderate infusion of capital, skill and energy; and it eurprises me that such an inviting speculation as the reductiou of the valuahle desmontee (to he ohtained in many cases hy mere location and in othere hy paying a trifling royalty to their owners), ehould so long have eecaped the notice of our shrewd San Fraucisco epecnlators.

In 1864 a compeny was formed in London for the purpose of working the desmontes of Huantejaya and a small mill erected in the neighhorhood of Iquique, which was unfortunately swept away hy the great earthquake wave that deetroyed the town ahout three daye after the mill had commenced operations with the most eatisfactory reeults. The capital of the compeny heving been exhausted, no frther steps were then taken to reeume the enterprise; and, to the hest of my helief, the great wealth of Huantajaya and her practically exhanstless desmontes lays dormant at the preeent moment, awaiting the enterprising actiou of those who can appreciete at its true velue an operation of such importence.

A New Lease—Stanford's Extension.

The application of C. P. Stanford, of this city, for an extension of hie patent for a device for feeding quartz aud other eubstances to mills for crushing and grinding the same, has recently been allowed hy the Commiesioner of Patents.

This is probahly the first exteneion of a etrictly Pacific Coaet patent, ever granted hy the United Statee Patent office.

The device in question conciets of a hopper into which the ore to he fed to the stempe is placed. The hopper is provided with an erm which ie operated by the teppet cn the stamp etem eech time the etamp drope, by which meens a modicum of the ore ie precipitated under the stamp in poeition to be crnshed at eeqh drop. Thie device ie not only automatic in ite operation but ie self-regulating. When there ie not a eufficiency of ore beneath the stamp ite drop will he further theu when it ie properly supplied. In thie case the longer drop of the stamp ceusee the hopper to feed faster to eupply the deficiency, but when a proper qnantity of ore liee beneath the stamp its short drop will feed a lees quantity, thue providing for a uniform feed in a eimple manner.

This simple arrangement is now iu uee in a number of mills on this coast, end gives the best of satisfaction, doing away with the lehor of one man, end performing thet labor in a much better mauner than hend lahor can perform it. We believe that the inventor will have the eatisfaction of putting his device iuto most of the first-class mille on this coest before the exteneion of hie patent expires.

The extension of this patent was obtained through the SCIENTIFIC PRESS PATENT AGENCY.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS.]

FOR WEEK ENDING AUGUST 13TH, 1872.*

CUTTER FOR SOLES AND HEELS OF BOOTS AND SHOES.—Samnel Graham Browne, S. F., Cal.
SELF-ACTING WAGON-BRAKE.—Oliver Fisk, Coulterville, Cal.
HYDRAULIC NOZZLE AND TURN-PIPE.—Dennie L. Gorman, Michigan Bluff, Cal.
HYDRAULIC DERRICK.—Dennie L. Gorman, Michigan Bluff, Cel.
LOCK-NUT.—Joseph Scott Kirkpatrick, Punta Arenae, Cal.
ELECTRO-MOTOR FOR SEWING-MACHINES.—Ahel T. McClure, San Francieco, Cel., aseignor to himself, Thomae B. Shennon, George McDonald, George Stevens, Henry E. McBride, end Samuel D. Wood, eeme place.
MEDICAL COMPOUND OR BITTERS.—George W. Brown, Portland, Oregou.
MEDICAL COMPOUND FOR THE CURE OF DYSPEPSIA, ETC.—Daniel Mayon and Erastue Champlain, Cloverdale, Cal.
SASH-HOLDER.—Henry Polley, San Francisco, Cal., eseignor to himeelf end Anthony Rosenfield, eeme place.
WAGON-BRAKE.—Joseph Pavey end Marehall Martin, Walla Walla, Waehington Ter.
STOVE-PIPE DAMPER.—Warren Wasson aud George W. Dungen, Genoa, Nev.

*The patents are not ready for delivery by the Patent Office until some days afterward.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency

TOOTHPICKS have become an important article of trade. One toothpick factory in Canton, Maine, furnishes more work than all other business in town. Over one hundred cords of poplar have been hauled for ite use this season, and converted into toothpicks. Each of the machines used will, it is said, make 5,000 toothpicks a minute.

HEAVIEST LOCOMOTIVES.—The Philadelphia and Erie Railroad claim to have the largeet locomotives in the United Statee. They have five enginee runnning on that road weighing 44 tons each.

Elevation of Quicksilver in Mills to avoid Handling and Scattering.

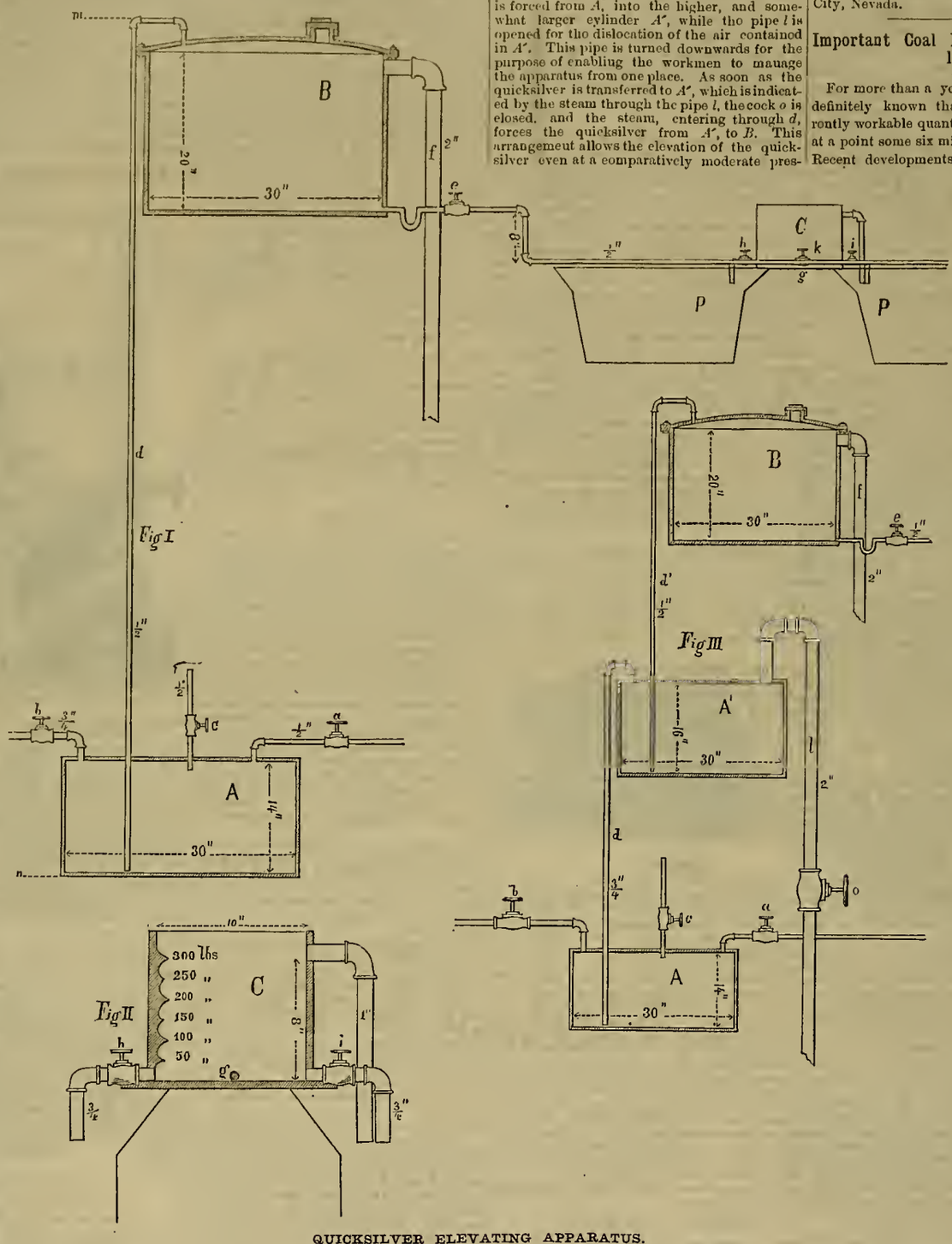
That it is troublesome and difficult to handle great masses of quicksilver in our mills is a well-known fact. In amalgamating the ore directly without previous grinding, the prompt charging of quicksilver is of great importance, as the extraction of gold or silver does not commence before the quicksilver comes into contact with the ore, and any delay in this respect has an injurious effect on the result of amalgamation. In carrying up the quicksilver from the strainer after the pans have been charged, at least half an hour of the amalgamating time will be lost, if not more, depending on the man who has charge of it. But in whatever way it is done, the constant filling into smaller vessels, and all the handling in charging the pans, no matter how carefully it is done, causes some mechanical loss now and then, amounting to a considerable quantity in course of time, not considering the hard work uselessly imposed on the amalgamator.

To avoid this evil, and at the same time to facilitate a more systematical work, Mr. Ottokar Hofmann has constructed a quicksilver elevating and conveying apparatus, that, although very simple in construction, answers the purpose perfectly. Fig. 1, in the accompanying cuts shows the arrangement of the apparatus in connection with the pans, representing a section. *A*, is a cylinder, made of boiler iron, the elevating cylinder out of which the quicksilver is raised above the level of the pans *P*, *P*; *a* is half-inch pipe, in connection with the vessels below the strainers, and with those receiving the quicksilver direct from the retorts, wherefrom the quicksilver is conducted into the vessel, *A*. The steampipe *b* connects with the boiler; *c* represents the air pipe, projecting one inch into the elevating cylinder, *A*, in order to prevent the entire filling of it; *d* is the elevating pipe extending downwards nearly to the bottom of *A*, and upwards to the receiver *B*. At the bottom of this receiver is a pipe *e*, extending along the pans *P*, in front, being also in communication with graduated cast-iron vessels *C*.

In starting the apparatus, the cock *b* is shut, and *a*, and *c*, opened. The quicksilver runs from the strainers and the retort into *A*, while the air contained in it escapes through *c*. If the cylinder *A*, is filled, which can be observed as soon as no air comes out of *c*, both *c* and *a* are shut up and the steam admitted through the pipe *b*. The steam forces the quicksilver by its expansive power through the pipe *d*, into the receiver *B*, which contains a little water.

The quicksilver flows steadily and quietly into *B*, except at the end of the operation when *A* is empty and only the pipe *d*, filled; then it flows quicker in proportion as its column diminishes. In order to effect a more uniform flowing and to avoid the contact of steam and quicksilver entirely, it is necessary to introduce some water into the cylinder *A*, before the quicksilver is admitted. The pressure of the steam towards the end should also be diminished. The pipe, *f*, leads into one of the settlers conveying the surplus of water, which accumulates by degrees.

Fig. 2, shows the section of the vessel *C*, of Fig. 1. The projections ineide indicate the weight of the quicksilver from 50 to 50 pounds—the smaller ones the fifties and the larger the hundreds. These vessels, as shown by Fig. 1, are connected with the receiver *B*, by the pipe *e*, and are so arranged that one is always placed between two pans in order to provide both of them with quicksilver. For this purpose the vessel is provided with two pipes *h*, and *i*. In Fig. 1, the pans *P*, *P*, are not in proportion to the size of the apparatus. The amalgamator opens the cock *k*, and lets the quicksilver flow through *g*, (Fig. 2), into the tank *C*, till the required quantity is indicated by the projections, either at once for both pans or if two charges should require more quicksilver than the vessel can hold, it is admitted twice, shutting and opening the respective cocks. In this way all the pans are charged uniformly, quickly and without trouble.



QUICKSILVER ELEVATING APPARATUS.

The hight to which the quicksilver can be forced, depends on the amount of pressure of the steam. In putting up an apparatus must be considered:

1st. The usual pressure of steam in the mill, and

2d. The hight from the bottom of the straining quicksilver vessel, and the upper brim of the pans. To this hight must be added yet the size of the diameter of *A*, and the depth of the receiver *B*, and the vessel *C*, or as shown in Fig. 1, the distance between *m* and *n*. The following table will serve for reference:

15 lbs.	pressure	per	sq.	in.	raises the quicksilver	2 ft. 6 in.
30	"	"	"	"	"	5 " "
45	"	"	"	"	"	7 " 6 "
60	"	"	"	"	"	10 " "
70	"	"	"	"	"	11 " 6 "
80	"	"	"	"	"	13 " 4 "
90	"	"	"	"	"	15 " "
100	"	"	"	"	"	16 " 8 "

This table shows that the hight to which the quicksilver in our mills under the usual pressure can be raised, is limited to from 10 to 16 feet. But in order to be independent, and to raise the quicksilver to any required hight at an average pressure, Mr. Hofmann constructed a combined apparatus, differing from the one described only by the use of two elevating cylinders *A*.

Fig. 3. shows a double apparatus by which the quicksilver can be raised to a hight of 22 feet, provided the pressure of the steam be 70 pounds.

In case the hight between *m* and *n*, Fig. 1, according to the table with reference to the steam pressure of the respective mill should appear insufficient, a double apparatus must be used.

In Fig. 3, the quicksilver, as before described is forced from *A*, into the higher, and somewhat larger cylinder *A'*, while the pipe *l* is opened for the dislocation of the air contained in *A'*. This pipe is turned downwards for the purpose of enabling the workmen to manage the apparatus from one place. As soon as the quicksilver is transferred to *A'*, which is indicated by the steam through the pipe *l*, the cock *c* is closed, and the steam, entering through *d*, forces the quicksilver from *A'*, to *B*. This arrangement allows the elevation of the quicksilver even at a comparatively moderate pressure for a single apparatus is $300; for a double one, $350, including the globe valves and three graduated vessels, but no pipes. There are three different dimensions made: Apparatus No. 1, has a capacity for 6,000 lbs. of quicksilver; No. 2, for 4,000 lbs.; and No. 3, for 2,000 lbs.

In making inquiries or sending orders, the number of the apparatus should be referred to, the number of the graduated vessels, and whether a single or double one is required.

For further information address, O. Hofmann, No. 5 and 7 First street, corner of Market, San Francisco.

The agent for Virginia City, Carson, and Dayton, is Mr. T. L. Van Bokkelen, Virginia City, Nevada.

Important Coal Discovery Near Oakland.

For more than a year past it has been quite definitely known that coal existed in apparently workable quantity and of good quality, at a point some six miles from Oakland Center. Recent developments are reported to have shown a vein near the surface with a thickness of three feet and upwards, and of a quality superior to that obtained at Mt. Diablo, and so free from sulphur that iron may be welded with it without difficulty.

The location is at an elevation of about 700 feet above the level of San Pablo Creek Valley, and three-quarters of a mile north of the Telegraph road. It stands at an angle of about 30°, where it has been opened in a shaft 30 feet deep.

The mines could be reached from Oakland by a roadway through the proposed tunnel of five or six hundred feet, with a grade easy enough for horses to trot up or down. It is said that several enterprising capitalists of this city are interested in the mines, and that coal from thence will soon find its way to this market, where it is thought it can be delivered at a cost of only about $3.50 per ton. Adding a fair profit to that figure, this coal, if it can be so delivered and is of the quality represented, will prove by far the most important coal discovery on the Pacific Coast. With good coal sold down in this city at $5 per ton, there is no reason why San Francisco should not become one of the largest manufacturing centers in the country.

BEET SUGAR WORKS. We learn that the beet sugar works at Alvarado have commenced operations on the new crop of beets, running as heretofore, successfully. Lux & Miller have taken a drove of cattle to the works to be fed and fattened upon the refuse of the beet, after sugar is extracted. Hay to some extent is fed in connection with the pulp, and when procurable a proportion of oil-cake meal is sometimes added with advantage.

THE receipts of bullion from Pioche, Nevada and from the different districts in Utah, now reach over $25,000 per day. This week the receipts from the Raymond & Ely mine have been unusually heavy.

A FIVE-OUNCE nugget of gold has been found in San Gabriel Cañon, Los Angeles County. Considerable work is now being done in that section of country.

Domestic Economy.

Taste in Household Matters.

In an article entitled the Art of Beauty, in a late number of the *St. Paul's Magazine*, we find some hints and suggestions on this subject so highly interesting and withal so practical for the household, and so common sense a character, that we have extracted from it the most striking of these, and believe that our readers, of the fairer sex at least, will find them interesting if not instructive. Speaking of the decoration of rooms the writer says:

Too much cannot be said of the pale, glossy, or white papers so much in fashion for drawing rooms and boudoirs. They are ruination to any material, to any picture hung upon them, to any complexion. The same must be urged against white ceilings, and still more against white carpets. A pale carpet not only destroys everything in the room, but it visibly decreases the size of the room. A light ceiling may pass unnoticed, since we have got out of the habit of ever looking upwards in a room, owing firstly, to the glare, and secondly to the certainty of there being nothing to see; but a light floor cannot be forgotton. It forces itself on your attention whichever way you turn, casts up unpleasant reflected lights upon the polished legs of chairs, and destroys the colors and forms of all the furniture by its own obtrusiveness.

A dark crimson wall, especially in flock, fine as the effect is, is not to be recommended for any evening room, as it is so difficult to light. Scarlet lights well; but crimson absorbs light to such an extent that hardly any amount of candles, lamps and gas-jets are able to make the room properly clear. I can only tell my readers that flock paper is a splendid foundation for a painted wall, as it then has the effect of a wall stamped or indented, and not papered. A red room with a black ceiling starred with dull sea-green or yellow, is very bright and good. Any drawings, or pictures, or furniture against scarlet or pale red walls, are wonderfully set off, either by night or day. A room painted with murrey color, a kind of white lilac, warmed up with amber haugings, may also have a very delicate and beautiful effect.

Let me also warn my patient readers against grained painting. This is a very odious fashion, which we may suppose came in for cheapness sake. But let me entreat the introduction of real woods; there are many inexpensive ones, and the markings in them are inexpressibly lovely. Even plain deal stained with some semi-transparent varnish (this is much used in ecclesiastical decoration nowadays) is a very clean, durable, and beautiful ornament for walls, floors and ceilings.

Now let me say a word about carpets. Pale ones I ignore. But the pattern and the colors even of the dark ones! What is to be done with a room whose carpet is grass-green, with large red spots or big flowers on it? What is to be done with any "cheerful" patterned carpet? Nothing—but to part with it to some member of that tribe whose armorial bearings are the Three Hats. Reader, if you wish to buy modern carpets, buy some moss pattern, or something very dark and neat, else you never will make your drawing-room other than a grief of heart to any cultivated person who may come into it.

But my advice on the whole is—send away all your carpets, get a quantity of the common rough matting for your rooms, and lay on it at intervals one of the rugs made by the Orientals. Turkish, Mooriah, Indian or African carpets, especially the antique make, will never fail to look right, for they are the most perfect in color and design that can be procured.

For curtains and coverings get whatever stuff you like. Chintz or velvet is always good. In patterns be wary. Patterns suitable for a hanging are not always suitable for a chair seat. For instance, to be sitting on a bird or butterfly is an unpleasant sensation; a vase of flowers on a curtain is absurd. Italian patterns are usually debased. Stout boys standing upon scarfs attached to bonghs in an impossible manner—swans perched on twigs of plants that never could support their weight—butterflies rather bigger than the storks beside them—are bad, because ridiculous, they hurt our sense of propriety, and worry the eye. Choose good patterns—common sense will guide you—and let your hangings be equal *in tone* with that of your walls.

And now I will close with a few rules, for color, which I think will be found equally applicable to dress and to furniture.

Consider, when choosing a color for any purpose, where it will have to be seen, in what quantity and in what substance. If you are going to paint a ceiling with it, choose a tint lighter than you mean it to appear; for a ceiling is always in shade, and a very dark color will be in that position hardly distinguishable from black. If you mean to veil it with white, choose a brighter, deeper tint than that of the unveiled trimmings which you intend for it, as it will otherwise not match them. If for dress or furniture, consider the material—a yellow which looks gorgeous in satin is detestable in cloth; a pale tint which in flannel would look like dirty white, may in a rich silk or fine cashmere have the most elegant effect. Never put green and red of equal intensity in juxtaposition; although these are complimentary colors, there is no more disagreeable mixture. A pale dull sea-green goes admirably with a rich crimson or Indian red; a pale dull red with deep green—but they must always be of very different intensity to look well together, and are always difficult to mingle pleasantly. Turquoise, the antique yellow-blue, mixes very sweetly with pale green; ultramarine, being a red blue, almost like in the shadows, is horrible with green. Pure pale yellow is a very becoming color, and will harmonize with purple; with blue the contrast is too coarse.

A Californian in Swansea.

The following letter to the *Bulletin* is from our old friend and contributor, Henry G. Hanks, who is at present in Europe. The letter is dated Swansea, South Wales, August 1st, 1872, and will be found interesting from the well written description it gives of that famous ore-reducing town:

I arrived here a day or two ago from London. I took the cars at Paddington at 10:10 in the morning, and arrived here at 5:30 in the afternoon. The country through which the road passes is beautiful, but there is no remarkable scenery. The beauty consists of the cultivated green fields cut into irregular patches by hedges of the deepest emerald, of the sweet little villages, the rivers, the canals, the occasional abbey covered with ivy, the wooded hill, the parks of noblemen, the obscure cottage of the poorer class almost hidden by flower and shrubbery, the occasional glimpse of the sea, the rain clouds, the shadows of which sweep over hill and plain faster far than the flying train. These beauties may be seen by all, but I think the ordinary traveler would prefer the absence of the smoky chimneys of the dirty inns, foundries, and rolling mills. Many people do not care to see young workmen sweating over the red-hot ingots of metal, panting, struggling with it in different forms, charging about the interior of the immense building from one stupendous machine to another, calling to his assistance all of the mechanical powers, turning, twisting, hammering the red-hot mass until it is changed into a street rail or an iron plate fit to protect the finest ship that was ever launched.

But to me all this has a significance far beyond that of the lovely scenery; to me the landscape acts as a lever to the beds of iron and coal below. Cotton was formerly king, but now iron is monarch and coal is his prime minister, and none will deny that the bed in which a king reposes is worthy of a beautiful coverlid.

Two cities of importance are passed through in going to Swansea: Gloucester, with its fine cathedral, and Cardiff, celebrated for coal. As we approach Swansea I begun to smell—well, sulphur, to say nothing of other odors. Tall chimneys are seen, emitting fumes of sulphuric acids. These are the chemical works; other nearly as tall chimneys send forth black clouds of coal smoke, while all around about chimneys of lesser altitude fume and smoke to that extent that the air is dimmed, and a white and black cloud hangs over the works, which are the celebrated Hafod Copper works of Vivian & Sons.

Swansea.

Swansea is a strange looking place. I have changed my opinion of it quite a number of times, and now I am about to leave it in a state of uncertainty. My first impression was that it was a "horrid dirty hole." When I went through Wind street, I thought it was "not so bad after all." My first view of the magnificent docks and shipping, the pier and harbor entrance, gave me the impression that it was a place of great commercial importance. The crowds of wretched people in the streets suggested extreme poverty. The ruins of the castle, and the evident age of many of the buildings disabused my mind of any idea that it was an "upstart" place. But I did not visit Wales to see Swansea, but to see the wonderful copper smelting works in it. These I have seen, and I am going back to California satisfied. I had letters of introduction to Messrs. Vivian & Sons, of London, who gave me some letters to the works here. I had the pleasure of meeting H. Hussey Vivian, M. P., who received me very kindly. I was shown over the works by Mr. Suchstand, the assayer.

Treatment of Copper Ores.

First, I was shown the roasting furnaces, where the ores are first treated to remove the sulphur. The sulpburous acid fumes are led to immense lead chambers, where they are absorbed by water, and become sulphuric acid. The acid is conveyed by large pipes of earthenware to the alkali works, where it assists in changing salt into soda. A portion of it is used in making super-phosphates, to be used as a fertilizer. After the ore is roasted, it is fused into what is called "matte" or "regulus." The regulus contains nearly all of the copper in a concentrated form, while the impurities are left in the slag. The regulus is then fused and re-fused in successive furnaces until it becomes the color of copper, and is to all external appearance pure metal, but if it was broken it would be found to be brittle and granular. It is then fused in a furnace of peculiar construction, and while in a fluid state it is stirred with green wood which burns away and at the same time purifies the copper in an obscure sort of a way which would be difficult to describe. This operation, I think, is called "pulling." When it is finished the copper is baled out with iron ladles, and poured into moulds, which are instantly quenched in water. To conduct these operations, buildings of a large area are required. The buildings are rough, and the inside of the works look more like the inside of an iron foundry than anything I can liken it to. But this it not all. In an adjoining building, also of great extent, the copper is formed into sheets. A portion is alloyed with zinc, and becomes brass and yellow metal, which is also rolled out into sheets. It is a strange sight to see the machinery at work in this department. On the sides there are furnaces where the ingots and sheets are made red-hot. The floor, which is made of iron plates, is crowded with men and boys. The boys stand with iron trucks, and at the word from furnace men, or those who manage the rollers, run the trucks to the furnace doors and secure, first the ingot, which is wheeled rapidly to the rollers, the man in attendance seizes it with tongs and pushes it against the rollers. It passes through as if it was putty. A man returns it from over the rollers, it passes back and forth like a game for some time, until it becomes a sort of ensign for plate. It is thrown on the truck again, and returned to another furnace by the boy. When it is hot it goes to another set of rolls to be treated as before, until at length it has assumed the right thickness. It is then taken to a pair of immense shears, by which it is quickly cut to a standard size. The sheet is black and ugly looking, and it must be cleaned or no one will buy it. To effect this it is returned to still another furnace, and when hot it is quenched in a fluid the nature of which cannot be stated here; upon which it becomes bright and clean. It is then ready for the market.

The Market for Copper.

There are other extensive copper works here, and Swansea is the market for copper ores from all parts of the world. The great smelters are turning their attention to other ores, and Messrs. Vivian & Sons have an extensive reduction works for treating silver ores. The processes are kept secret, and no one is allowed to visit the works. There is a very fine assay office in connection with them, over which I was shown, and was much pleased with the completeness of the establishment.

General Notes.

Swansea, as seen from the sea, has rather a pretty appearance, but differs, I think, from all other places from being always partly hidden by a cloud of smoke. There is a long pier built out from the shore, on the end of which is a light-house. This pier is the favorite walking place on a summer evening. There is a long beach, extending for a few miles, which is the evening resort of the inhabitants who are fond of a quiet stroll, and who do not object to wet feet. The buildings of the city are remarkably plain and devoid of much architectural beauty. There seems to be a great many poor people in Swansea, and multitudes of children. Some of these little rascals speak Welch, and it is amusing to see them play hop-scotch, and quarrel over the game in Welch. I don't think the Welch is a nice language; there are too many consonants in it, and to few vowels. I cannot speak well of any language that will tolerate such a word as "ynisecdwyn."

In the evening I went up High street, which was crowded with people. Two men were walking in the center singing songs in Welch. The words were printed on sheets, which they carried in their hands. Some of these I bought as a curiosity. The music I trust I shall forget after a while.

I noticed the interior of the houses of the poorer inhabitants, they were in most cases very dirty and showed every evidence of poverty. The floors were mostly stone and in but few cases I saw any carpet. Many of the women and children were ragged and dirty, and those who were clean and whole were dressed very coarsely.

There are many very rich people in Swansea, and of course the higher classes are educated and refined, but I could not but be struck with the contrast with the English towns.

I was badly fooled in my rage for sight seeing. An old castle had been pointed out to me from the railroad car by a gentleman who evidently knew nothing about it. In the morning early, I started out determined to see what these old castles, which I had seen in Ireland, Scotland and England, looked like when closely inspected. I found the distance to be greater than it seemed; as I slowly climbed higher and higher, I stopped occasionally to view the realy beautiful scenes. I passed sometimes, women carrying sacks of coal on their heads. I heard little dirty boys and girls singing gaily in Welch, and I really believe that two little fellows were swearing in Welch. I saw them commence throwing Welch stones at each other. When they saw me they ran away to a little cottage and watched me curiously as I passed, from behind the door. From the summit the scenery was beautiful. The summer sun was rising. It had been raining and everthing looked green and lovely. In the foreground were the copper works, overhung with a cloud of white smoke. Beyond was seen the straggling streets of the city, while still beyond the city was the wide spread Bristol Channel. On the hills were innumerable cottages and country residences. In every direction railroads enter the city. Some of them are used almost wholly to bring coal to the copper and iron works. They nearly all enter on high arches, some of brick and others of wooden tressel work.

After I had looked at the scenery from every point of view, I turned my attention to the ruined castle and approached it with much interest. Judge of my disgust when I found that it was partly built of blocks of furnace slag. I went down the hill again with a considerable sized flea in my ear. In asking about it later in the day, I learned that it was built some years ago by a philanthropist who wished to improve the condition of the workmen, but no one would live there, and it fell into decay and became a ruin by being undermined in quarrying stone below its foundation.

I have seen considerable of Swansea since I have been here, and I shall leave it with much valuable information in my possession. To the metallurgist and also the miner it is very interesting and instructive to visit such extensive works as are found here, and I think we need in California to know what these people do with our ores, and now that coal and labor are rising in value, it is worth while to consider the expediency of testing some of them ourselves. Yet I fear, even under these circumstances, it will be years before we can compete with Swansea in treating hy fire the more complex ores found in our State.

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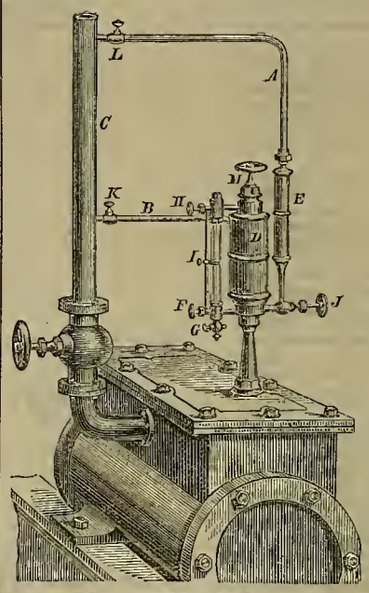

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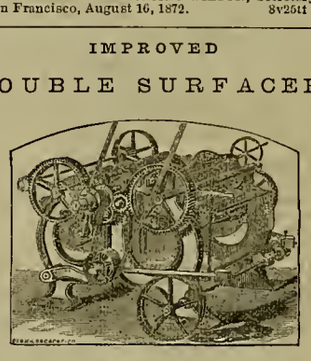
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MANUFACTORIES:—I, WHARF-ROAD, CITY-ROAD, LONDON, AND BORDEAUX, FRANCE.

[Continued from page 165.]

which is beiug put down for the 5th level on a 2-ft. vein of splendid quartz. In the 3d and 4th level stopes north, there is a good vein averaging 20 inches in width. The face of the third level is being drivcu in on a fiue looking 2-ft. veiu. In the 4th level stopes south, the vein is ahout 30 inches wide of decomposed quartz, charged throughout with mineral in varions conditions—black and blue sulphnrets, chlorides and oxides, with free gold. It is estimated that this ore, if milled by itself, wonld pay from $200 to $600 per ton. The ore shute containe 100 tons or more, just taken from the miue. The Owyhee mill commenced working War Eagle ore on the 28th inst., and has some 120 tons on hand. The new hoistiug works operate splendidly and everything in and about the mine is kept in tip-top shape.

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Montana.

Cherry Creek Mines.—Virginia *Montanian*, Aug. 29: The Havana has a shaft snnk 25 ft.; at that depth it preseuts a 3-foot veiu with 12 inches of high grade ore, and 24 inches of ore of moderate richuess.

Ou the Enselman there has been cousidcrable work done and the croppings show a strong vein for 2,000 feet. Two extensions have been made on the original. Young, Rae & Co., owu 850 ft. from discovery north, and are at work sinking a ehaft. Largey & Co. own the adjoiuing 550 ft. and are developing ou the north end of their ground, with a fine showing of rich ore.

The New Haven and extension is located on the apex of the hill. The veiu has a very favorable appearance and is about 2 ft. wide.

The Eberhardt and Extension is considered by quartz men second to none in the dist. Rae & Co. are workiug on the south, and propose sinking a 100-ft. shaft.

On the discovery, Enselman, Daniels & Rae are sinking a 100-ft. shaft. The ledge has a fine appearance, showiug a 3-ft. veiu, the first grade ore from which will go from $300 to $400 per tou.

The Clagett & Black, which is the extension, are the strongest ledges we remember ever to have examined. Around the shaft are piles of quartz boulders weighiug as high as 1,000 lbs., and every portion of them high grade ore at that, with native and chloride silver showing in all parts of the rock.

The Parasol lode is very wide.

Davis ledge has a full 4 ft. crevice contaiuing black sulphurets and sulphate of silver.

Home ledge is narrow but exceedingly rich in native silver.

Utah.

Star.—Pioche *Record*, Aug. 30: The Midas, a claim consolidated with 7 others, is working 2 shifts. The ledge is about 5 ft. wide, and has about 75 tons of ore on dump.

The last Chance is down 75 ft; lying idle at present. A mill will be erected shortly under the title of Last Chance and Temperance M. Co.

The Dead Beat has splendid prospects.

The Hickory was sold a short time ago to a New York Co. for $160,000.

Green Yankee Boy.—S. L. *Tribune*, Sept. 4: The mine ie opening up splendidly, ahundance of ore ie in sight assaying on an average from $150 to $200 per ton. Work is to be pushed rapidly.

Highland Chief Co., Little Cottonwood.—An incline shaft has been sunk 50 ft. deep, following a bold vein of rich ore almost from the surface. A tnnnel has beeu ruu, also following ore, which at 75 ft. from entrance connects with bottom of incline. Ore at end of tunnel 5 ft., with good indications of an increased thickness. The amount of ore exposed has been estimated variously from 350 to 500 tone.

Sultana Works, American Fork Canon.—S. L. *Journal*, Sep. 4: A furnace smelting about 20 tons of ore daily, from the Miller, is in constant and successtnl operation.

A new body of rich ore, of large and as yet undetermined size, has recently been struck in the Miller.

Simmon's Seniment Extractor.—This improvement for removing lime, dirt, sediment and scales from steam boilers has recently been introduced on this coast. Experience has proved that lime, salt and minute particles of dirt and sediment caunot be removed from large quantities of water before it enters the boiler. This pan being placed within the boiler, performs functions which no appliance on the ontside can do. The pan is made of sheet iron, and is to be placed in the boiler at the point of greatest heat, which is usnally opposite the bridge-wall of the furnace, where a concentrated flame impinges upon the boiler. It is claimed that it is impossible to buru a boiler while nsing this pan, and that the boiler will last much longer. The agents show many favorable testimonials from prominent parties in the East. Their advertisement will be fouud in another column.

New Incorporations.

Pioche Phœnix M. Co.—Sept. 5. Location: Ely District, Nevada, or elsewhere in that State. Capital stock, $4,000,000, in 40,000 shares. Trustees—Robert Sherwood, Geo. W. Beaver, C. W. Fox, E. Donahue and Dennis Murphy.

Port Paraiso L. and S. M. Co.—Sept. 5. Location: Lower California. Capital, $640,000. Trustees—J. McKennon, H. Chapman, J. Schriber, Abner Sedgley, J. H. McDonald, Wm. Hollis, H. Baker, C. S. Cousins and D. A. McDouald.

Sucker Flat M. Co.—Sept. 5. Location: Placer County, California. Capital, $500,000. Trustees—Matthew Langstaff, Thos. Hooper and Jos. Byrne.

Pacific Wool-Growing Co.—Sept. 5. Objects: To raise sheep and grow wool, and to raise horses, cattle aud other live stock. Capital stock, $120,000. Trnstees—J. H. Fish, A. Pierce, S. Jewett, Jas. Drury and B. R. Boyntou.

The Adelaide Cottonwoon M. S. Co.—Sept. 5. Location: Little Cottonwood District, Utah. Capital stock $4,000,000, in 40,000 shares. Trnstees—James F. Woodman, Jasper O'Farrel, Samuel Purdy, John Rosenfeld, George D. Nagle, G. A. Treadwell and L. W. Kennedy.

California Rustic Shade Co.—Sept. 6. Object: To manufacture rustic ehades, blinds, fans, all other articles of wood, and for general manufacturing. Capital stock, $40,000, in 8,000 shares. Trustees—Samuel Tyler, Chas. M. Tyler and L. L. Bullock.

Bear River Blue Gravel M. Co.—Sept. 7. Location: State of California. Capital stock, $2,000,000. Trustees—George D. Roberts, Thomas H. Holt, E. B. Dorsey, Charles F. Hamilton, Thomas J. Ponlterer, Solomon Heydenfeldt and John P. Couch.

Starr King M. Co.—Sept. 7. Location: Spruce Mountain Mining District, Elko County. Capital stock, 3,000,000, in 30,000 shares. Trustees—A. K. P. Harmon, N. C. Fassett, L. A. Booth, J. A. Drinkhonse and J. C. Wilmerdiug.

San Francisco & Santa Fe G. & S. M. Co.—Sept. 10. Location: Territories of New Mexico and Arizona. Capital stock $1,500,000, in 30,000 shares. Trustees—Samnel D. Creider, J. Clem Uhler, Thomas Ward, William H. Ashton, and John Robius.

Union Gas Machine Co.—Sept. 10. Object: to sell the Union Gas Machiue, for the purpose of lighting huildiugs and towns with gas; also, "to manufacture coal gas, enriched by the introduction of naphtha gas." Capital stock, $250,000, in 2,500 shares. Trustees—H. H. Blake, Robert Hewson and William Sherman.

Good Hope ann Little Valley Cons. M. Co. Sept 11. Location: Eldorado County, Cal. Capital, $3,000,000 in 30,000 sharee. Trnstees—J. D. Fry, Wm. H. Knight and William H. Miller.

Alps East Extension S. M. Co.—Sept. 11. Location: Ely District, Lincoln County, Nevada. Capital, $3,000,000 in 30,000 shares. Trustees—J. D. Fry, William H. Sears, J. W. Lisseuden, C. R. Burrage and C. M. Peck.

Comet Consolidaten G. M. and M. Co.—Sept. 11. Location: Nevada Co., Cal. Capital, $5,000,000, in 50,000 shares. Trustees—E. P. Hubbard, W. W. Nichols, C. M. Bates, W. G. Wayman and D. M. Hosmer.

Pacific Hygienic Earth Co.—Sept. 11. Object: To sell dry-earth closets, mannfactured nnder a patent of R. R. Strain. Capital, $300,000. Trustees—R. R. Strain, W. Q. Cook and James Walker.

De Mill Consolidated S. M. Co.—Sept. 11. Location: Ruby Hill District, White Pine Co., Nevada, etc. Capital, $3,000,000, in 30,000 shares. Trnstees—E. G. DeMill, Geo. Treat, J. M. Dickerson, Samnel Jennison and Foster Cain.

Meetings and Elections.

Pioche Phœnix M. Co.—Robert Sherwood, President; C. E. Elliott, Secretary; D. Hardy, Superintendent.

Chief East Extension M. Co.—Geo. W. Beaver, Presideut; Robert Sherwood, Vice-President; R. Wegener, Secretary; and D. Hardy, Superintendent.

New Coin.—Dollar pieces, coined in this city, have made their appearance, and are found more convenient than the half-dollar pieces where any large amounts have to be handled. They are of standard valne, and are a legal tender, the same as gold, as a circulating medium.

Another Mill Burned.—The Bowery Mill at Pioche, Nevada, was destroyed by fire on the night of the 10th inst. It was a ten-stamp mill, and was built this year.

Opinions of the Press.

* * * Metallurgy, which is treated of in the concluding section, is dealt with in the samo practical manner as the other subjects, the book altogether being one exactly calculated to suit the views and meet the requirements of those for whom it has been written. Mr. J. S. Phillips is well known to the readers of the Mining Journal as having also had considerable experience in mining in Cornwall.—[London Mining Jonrual.

The most practical and comprehensive work on mining subjects extant.—[Scientific Presa.

A Valuable Work.—* * We know of no work on these subjects in the English language at once so comprehenalve, practical and intelligible.—[S.F. Golden Era.

Mining and Other Companies.

Owing to the time necessary to mail the present large edition of the M. & S. Press, we are obliged to go to press on Thursday evening—which is the very latest hour we can receive advertisements.

Beckwith Mining Company, Ely Mining

District, Lincoln County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees, of said Company, held on the 19th day of August, 1872, an assessment of Twenty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the Office of the Company, Room 5, No. 302 Montgomery street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Saturday, the 28th day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the 23d day of October, 1872, to pay the delinquent assessment, together with cost of advertising and expenses of sale By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery St., San Francisco.

Corona Consolidated Mining Company—

Location of works, Eureka District, Lander County, Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 25th day of June, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Charles Hanson	229	100	$10 00
Charles Hanson	230	100	10 00
Charles Hanson	233	50	5 00
Charles Hanson	234	20	2 00
Charles Hanson	238	50	5 00
Charles Hanson	239	50	5 00
Charles Hanson	240	50	5 00
Charles Hanson	241	50	5 00
Charles Hanson	242	50	5 00
Charles Hanson	272	50	5 00
Charles Hanson	274	50	5 00
Charles Hanson	275	25	2 50
Charles Hanson	276	25	2 50
Charles Hanson	277	25	2 50
J M Foley	151	4000	400 00
D H Hall	324	500	50 00
D H Hall	325	500	50 00
D H Hall	326	500	50 00
D H Hall	327	500	50 00
D H Hall	328	200	20 00
D H Hall	329	200	20 00
D H Hall	330	100	10 00
D H Hall	331	100	10 00
D H Hall	332	100	10 00
D H Hall	333	50	5 00
D H Hall	334	50	5 00
D H Hall	335	50	5 00
D H Hall	336	50	5 00
D H Hall	337	25	2 50
D H Hall	338	25	2 50
D H Hall	339	25	2 50
D H Hall	340	25	2 50
H P Coon, President	160	4000	400 00
H P Coon, President	161	4000	400 00
H P Coon, President	206	3000	300 00
E A Richardson, Trustee	163	200	20 00
E A Richardson, Trustee	164	200	20 00
E A Richardson, Trustee	165	400	40 00
E A Richardson, Trustee	166	500	50 00
E A Richardson, Trustee	167	500	50 00
E A Richardson, Trustee	169	500	50 00
E A Richardson, Trustee	170	500	50 00
E A Richardson, Trustee	171	500	50 00
E A Richardson, Trustee	172	500	50 00
E A Richardson, Trustee	173	200	20 00
E A Richardson, Trustee	175	200	20 00
E A Richardson, Trustee	177	200	20 00
E A Richardson, Trustee	179	100	10 00
E A Richardson, Trustee	180	100	10 00
E A Richardson, Trustee	181	100	10 00
E A Richardson, Trustee	182	100	10 00
E A Richardson, Trustee	183	50	5 00
E A Richardson, Trustee	184	50	5 00
E A Richardson, Trustee	185	50	5 00
E A Richardson, Trustee	186	50	5 00
E A Richardson, Trustee	187	50	5 00
E A Richardson, Trustee	188	250	25 00
E A Richardson, Trustee	190	50	5 00
E A Richardson, Trustee	191	50	5 00
E A Richardson, Trustee	192	50	5 00
E A Richardson, Trustee	193	50	5 00
E A Richardson, Trustee	194	50	5 00
E A Richardson, Trustee	195	50	5 05
E A Richardson, Trustee	196	50	5 00
E A Richardson, Trustee	197	50	5 00
E A Richardson, Trustee	198	100	10 00
E A Richardson, Trustee	199	100	10 00
E A Richardson, Trustee	200	100	10 00
E A Richardson, Trustee	201	100	10 00
E A Richardson, Trustee	202	100	10 00
E A Richardson, Trustee	203	20	2 00
E A Richardson, Trustee	204	20	2 00
E A Richardson, Trustee	210	1000	100 00
E A Richardson, Trustee	211	500	50 00
E A Richardson, Trustee	212	500	50 00
E A Richardson, Trustee	213	250	25 00
E A Richardson, Trustee	214	250	25 00
E A Richardson, Trustee	216	100	10 00
E A Richardson, Trustee	216	100	10 00
E A Richardson, Trustee	217	100	10 00
E A Richardson, Trustee	218	100	10 00
E A Richardson, Trustee	219	100	10 00
E A Richardson, Trustee	220	100	10 00
E A Richardson, Trustee	221	50	5 00
E A Richardson, Trustee	222	50	5 00
E A Richardson, Trustee	223	50	5 00
E A Richardson, Trustee	224	50	5 00
E A Richardson, Trustee	225	50	5 00
E A Richardson, Trustee	226	50	5 00
E A Richardson, Trustee	268	25	2 50
E A Richardson, Trustee	269	25	2 50
E A Richardson, Trustee	270	25	2 50
E A Richardson, Trustee	271	25	2 50
W H Adams	205	10	1 00
W H Adams	267	20	2 00
L S Adams	207	200	20 00
H Dutton	208	200	20 00
C J Collins	227	100	10 00
C J Collins	311	1000	100 00
C J Collins	314	250	25 00
C J Collins	315	250	25 00
C J Collins	317	150	15 00
C J Collins	318	100	10 00
C J Collins	319	100	10 00
C J Collins	320	100	10 00
C J Collins	343	25	2 50
C J Collins	344	10	1 00
C J Collins	345	5	50
C J Collins	346	5	50
C J Collins	347	5	50
H A Cheever	244	500	50 00
H A Cheever	245	500	50 00
H A Cheever	246	500	50 00
H A Cheever	247	200	20 00
H A Cheever	248	200	20 00
H A Cheever	250	200	20 00
H A Cheever	251	200	20 00
H A Cheever	252	100	10 00
H A Cheever	253	100	10 00
H A Cheever	254	100	10 00
H A Cheever	255	100	10 00
H A Cheever	256	100	10 00
H A Cheever	257	50	5 00
H A Cheever	258	50	5 00
H A Cheever	259	50	5 00
H A Cheever	260	50	5 00
H A Cheever	261	50	5 00
H A Cheever	262	50	5 00
H A Cheever	263	50	5 00
H A Cheever	264	55	5 00
H A Cheever	265	50	5 00
H A Cheever	266	50	5 00
J Clem Uhler, Trustee	279	500	50 00
J Clem Uhler, Trustee	280	500	50 00
J Clem Uhler, Trustee	281	250	25 00
J Clem Uhler, Trustee	282	250	25 00
J Clem Uhler, Trustee	283	250	25 00
J Clem Uhler, Trustee	284	250	25 00
J Clem Uhler, Trustee	285	100	10 00
J Clem Uhler, Trustee	286	100	10 00
J Clem Uhler, Trustee	287	100	10 00
J Clem Uhler, Trustee	288	100	10 00
J Clem Uhler, Trustee	289	100	10 00
J Clem Uhler, Trustee	290	100	10 00
J Clem Uhler, Trustee	291	100	10 00
J Clem Uhler, Trustee	292	100	10 00
J Clem Uhler, Trustee	293	100	10 00
J Clem Uhler, Trustee	294	100	10 00
J Clem Uhler, Trustee	295	100	10 00
J Clem Uhler, Trustee	296	100	10 00
J Clem Uhler, Trustee	297	100	10 00
J Clem Uhler, Trustee	298	100	10 00
J Clem Uhler, Trustee	299	100	10 00
J Clem Uhler, Trustee	300	100	10 00
J Clem Uhler, Trustes	301	100	10 00
J Clem Uhler, Trustee	302	100	10 00
J Clem Uhler, Trustee	303	200	20 00
J Clem Uhler, Trustee	305	100	10 00
J Clem Uhler, Trustee	306	20	2 00
J Clem Uhler, Trustee	307	20	2 00
J Clem Uhler, Trustee	308	20	2 00
J Clem Uhler, Trustee	309	20	2 00
J Clem Uhler, Trustee	310	20	2 00
P H Sullivan	304	25	2 50
T F Cronise, Trustee	323	1000	100 00
J Cassell, Trustee	341	100	10 00
J Cassell, Trustee	342	100	10 00
W J Ranken	350	100	10 00
W J Ranken	351	100	10 00
W J Ranken	352	100	10 00
W J Ranken	353	100	10 00
Amasa Clark	349	100	10 00
H P Coon	168	2000	200 00

And in accordance with law, and an order of the Board of Trustees, made on the 25th day of June, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction at the office of the Company, 409 California street, San Francisco, Cal., on the 22d day of August, 1872, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sals.

T. F. CRONISE, Secretary.

Office, 409 California street, San Francisco, California.

At a meeting of the Trustees, held this day, the above sale was postponed to Tuesday, the 19th of September, A. D. 1872, at the same place and hour.

T. F. CRONISE, Secretary.

San Francisco, August 22, 1872.

Cottonwood Creek Gold Mining Company.—

Location of Works, Shasta and Tehama Counties, State of California.

Notice is hereby given, that at a meeting of the Trustees of said Company, held on the 19th day of August, A. D. 1872, an assessment of seven cents per share was levied upon the capital stock of said Company payable immediately, in United States Gold Coin, to the Secretary, at the office of the Company, No. 411 California street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Tuesday, the 24th day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the 15th day of October, 1872 to pay the delinquent assessment, together with costs of advertising and expenses of the sale.

JOS. L. KING, Secretary.

Office, No. 411 California street, San Francisco, Cal.

The First Annual Meeting of the Stock-

holders of the Golden Chariot Gravel Mining Company, for the election of Trustees and any other business that may properly come before them, will be held at the office of the Company, No 906 Market street, San Francisco, California, the 28th day of September, 1872.

S. W. COLLINS, Secretary.

San Francisco, Aug. 31, 1872. au31-4t

Ivanhoe Silver Mining Company—Location

of works, Ely District, Lincoln County, Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 10th day of August, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
E A Richardson, Trustes..	1	100	$50 00
E A Richardson, Trustee...	7	100	50 00
E A Richardson, Trustee...	8	100	50 00
E A Richardson, Trustee...	9	100	50 00
E A Richardson, Trustee...	10	100	50 00
E A Richardson, Trustee...	13	100	50 00
E A Richardson, Trustee...	32	50	25 00
G H Hunt, Trustee	55	10	5 00
W W Gollin, Trustee	18	50	25 00
Geo D Roberts	68	947	473 50
Thos Bennett	71	947	473 50
W Norris, Trustee	83	1000	500 00

And in accordance with law, and an order of the Board of Trustees, made on the 10th day of August, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, No. 331 Montgomery street, San Francisco, California, on the 8th day of October, 1872, at the hour of 1 o'clock P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

DANIEL BUCK, Secretary.

Office, 331 Montgomery street, San Francisco, California. se14-2w

Caution.—Louise Mining Company—Loca-

tion of works, Ely Mining District, Pioche, Lincoln County, Nevada.

Notice is hereby given that the following named shares, designated by the number of their respective certificates, in the capital stock of the Louise Mining Company, by law provided, were duly advertised, and sold at public auction by John Middleton & Son, Auctioneers, on Saturday, the 7th day of September, 1872, for delinquent assessment thereon, and accruing costs of advertising and sale, and will not be transferred by said company:

Names.	No. of Certificates.	No. of Shares.	Amount Due.	Shares Sold.
A K Chase	111	50	$ 7 00	14
L Englander	298	50	7 00	14
A Fischer	259	100	12 50	100
A Fischer	260	100	12 50	100
A Fischer	261	100	12 50	100
A Fischer	262	100	12 50	100
A Fischer	263	100	12 50	100
J Golding	148	10	2 60	5
J Golding	149	10	2 60	5
J Goldin	150	10	2 60	5
J Golding	151	10	2 60	5
A W Ingerson	245	50	7 00	14
S A Raymond	126	100	12 50	24
S A Raymond	130	100	12 50	24
T P Winter	171	10	2 60	5

WM. H. WATSON, Secretary.

Room 5, No. 302 Montgomery street, San Francisco, California. se14.2w

Marcelina Silver Mining Company—Lo-

cation of works, Eureka Mining District, Lander County, Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 24th day of July, 1872, the several amounts set opposite

the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
P P Cunningham	23	100	$30 00
Chas F Eaton	71	500	150 00
Chas E Elliot, Trustee	60	562	168 60
C W Kellogg	47	521	156 30
C W Kellogg	64	1042	312 60
Chas S Neal, Trustee	67	1000	300 00
Chas S Neal, Trustee	70	50	15 00
J H Nelson	68	500	150 00

And in accordance with law, and an order of the Board of Trustees, made on the 24th day of July, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, and unless payment shall be made before will be sold on the 30th day of September, 1872, at the hour of 3 o'clock P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

CHAS. E. ELLIOT, Secretary.

Office, room 21, No. 419 California street, San Francisco, California. sc14-3w

Mina Rica Mining Company—Location of

works, Auburn Mining District, Placer County, State of California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment (No. 7) levied on the sixth day of August, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Borchert, John S	16	375	$ 75 00
Slosson, R D	7	550	110 00

And in accordance with law, and an order of the Board of Trustees, made on the sixth day of August, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, No. 320 California street, room No. 5, San Francisco, California, on the 30th day of September, 1872, at the hour of two o'clock P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

OEO. R. SPINNEY, Secretary.

Office, No. 320 California street, room No. 5, San Francisco, California. sc14-3w

Mount Jefferson Milling and Mining Com-

pany.—Location of works, Firet Oarotte, Tuolumne county, California.

NOTICE.—There are delinqnent upon the followtug described stock, on account of assessmcut levied on the Twenty fifth day of July, A. D. 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Kingsley, S B	98	1000	$100 00
Lewis, L J, Trustee	53	200	20 00
Lewis, L J, Trustee	58	50	5 00
Lewis, L J, Trustee	59	50	5 00
Richardson, E A, Trustee	67	100	10 00
Richardson, E A, Trustee	75	100	10 00
Richardson, E A, Trustee	81	200	20 00
Sherwood, Robert	94	40	4 00

And in accordance with law, and an order of the Board of Trustees, made on the 25th day of July, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of said Company, on Monday, the 16th day of September, 1872, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

A. W. CLARK, Secretary.

Office, 418 California street, Room No. 2, San Francisco, Cal. aug31-3t

Nevada Land and Mining Company—Lo-

cation of works, Spruce Mountain Mining District, Elko County, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the eighteenth day of July, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
I Symons	unissued.	2199	$175 92

And in accordance with law, and an order of the Board of Trustees, made on the 18th day of July, 1872, so many shares of each parcel of said stock as may be necesary will be sold at public suction on the 30th day of September, 1872, at the hour of 2 o'clock P. M., of said day, to pay said delinquent assessmeut thereon, together with costs of advertising and expenses of sale.

WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery street, San Francisco, California. se14-3w

Norman Gold Mining Company---Location

of works, Aqueduct Mining District, Amador County, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 27th day of June, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Eldridge, G C	17	100	$5 00
Eldridge, G C	18	100	5 00
Hosmer, D M, Trustee	43	300	15 00
Hosmer, D M, Trustee	44	500	25 00
Hallet, G H	10	100	5 00
Humphreys, W. P	26	100	5 00
Humphreys, W. P	27	100	5 00
Heuemann, S	55	100	5 00
Levingston, J	7	100	5 00
Owens, Thurston C, Trus.	155	500	25 00
Owens, Thurston C, Trus.	156	500	25 00
Plummer, M D, Trustee	2	500	25 00
Plummer, M D, Trustee	34	300	15 00
Plummer, M D, Trustee	33	80	4 00
Plummer, M D, Trustee	153	100	5 00
Sheppard, J	54	100	5 00
Stewart, G W	50	200	10 00
Sewall, G, Trustee	131	100	5 00
Sewall, G, Trustee	132	400	20 00
Thompson, J M, Trustee	14	500	25 00
Thompson, J M, Trustee	49	500	25 00
Thompson, J M, Trustee	50	300	15 00
Thompson, J M, Trustee	107	3000	150 00
Thompson, J M, Trustee	109	200	10 00
Thompson, J M, Trustee	111	75	3 75
Teewilliger, N B	10	100	5 00
Wayman, W G	21	500	25 00
Wayman, W G	22	300	15 00
Wayman, W G	47	300	15 00
Wade, Rufus	24	100	5 00
Watson, Wm H, Trustee	63	1167	58 35
Watson, Wm H, Trustee	64	1000	50 00
Watson, Wm H, Trustee	57	100	5 00
Watson, Wm H, Trustee	68	100	5 00
Watson, Wm H, Trustee	69	100	5 00
Watson, Wm H, Trustee	70	100	5 00
Watson, Wm H, Trustee	71	100	5 00
Watson, Wm H, Trustee	72	100	5 00
Watson, Wm H, Trustee	73	100	5 00
Watson, Wm H, Trustee	74	100	5 00
Watson, Wm H, Trustee	75	100	5 00
Watson, Wm H, Trustee	76	100	5 00
Watson, Wm H, Trustee	77	50	2 50
Watson, Wm H, Trustee	78	50	2 50
Watson, Wm H, Trustee	79	50	2 50
Watson, Wm H, Trustee	80	50	2 50
Watson, Wm H, Trustee	81	50	2 50
Watson, Wm H, Trustee	82	50	2 50
Watson, Wm H, Trustee	83	50	2 50
Watson, Wm H, Trustee	84	50	2 50
Watson, Wm H, Trustee	85	50	2 50
Watson, Wm H, Trustee	87	20	1 00
Watson, Wm H, Trustee	88	20	1 00
Watson, Wm H, Trustee	89	20	1 00
Watson, Wm H, Trustee	90	20	1 00
Watson, Wm H, Trustee	91	20	1 00
Watson, Wm H, Trustee	92	20	1 00
Watson, Wm H, Trustee	93	20	1 00
Watson, Wm H, Trustee	96	10	1 00
Watson, Wm H, Trustee	97	30	1 50
Watson, Wm H, Trustee	98	30	1 50
Watson, Wm H, Trustee	99	30	1 50
Watson, Wm H, Trustee	100	30	1 50
Watson, Wm H, Trustee	101	30	1 50
Watson, Wm H, Trustee	102	30	1 50
Watson, Wm H, Trustee	103	30	1 50
Watson, Wm H, Trustee	104	30	1 50
Watson, Wm H, Trustee	105	30	1 50
Watson, Wm H, Trustee	106	30	1 50
Watson, Wm H, Trustee	108	666	33 30
Watson, Wm H, Trustee	130	100	5 00
Wurkheim M	110	25	1 25

And in accordance with law, and an order of the Board of Trustees, made on the 27th day of June, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, Room 5, No. 302 Montgomery street, San Francisco, Cal., on Thursday, the 22d day of August, 1872, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

WM. H. WATSON, Secretary.

Office—Room 5, No. 302 Montgomery street. San Francisco. au3-3t

POSTPONEMENT.—The above sale is postponed until Tuesday, the Seventeenth (17th) day of September, 1872, and will be held at the same hour and place. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

San Francisco, August 22, 1872.

Pennsylvania Mining and Milling Company.

Location of works, Schell Creek District, White Pine County, Nevada.

NOTICE.—There are delinquent upon the followiug described stock, on account of assessment levied on the ninth day of August, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Thos J Patten	13	500	$ 600 00
Thos J Patten, Trustee	5	3,000	3,600 00
H Menthine	6	200	240 00
Rose Woodworth	7	200	240 00
Thos T Cook, Trustee	18	1,000	1,200 00
J M Livingston, Trustee	24	500	600 00

And in accordance with law, and an order of the Board of Trustees, made on the 9th day of August, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, room No. 14, No. 331 Montgomery street, San Francisco, California, on the 5th day of October, 1872, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

DANIEL BUCK, Secretary.

Office, 331 Montgomery street, San Francisco, California. sc14-2w

The Piedmont Land Company—Location

of property, Alameda County, State of California.

Notice is hereby given, that at a meeting of the Directors of said Company, held on the twentieth day of August, 1872, an assessment of Two Dollars, gold coin, per share, was levied upon the capital stock of said Company, payable immediately to the Secretary of said Company, at the office, No. 522 California street, San Francisco, California. Any stock upon which said assessment shall remain unpaid, on the twenty-first day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on the second day of October, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale.

FRANK JAYNES, Secretary.

Office, No. 522 California street.

San Francisco, Cal., August 20th, 1872.

Quail Hill Mining and Water Company—

Location of works, Calaveras county, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 22d day of August, 1872, an assessment of five dollars per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary, at the office of the company, No. 409 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the 2d day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the 24th day of October, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. F. CRONISE, Secretary.

Office—409 California street, San Francisco, Cal. au31

Silver Sprout Mining Company—Location

of works and mines, Kearsarge District, Inyo county, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said company, held on the 26th day of August, 1872, an assessment of fifty cents per share was levied upon the capital stock of said company payable immediately in United States gold coin, to the Secretary at the office of the company, No. 318 California street, S. F.

Any stock upon which said assessment shall remain unpaid on the eighth day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the eighth day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. B. WINGARD, Secretary.

Office—Room No. 1, second floor, No. 318 California St., S. F. au31-4t

Spring Mountain Tunnel Company—Lo-

cation of works, Lincoln County, Nevada.

NOTICE.—There are delinquent upon the followiug described Stock, on account of assessment, No. 8, levied on the 9th day of July, 1872, the several amounts set opposite the names of the respective Shareholders as follows:

Names.	No. Certificate.	No Shares.	Amount.
J M Buffington, balance	5	955	285 50
David Leahy	132	1233	369 90
S M Keeler	23	566	199.80
F A Munroe	29	50	15 00
F A Munroe	31	25	7.50
F A Munroe	33	25	7.50
Ann O'Neill	93	1333	399.00
W J Jeffards	06	20	6 00
Geo E Rogers, Trustee	120	1333	399.90
J T Pomeroy, Trustee	151	100	30.00
J T Pomeroy, Trustee	152	300	90.00
J M Buffington, Trustee	91	360	108.00
Ford H Rogers	124	1333	399.90

And in accoidance with lsw and sn order of the Board of Trustees, made on the 9th day of July, 1872, so many shares of each parcel of said stock as may be nccessary, will be sold st public auction on the 9th day of September, 1872, st the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. M. BUFFINGTON, Secretary.

Office, room 37, Merchants' Exchange, California St., San Francisco, Cal.

SPRING MOUNTAIN TUNNEL COMPANY—POSTPONED. The above sale is postponed until Monday, the 2d day of Sep ember, 1872 at the same hour and place. By order of the Board of Trustees. J. M. BUFFINGTON, Secretary.

San Francisco, Sept. 4th, 1872. sep1-3t

Tellurium Gold and Silver Mining Com-

pany, Pine Grove District, Amador County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 3d day of September, 1872, an assessment (No 12) of one dollar ($1) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, N. E. Corner Clay and Kearny streets, in the City of San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 9th day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 26th day of October, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. SOPER, Secretary.

Office—Northeast corner Clay and Kearny streets, San Francisco, California. sep7

Victoria and Imperial Tunnel and Mining

Company—Location of works, Little Cottonwood Mining District, Utah Territory.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 14th day of August, 1872, an assessment of Ten Cents (10c) per share was levied upon the capital stock of said Company, payable immediately in United States gold coin to the Secretary, at the office of the Company, Room 5, No. 302 Montgomery street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Wednesday, the 18th day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 12th day of October, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery street. au14 4t

Winnemucca Chief Silver Mining Com-

pany—Location of Works, Humboldt County, State of Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 10th day of June, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No Shares.	Amount.
John Robins	159	100	$15 00
John Robins	160	100	15 00
John Robins	161	100	15 00
John Robins	162	100	15 00
John Robins	163	100	15 00
John Robins	164	100	15 00
John Robins	165	100	15 00
John Robins	166	100	15 00
John Robins	167	100	15 00
John Robins	168	100	15 00
John Robins	176	100	15 00
John Robins	177	100	15 00
John Robins	178	100	15 00
John Robins	179	50	7 50
John Robins	209	500	75 00
John Robins, Trustee	9	500	75 00
John Robins, Trustee	19	500	75 00
John Robins, Trustee	20	500	75 00
John Robins, Trustee	21	100	15 00
John Robins, Trustee	22	100	15 00
John Robins, Trustee	23	100	15 00
John Robins, Trustee	24	100	15 00
John Robins, Trustee	25	50	7 50
John Robins, Trustee	26	50	7 50
John Robins, Trustee	27	50	7 50
T F Cronise, Trustee	111	500	75 00
T F Cronise, Trustee	112	500	75 00
T F Cronise, Trustee	113	200	30 00
T F Cronise, Trustee	114	200	30 00
T F Cronise, Trustee	115	200	30 00
T F Cronise, Trustee	116	200	30 00
T F Cronlee, Trustee	117	200	30 00
T F Cronise, Trustee	118	100	15 00
T F Cronise, Trustee	119	100	15 00
T F Cronise, Trustee	120	100	15 00
T F Cronise, Trustee	121	100	15 00
T F Cronise, Trustee	122	100	15 00
T F Cronise, Trustee	123	100	15 00
T F Cronise, Trustee	124	100	15 00
T F Cronise, Trustee	125	100	15 00
T F Cronise, Trustee	126	100	15 00
T F Cronise, Trustee	127	100	15 00
T F Cronise, Trustee	128	100	15 00
T F Cronise, Trustee	129	100	15 00
T F Cronise, Trustee	130	100	15 00
T F Cronise, Trustee	131	100	15 00
T F Cronise, Trustee	132	100	15 00
T F Cronise, Trustee	133	100	15 00
T F Cronise, Trustee	134	100	15 00
T F Cronise, Trustee	135	100	15 00
T F Cronise, Trustee	136	100	15 00
T F Cronise, Trustee	137	100	15 00
T F Cronise, Trustee	138	50	7 50
T F Cronise, Trustee	139	50	7 50
T F Cronise, Trustee	140	50	7 50
T F Cronise, Trustee	141	50	7 50
T F Cronise, Trustee	142	50	7 50
T F Cronise, Trustee	143	50	7 50
T F Cronise, Trustee	144	50	7 50
T F Cronise, Trustee	145	50	7 50
T F Cronise, Trustee	146	50	7 50
T F Cronise, Trustee	147	50	7 50
T F Cronise, Trustee	148	50	7 50
T F Cronise, Trustee	149	50	7 50
T F Cronise, Trustee	150	50	7 50
T F Cronise, Trustee	151	50	7 50
T F Cronise, Trustee	152	50	7 50
T F Cronise, Trustee	153	50	7 50
T F Cronise, Trustee,	154	50	7 50
T F Cronise, Trustee	155	50	7 50
T F Cronise, Trustee	156	50	7 50
T F Cronise, Trustee	157	50	7 50
T F Cronise, Trustee	172	100	15 00
T F Cronise, Trustee	173	100	15 00
A C Peachy	52	3000	450 00
A C Peachy	53	1000	150 00
J H Crossman	74	200	30 00
J D Minor	11	100	15 00
M S Thompson	12	100	15 00
J J Lyun	13	100	15 00
C W Carter	14	100	15 00
M S Bonnifield	15	50	7 50
M S Bonnifield	17	50	7 50
T J Poultrer, Trustee	28	500	75 00
T J Poulterer, Trustee	29	500	75 00
T J Poulterer, Trustee	30	500	75 00
T J Poulterer, Trustee	32	500	75 00
T J Poulterer, Trustee	33	500	75 00
T J Poulterer, Trustee	34	500	75 00
T J Poulterer, Trustee	35	500	75 00
T J Poulterer, Trustee	36	500	75 00
T J Poulterer, Trustee	37	500	75 00
T J Poulterer, Trustee	38	500	75 00
T J Poulterer, Trustee	39	500	75 00
T J Poulterer, Trustee	40	500	75 00
T J Poulterer, Trustee	41	500	75 00
T J Poulterer, Trustee	42	500	75 00
T J Poulterer, Trustee	43	500	75 00
T J Poulterer, Trustee	44	500	75 00
T J Poulterer, Trustee	45	500	75 00
T J Poulterer, Trustee	47	500	75 00
T J Poulterer, Trustee	48	500	75 00
T J Poulterer, Trustee	49	500	75 00
T J Poulterer, Trustee	50	500	75 00
T J Poulterer, Trustee	51	500	75 00
T J Poulterer, Trustee	75	500	75 00
T J Poulterer, Trustee	76	200	30 00
T J Poulterer, Trustee	77	200	30 00
T J Poulterer, Trustee	78	100	15 00
T J Poulterer, Trustee	79	100	15 00
T J Poulterer, Trustee	80	100	15 00
T J Poulterer, Trustee	81	100	15 00
T J Poulterer, Trustee	82	100	15 00
T J Poulterer, Trustee	83	100	15 00
T J Poulterer, Trustee	84	50	7 50
T J Poulterer, Trustee	86	50	7 50
T J Poulterer, Trustee	87	50	7 50
T J Poulterer, Trustee	88	50	7 50
T J Poulterer, Trustee	89	50	7 50
T J Poulterer, Trustee	91	50	7 50
T J Poulterer, Trustee	93	25	3 75
T J Poulterer, Trustee	95	25	3 75
T J Poulterer, Trustee	96	25	3 75
T J Poulterer, Trustee	109	25	3 75
T J Poulterer, Trustee	110	25	3 75
T J Poulterer, Trustee	169	100	15 00
T J Poulterer, Trustee	170	100	15 00
T J Poulterer, Trustee	171	100	15 00
J Clem Uhler, Trustee	54	500	75 00
J Clem Uhler, Trustee	56	500	75 00
J Clem Uhler, Trustee	57	500	75 00
J Clem Uhler, Trustee	58	500	75 00
J Clem Uhler, Trustee	59	200	30 00
J Clem Uhler, Trustee	60	100	15 00
J Clem Uhler, Trustee	61	100	15 00
J Clem Uhler, Trustee	62	100	15 00
J Clem Uhler, Trustee	63	100	15 00
J Clem Uhler, Trustee	64	100	15 00
J Clem Uhler, Trustee	65	100	15 00
J Clem Uhler, Trustee	66	100	15 00
J Clem Uhler, Trustee	67	100	15 00
J Clem Uhler, Trustee	68	50	7 50
J Clem Uhler, Trustee	69	50	7 50
J Clem Uhler, Trustee	70	50	7 50
J Clem Uhler, Trustee	71	50	7 50
J Clem Uhler, Trustee	72	50	7 50
J Clem Uhler, Trustee	73	50	7 50
J Clem Uhler, Trustee	180	500	75 00
J Clem Uhler, Trustee	181	500	75 00
J Clem Uhler, Trustee	182	500	75 00
J Clem Uhler, Trustee	183	500	75 00
J Clem Uhler, Trustee	184	100	15 00
J Clem Uhler, Trustee	185	100	15 00
J Clem Uhler, Trustee	186	100	15 00
J Clem Uhler, Trustee	187	100	15 00
J Clem Uhler, Trustee	188	100	15 00
J Clem Uhler, Trustee	189	100	15 00
J Clem Uhler, Trustee	190	100	15 00
J Clem Uhler, Trustee	191	100	15 00
J Clem Uhler, Trustee	192	100	15 00
J Clem Uhler, Trustee	193	100	15 00
J Clem Uhler, Trustee	194	100	15 00
J Clem Uhler, Trustee	195	100	15 00
J Clem Uhler, Trustee	196	100	15 00
J Clem Uhler, Trustee	197	100	15 00
J Clem Uhler, Trustee	198	100	15 00
J Clem Uhler, Trustee	199	50	7 50
J Clem Uhler, Trustee	200	50	7 50
J Clem Uhler, Trustee	201	50	7 50
J Clem Uhler, Trustee	202	50	7 50
J Clem Uhler, Trustee	203	50	7 50
J Clem Uhler, Trustee	204	50	7 50
J Clem Uhler, Trustee	205	50	7 50
J Clem Uhler, Trustee	206	50	7 50
J Clem Uhler, Trustee	207	50	7 50
J Clem Uhler, Trustee	208	50	7 50
L L Robinson	210	500	75 00

And in accordance with law, and an order of the Board of Trustees, made on the 19th day of June, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, No. 409 California street, San Francisco, California, on the 20th day of August, 1872, at the hour of 12 o'clock, M., of said dey, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

T. F. CRONISE, Secretary.

Office, 409 California Street, San Francisco, California.

At a meeting of the Board of Trustees held this day, the above sale was postponed to Monday, the 16th day of September, 1872, at the same place and hour.

T. F. CRONISE, Secretary.

San Francisco, Cal., August 19, 1872.

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The attention of Teamsters, Contractors and others, is called to the very superior AXLE GREASE manufactured by

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As any of the inferior compounds now being forced upon the market by unprincipled imitators, who deceive and defraud the consumer.

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2 to 10 Horse Power.

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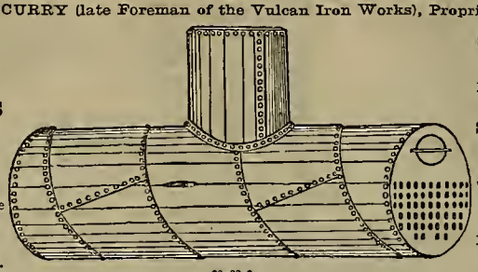

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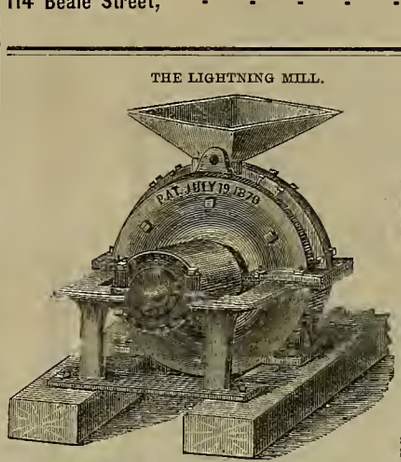

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Patent Bone Mills and Crushers.

For Grinding Bones, Rock, Quartz, and all hard substances; also, Corn, Wheat, Oats, Barley, Coffee, Spices, etc.

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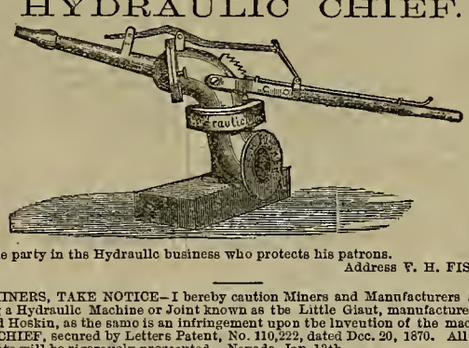
IS THE

Cheapest and Best Hydraulic Machine in use.

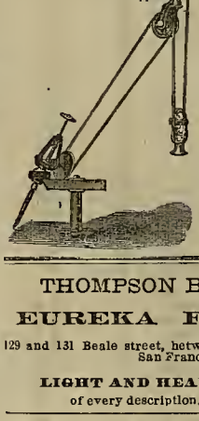


MACHINES Manufactured TO ORDER, to throw from One to an eight-inch STREAM.

This only reliable party in the Hydraulic business who protects his patrons.

9v23-tf Address F. H. FISHER, Nevada, Cal.

HYDRAULIC MINERS, TAKE NOTICE—I hereby caution Miners and Manufacturers against making, buying, selling or using a Hydraulic Machine or Joint known as the Little Giant, manufactured and sold by R. R. & J. Craig and Richard Hoskin, as the same is an infringement upon the invention of the machine known as FISHER'S HYDRAULIC CHIEF, secured by Letters Patent, No. 110,222, dated Dec. 20, 1870. All parties participating in such infringements will be rigorously prosecuted. Nevada, Jan. 13th. F. H. FISHER.



PORTABLE

DRILLING MACHINES,

THORNE & DE HAVEN,

Twenty-third and Cherry Streets, Philadelphia.

These machines can be placed with as much facility as a ratchet brace, and can be used in any position, at any distance, and in any direction from the power.

The No. 1 is capable of drilling up to 1¼ inches in diameter; the No. 2 up to 1¾ inches; and the No. 3 up to 2½ inches, and boring up to 4 inches.

Send for Circulars and Photographs.

2v25-3m

THOMPSON BROTHERS,

EUREKA FOUNDRY,

129 and 131 Beale street, between Mission and Howard, San Francisco.

LIGHT AND HEAVY CASTINGS,

of every description. manufactured 24v16qr

Miners' Foundry and Machine Works,

CO-OPERATIVE,

first Street, bet. Howard and Folsom, SAN FRANCISCO.

Machinery and Castings of all kinds.

SAN FRANCISCO

SCREW BOLT WORKS,

PHELPS BROTHERS, Proprietors,

MANUFACTURERS OF ALL KINDS OF

Machine Bolts, Bridge Bolts, and Ship or Band Bolts.

13 and 15 Drumm Street, San Francisco. 4v24ly

CALDWELL'S

Improved Stop Governor,

Manufactured at the CYCLOPS MACHINE WORKS, 113 and 115 Beale street, San Francisco.

8v24-3m WM. CALDWELL.

H. J. BOOTH & CO.,

UNION IRON WORKS,

(The Oldest and most Extensive Foundry on the Pacific Coast).

Cor. First and Mission Sts.,

SAN FRANCISCO.

Marine, Locomotive and Stationary Engines Quartz Crushing and Amalgamating Machines, Mill Irons and Brass and Iron Castings, of every description, made to order.

Steamboat Repairing, Boiler Making, Turning and Finishing,

EXECUTED WITH DISPATCH.

Beet Sugar Machinery complete in every part—made a specialty.

OIL MACHINERY.

A complete set of Machinery of our own design and patent for extracting oil from Castor Bean, dispensing with Hair Cloth. Also Machinery for Flax Seed Oil, Mustard Seed Oil, and Sun Flower Seed Oil.

MARBLE MACHINERY

For sawing Marble of any thickness or size.

Irrigating Pumps. Steam Pumps.

Plans, Estimates, and Advice promptly supplied.

H. J. BOOTH. GEO. W. PRESCOTT. IRVING M. SCOTT

4v24-1yslamr

THE RISDON

Iron and Locomotive Works.

INCORPORATED.....APRIL 30, 1868.
CAPITAL.....$1,000,000.

LOCATION OF WORKS:

Corner of Beale and Howard Streets,

SAN FRANCISCO.

Manufacturers of Steam Engines, Quartz and Flour Mill Machinery, Steam Boilers (Marine, Locomotive and Stationary), Marine Engines (High and Low Pressure). All kinds of light and heavy Castings at lowest prices. Cams and Tappets, with chilled faces, guaranteed 40 per cent. more durable than ordinary iron.

Directors:

Joseph Moore, O. J. Brenham, C. E. McLane,
Wm. Norris, Wm. H. Taylor, Lloyd Tevis,
James D. Walker.

WM. H. TAYLOR.....President.
JOSEPH MOORE..Vice-President and Superintendent.
LEWIS R. MEAD.....Secretary.

24v17-oy

GEO. W. PRESCOTT. C. W. SCHEIDEL. W. D. ECKART.

PRESCOTT, SCHEIDELL & CO.,

MARYSVILLE FOUNDRY.

Corner of B and Fourth streets, Marysville, Cal.

MANUFACTURERS OF

STEAM ENGINES,

STATIONARY AND PORTABLE

SAW AND GRIST MILLS,

Hydraulic Machinery,

Quartz Crushing and Amalgamating Machinery

Of every description, constantly on hand.

Plans and estimates furnished upon application. Repairs upon all kinds of Machinery promptly made, and at moderate charges.

Having unrivalled facilities, we are prepared to make to order, at short notice, anything required in our line.

Specimens of our work may be seen in all the mining regions on this coast.

OCCIDENTAL FOUNDRY,

137 and 139 First st., near the Gas Works, San Francisco.

STEIGER & BOLAND,

IRON FOUNDERS.

IRON CASTINGS of all descriptions at short notice.

NOTICE.—Particular attention paid to the making of Superior Shoes and Dies. 3v24-3m

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CALIFORNIA BRASS FOUNDRY,

No. 125 First street, opposite Minna,

SAN FRANCISCO.

ALL KINDS of Brass, Composition, Zinc, and Babbitt Meta Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch

☞ PRICES MODERATE. ☜

J. H. WEED. V. KINGWELL.

Notice is hereby given, that the copartnership heretofore existing between A. J. Severance, Charles W. Randall and J. Gus. Burt, under the firm name of "Severance, Holt & Co.," is this day dissolved by mutual consent. A. J. Severance, having purchased all the interest of his late partners, will continue the business of manufacturing and selling Diamond Drills, as before, under the style of A. J. Severance & Co.

Dated San Francisco, Nov. 24, 1871.

Office, 315 California street. A. J. SEVERANCE,
CHAS. H. RANDALL.
22-v23-4f J. GUS. BURT.

THEODORE KALLENBERG,

MACHINIST,

and Maker of Models for Inventors. All kinds of Dies Stamps and Punches made. Also, all kinds of Small Gears Cut.

Repairing done on very Reasonable Terms and in the best manner. No. 32 Fremont street, S. F. 19v23-3m

Machinery.

POWER, TAINTER & CO.,

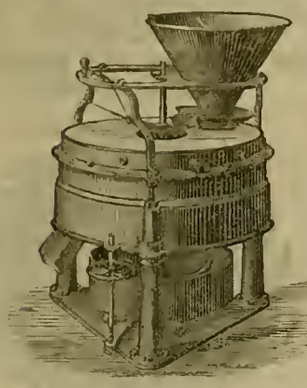
MANUFACTURERS OF

WOOD-WORKING MACHINERY.

300 Chestnut street, (West end Chestnut street Bridge) PHILADELPHIA.

☞ Woodworth Planers a specialty. 4v25-3m

MILL STONES.



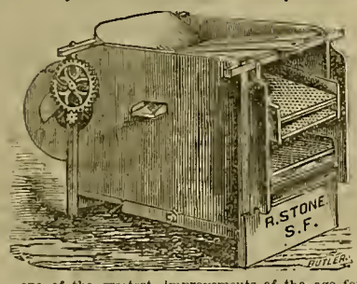
Portable Mills, Eureka Smut Machines Bran Dusters, Dufour & Co.'s Celebrated Dutch Anchor Bolting Cloths, and General Mill Furnishing.

TRAVIS & WAGNER,

18v24-3m 41 First street, San Francisco.

THE PATENT

Novelty Mill and Grain Separator



one of the greatest improvements of the age for cleaning and separating Grain, while it combines all the essential qualities of a first-class Fanning Mill. It also far excels anything that has been invented for the separation of Grain. It has been thoroughly tested on all the different kinds of mixed Grain. It takes out Mustard, Grass Seeds, Barley and Oats, and makes two distinct qualities of wheat if desired.

For further information apply to

R. STONE,

26v3 422 Battery street, San Francisco.

Varney's Patent Amalgamator.

These Machines Stand Unrivaled.

For rapidity pulverizing and amalgamating ores, they have no equal. No effort has been, or will be spared, to have them constructed in the most perfect manner and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows.

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces.—Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Setlers made on the same principle excel all others They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill-men are invited to examine these pans and setlers for themselves, at the office, 229 Fremont Street, San Francisco.

IMPORTANT TO MINERS AND MILL MEN.

Silver-Plated Copper Amalgamating Plates, for Saving Gold.

Of all sizes and in any quantity, furnished to order. Full instructions sent for operating.

Particular attention given to plating goods for Builders, Plumbers, etc. Hotel and Restaurant work re-plated.

SAN FRANCISCO GOLD AND SILVER PLATING WORKS, 655 Mission street, San Francisco.

2v25-3m E. G. DENNISTON, Proprietor.

California File Manuf'g Co.

Potrero, Solano street, bet. Tennessee and Minnesota streets, SAN FRANCISCO.

Manufacturers of New Files.

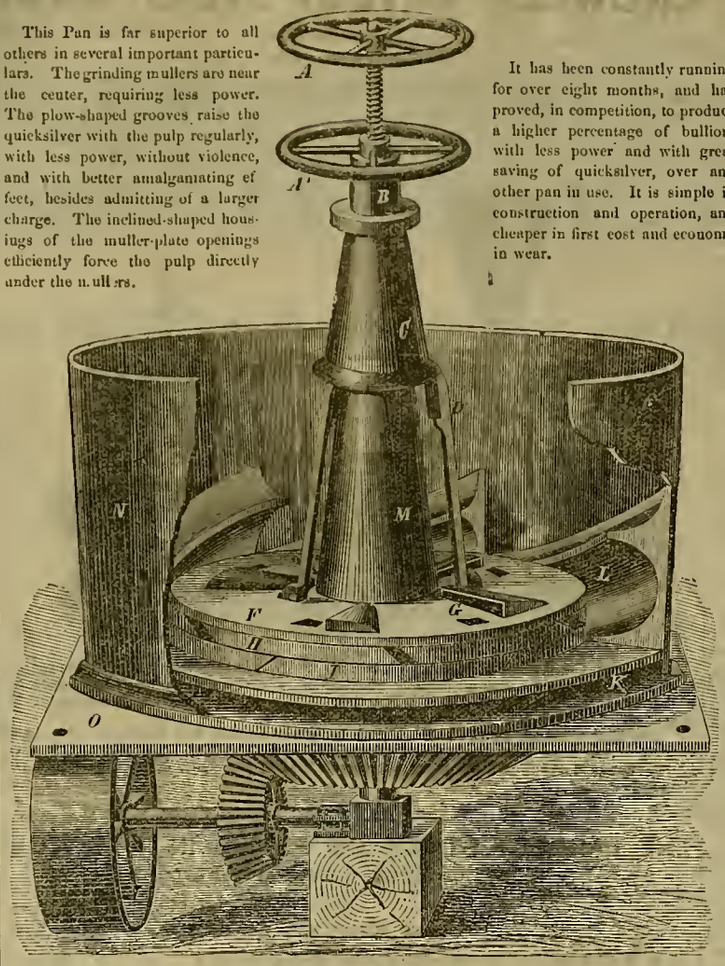
Old Files re-cut and warranted equal to new.

REAPER AND MOWER SECTIONS, BARS AND KNIVES COMPLETE,

at a saving of 50 per cent. Orders from the country promptly attended to. 9v19-by

STEVENSON'S PATENT MOULD BOARD AMALGAMATING PAN.

This Pan is far superior to all others in several important particulars. The grinding mullers are near the center, requiring less power. The plow-shaped grooves raise the quicksilver with the pulp regularly, with less power, without violence, and with better amalgamating effect, besides admitting of a larger charge. The inclined-shaped housings of the muller-plate openings efficiently force the pulp directly under the mullers.



It has been constantly running for over eight months, and has proved, in competition, to produce a higher percentage of bullion, with less power and with great saving of quicksilver, over any other pan in use. It is simple in construction and operation, and cheaper in first cost and economy in wear.

Manufactured at the Golden State Iron Works (Co-operative). 19 First street, S. F.

Where it can be examined and further particulars be learned; or persons may apply to the inventor and patentee, Mr. C. C. STEVENSON, at the Douglas Mine, GOLD HILL, STATE OF NEVADA, where the Pans have long been in constant operation. 15v20-1mr,1amtf

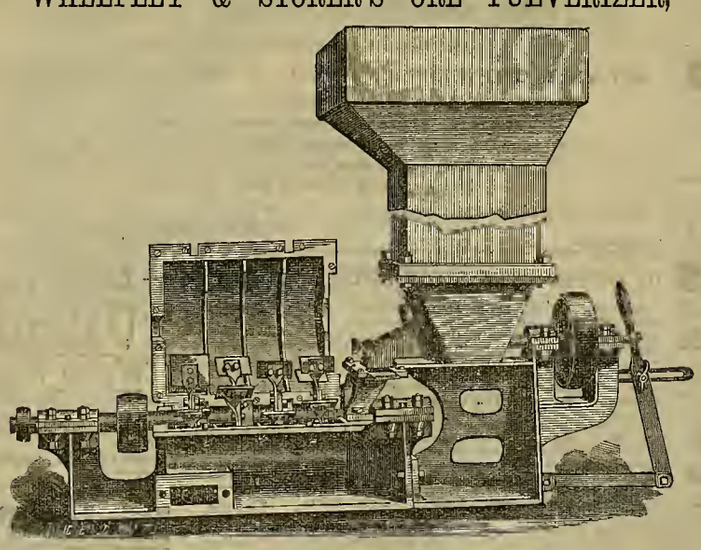
MINING AND HOISTING ROPES. ROUND BELTING.

FULLED RAWHIDE BELTING AND LACING,

The best article in the market. Full Stock of 12 inches wide and less on hand. All sizes made by

H. ROYER, - - - 437 BRANNAN STREET, S. F.

WHELPLEY & STORER'S ORE PULVERIZER,



For Reducing Ores to Fine Powder.

May be seen in practical operation on Main street, between Howard and Folsom.

This Machinery has been adopted by nearly all the Eastern reduction works for reducing ores.

Parties purchasing machinery will find it for their interest to examine this before purchasing elsewhere.

GEO. D. WYMAN, Agent Pacific Coast.

OFFICE—430 Montgomery street, 9v25-3m

Metallurgy and Ores.

RODGERS, MEYER & CO.,

COMMISSION MERCHANTS,

ADVANCES MADE

On all kinds of Ores, and particular attention PAID TO

CONSIGNMENTS OF GOODS.

4v16 3m

LOUIS FALKENAU,

STATE ASSAYER,

Analytical and Consulting Chemist,

421 Montgomery St. up stairs.

Particular attention given to the Analysis of Ores, Minerals, Metallurgical Products, Mineral Waters, Soils, Commercial Articles, Etc.

One or two pupils can receive theoretical and practical instruction in Assaying, Analysis, or any particular branch of Chemistry at the laboratory. 11v21-3m

G. W. STRONG. W. L. STRONG

C. W. STRONG & CO.,

Metallurgical Works,

No. 10 Stevenson Street, near First, SAN FRANCISCO

We purchase Ores, Bullion, etc. Ores worked Tests made with care. Also, Assays of Gold, Silver Copper, Lead, Tin and other Metals. 23v22tf

LEOPOLD KUH,

(Formerly of the U. S. Branch Mint, S. F.)

Assayer and Metallurgical CHEMIST,

No. 611 Commercial Street,

(Opposite the U. S. Branch Mint,

SAN FRANCISCO, CAL. 7v21-3m

CALIFORNIA ASSAY OFFICE

No. 512 CALIFORNIA STREET,

One Door West of Montgomery.....SAN FRANCISCO.

J. A. MARS, Assayer.

☞ Analysis of Ores, Mineral Waters, etc. 10v20

Richardson & Co., Copper Ore Wharves, SWANSEA.

RICHARDSON & Co. have been for thirty years established in Swansea as Agents for the preparation, Sampling, Assaying, and Sale of Copper, Silver, Gold, Lead, Zinc, and all other Ores and Metals, for which they have extensive Warehouses and Wharves under cover, 1,200 feet of Quay Frontage within the Floating Dock, and the most complete Machinery and Appliances. They are also prepared to make advances against Ores in anticipation of realization, and to guarantee all payments when required. 17v24-1y

PLATINUM

Vessels, Apparatus, Sheet, Wire, Etc., Etc.

For all Laboratory and Manufacturing Purposes

H. M RAYNOR,

25 Bond street, New York.

Platinum Scrap and Ors purchased. 22v18

JOHN TAYLOR & CO.,

IMPORTERS OF AND DEALERS IN

ASSAYERS' MATERIALS,

Chemical Apparatus and Chemicals,

Druggists' Glassware and Sundries,

PHOTOGRAPHIC GOODS, ETC.,

512 and 514 Washington street, SAN FRANCISCO.

We would call the special attention of Assayers, Chemists, Mining Companies, Milling Companies, Prospectors, etc., to our large and well adapted stock of

ASSAYERS' MATERIALS

—AND—

Chemical Apparatus,

Having been engaged in furnishing these supplies since the first discovery of mines on the Pacific Coast.

☞ Our Gold and Silver Tables, showing the value per ounce Troy at different degrees of fineness, and valuable tables for computation of assays in Grains and Grammes, will be sent free upon application.

7v25-tf JOHN TAYLOR & CO.

NELSON & DOBLE,

AGENTS FOR

Thomas Firth & Sons' Cast Steel.

MANUFACTURERS OF

Sledges, Hammers, Stone Cutters', Blacksmiths' and Horse-Shoers' Tools.

13 and 15 Fremont street, near Market, San Francisco. 10v14qr

Superior Safety Fuse

FOR BLASTING.

Cotton, Hemp, Singls and Doubls Taps manufactured and constantly on hand. Send for sample and prices. Address

7v25-1m F. M. ALFORD, Avon, Conn.

☞ BUY BARBER'S BIT BRACE.

PERSONAL.—We were favored with a visit at noon to-day from Mr. L. P. McCarty, special corresponding agent of the MINING AND SCIENTIFIC PRESS, San Francisco. He has been out in the Pioche region writing full and correct descriptive letters of that district, its mines, and general resources, which have been published in the PRESS. He is now visiting the Comstock range for the same purpose, and will go through all the mines. We doubt not that all possible facilities and assistance will be given him He is also canvassing for the PRESS, which is the best mining and mechanical paper on the coast—a paper that most everybody can subscribe for with profit.—*Gold Hill News, Sept. 10th.*

MINING AND SCIENTIFIC PRESS.—Volume 24 of this excellent mining journal was completed the 29th inst. Hereafter the title of the paper will be MINING AND SCIENTIFIC PRESS.—*White Pine News, Aug. 6th.*

THE PACIFIC RURAL PRESS.—This excellent agricultural paper has entered on its fourth volume. We give it preference over all other papers of its character that circulate on the coast. Its editors know the wants of the husbandmen of this coast, and what our varied climates and soils are adapted to, and furnish the very information desired. In this it is incomparably more valuable than all the eastern publications combined. We wish the RURAL PRESS encouraged and increased support. The man that can take but one agricultural paper should be sure that that one is the RURAL PRESS. —*Auburn Herald.*

"Most Valuable Paper."

VIRGINIA CITY, M. T., August 25th, 1872.

MESSRS. WIESTER & Co., S. F.—Please send me by mail one of your Patent Vegetable Cutters. I see your advertisement in the PACIFIC RURAL PRESS, the most valuable paper I ever read.

Yours truly, JNO. S. BARTRUPP.

C. P. R. R.

COMMENCING

Monday, August 26th, 1872.

And until further notice, Trains and Boats will

LEAVE SAN FRANCISCO.

7.00 A. M. Atlantic Express Train for Sacramento, Marysville, Redding, Colfax, Reno, Ogden and Omaha.

7.30 A. M. Steamer New World (from Broadway Wharf) —Connecting at Vallejo with Trains of California Pacific Railroad.

8.00 A. M. Excursion Boat (Sundays only) from Broadway Wharf, connecting with Special Train of S. F. & N. P. R. R. for Cloverdale and intermediate points, returning to San Francisco by 7 P. M.

2.00 P. M.* Stockton Steamer (from Brodway Wharf), touching at Vallejo, Benicia, and Landings on the San Joaquin river.

2.00 P. M.* Steamer Antelope, from Broadway Wharf, connecting at Donahue with Trains of S. F. and North Pacific Railroad.

3.00 P. M. San Jose Passenger Train, stopping at all way Stations.

4.00 P. M.* Sacramento Steamer (from Broadway Wharf). Touching at Vallejo, Benicia, and Landings on the Sacramento river.

4.00 P. M.* Passenger Train for Lathrop, Merced, Visalia, Tipton and Los Angeles, Stockton and Sacramento.

6.30 P. M. Overland Emigrant Train, Through Freight and Accommodation.

OAKLAND BRANCH.—LEAVE SAN FRANCISCO, 7 00 8 10, 9 2 , 10 10 and 11 20 a. m., 12 10, 1 50, 3 00, 4 00, 5 15, 6 30, 8 15 9,20 and *11 30 p. m. (9 20, 11 20 and 3 00 to Oakland only).

LEAVE BROOKLYN (for San Francisco), *5 30, 6 40, 7 50, 9 00 and 11 00 a. m., 1 30, 2 40, 4 55, 6 10, 7,55 and 10 10 p. m.

LEAVE OAKLAND, *5 40, 6 50, 8 00, 9 10, 10 00, and 11 10 a. m., 12 00, 1 40, 2 50, 3 50, 5 05, 6 20, 8.05 and 10 20 p. m.

ALAMEDA BRANCH.—LEAVE SAN FRANCISCO, 7 20, 9 00, and 11 15 a. m., 1 30, 4 00, 5 30, and 7 00 p. m. (7 20, 11 15, and 5 30 to Fruit Vale only).

LEAVE HAYWARDS (for San Francisco), *3 45, 7 00 and 10 45 a. m., and 3 30 p. m.

LEAVE FRUIT VALE, *4 40, 7 35, 9 00 and 11 20 a. m., 1 30, 4 05 and 5 30 p. m. *Except Sundays.

T. H. GOODMAN, Gen'l Pass'r and Ticket Agt. A. N. TOWNE, Gen'l Supt.

Improved Band Saws,

WOODWORTH PLANERS,

Molding Machines, Mortisers, and every description of Wood-working Machinery and Planing Mill Supplies. Address

TREADWELL & CO.,

Machinery Depot,

San Francisco.

9v25eow

C. J. COLLINS,

HATTER,

No. 321 Montgomery street, near California street, under I. O. O. F. Hall.

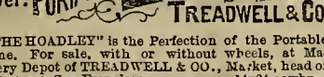
Masonic, Army and Navy Goods a Specialty

22v24-3m

From 3 to 30 Horse Power. ALL SIZES **Hoadley's PORTABLE Engines** Sole Agents TREADWELL & Co

"THE HOADLEY" is the Perfection of the Portable Engine. For sale, with or without wheels, at Machinery Depot of TREADWELL & CO., Market, head of Front street, San Francisco. 14v24 eowhp

MORSE'S PATENT.



BOILER TUBE CLEANER.

The Neatest and Cheapest thing in the market for cleaning Boiler Tubes For sale by TREADWELL & CO., Machinery and Supply Depot, San Francisco.

9v25eow

WALTER TURNBULL. JAMES HAY SMITH.

TURNBULL & SMITH,

Commission Stock Brokers,

Union Insurance Co.'s Building, 418 California Street, (Up Stairs,) SAN FRANCISCO.

WALTER TURNBULL, Member S. F. Stock & Ex. Board.

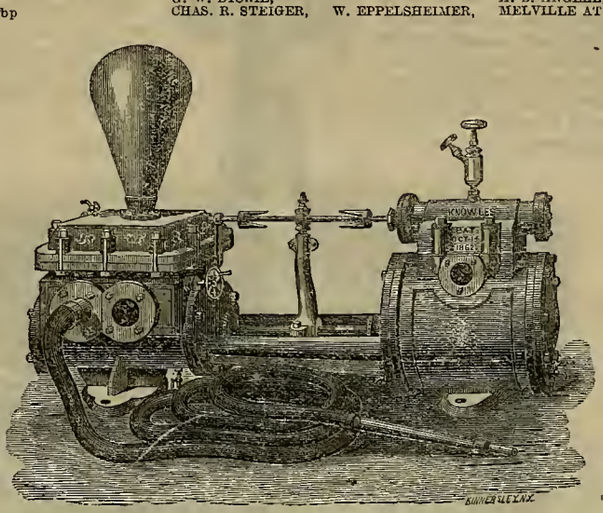
KNOWLES' PATENT STEAM PUMP.

Extract from Official Report of Mechanics' Institute Fair of San Francisco, 1871.

"In the foregoing trials it appears that the most efficient Pump on exhibition is the KNOWLES. The workmanship on this Pump is also very good. We would therefore recommend that this Pump receive a Silver Medal. (Diplomn awarded). Signed by the Committee :

G. W. DICKIE, CHAS. R. STEIGER, W. EPPELSHEIMER, H. B. ANGELL, MELVILLE ATWOOD."

v113-awbp



It has no Cranks or Fly-Wheel, and has no dead points where it will stop, consequently it is always ready to start without using a starting-bar, and does not require hand-work to get it past the center. Will always start when the steam cylinder is filled with cold water of condensation.

The trial of Steam Pumps at the Eighth Industrial Fair in San Francisco, by a Committee of Five of the most thoroughly practical mechanics on this coast, showed the Knowles Pump to lose but 11½ per cent., while others lost as high as 40 per cent., showing great difference in economy.

WE BUILD AND HAVE CONSTANTLY ON HAND

THE LARGEST STOCK OF PUMPS IN THE WORLD,

And for Every Conceivable Purpose.

A. L. FISH, Agent.

No 9 First Street, San Francisco, Cal.

P. S.—All kinds of new and second-hand Machines on hand. 3v24-eow-bp

THE TRUTH!

A. L. FISH, Agent Knowles' Steam Pump—Dear Sir: In answer to your inquiries, we state that the highest award for Steam Pumps at the Eighth or last Mechanics' Fair in San Francisco, was a *First Premium* and Diploma, awarded to the Knowles' Patent Steam Pump, as published in the Official List September 23d, 1871.

A. S. HALLIDIE, President Board of Managers.

W. H. WILLIAMS, Sec'y Board of Managers Eighth Industrial Exhibition, M. I.

BLAKE'S PATENT STEAM PUMP.

SALEM, Oregon, January 16th, 1872.

MESSRS. TREADWELL & CO., San Francisco—Gentlemen: In answer to your query regarding the working of the large Blake Steam Pump (20—12—24), our company purchased of you, we would say in all sincerity that the Pump *has exceeded our expectations.* It has been in use since the 27th of September, 1871, and has thus far given the most perfect satisfaction. It does its work with ease, does not get out of order, and requires but little or no attention to run it. It is *simple, durable,* and *perfect* in its construction. We have found it entirely satisfactory, and just the Pump in every respect needed for our work.

Yours, respectfully, W. F. BOOTHY, Pres't Salem Water Works.

All sizes, for Mining, Tank and other purposes, for sale at TREADWELL & CO.'S Machinery Depot, San Francisco, where may be seen the largest stock of **Mining, Mechanical** and **Mill,** and **Agricultural Machinery,** *Portable and Hoisting Engines, Steam Pumps, Hardware,* etc., to be found in the country. 8v25eow-bp

THE GIANT POWDER COMPANY

Are now manufacturing besides the famous regular

GIANT POWDER, A NO. 2 GIANT POWDER,

Somewhat slower in its Explosion, which we recommend for

BANK BLASTING, COAL MINES,

AND FOR ALL SUCH WORK WHERE THE ROCK IS NOT VERY HARD

It is fully as safe as the other and evolves neither smoke nor noxions fumes when exploded.

Price. 50 Cents per Pound.

The sales of both grades increase very fast, which is the best proof of their superiority over other explosives.

BANDMANN, NIELSEN & CO., General Agents, No. 210 Front Street.

20v22-3m16p

TO PARTIES USING STEAM BOILERS.

SIMMONS' DIRT, LIME AND SEDIMENT EXTRACTOR.—Attention is called to the above patent for the prevention of the accumulation of a crust in cylindrical boilers, thereby saving in the wear and tear of boilers and gauge-cocks, in the consumption of fuel, and effectually obviating the necessity of cleansing boilers, by its action, removing old scales and preventing the formation of new ones. This invention has been fully tried, and has stood the test as well in the Atlantic States as in California. The principle involved is purely mechanical, nothing with a chemical action or corrosive of the boilers being used with the pan to effect the object to be attained. We are permitted to refer to H. J. Booth & Co., of the Union Iron Works, and Horace Davis & Co., of the Golden Gate Flouring Mills, who have used the patent in their establishments. Persons ordering pans should state size of hand-hole.

Address, for circular and information, GEORGE H. TAY & CO., 614, 616 and 618 Battery street, San Francisco. J. A. HAUGH, Agent for Pacific Coast. se7-1m

FOR SALE.

A half interest in a valuable patent for an improved Circular Saw Head Block. The invention is now in use in a large number of mills on this coast, and can be profitably handled by an energetic man. Parties wishing to purchase County, State or mill rights, can do so by addressing SAMUEL FORSYTHE, San Francisco, California. se14-4w

THE "LEFFEL" TURBINE Water Wheels

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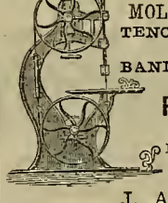

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SAN FRANCISCO, SATURDAY, SEPTEMBER 21, 1872.

VOLUME XXV. Number 12.

The Goodwin Mining Pump.

Our illustration shows the new mining pump, manufactured by Goodwin & West of this city, as operated in a deep mine. It also shows the method of applying power by means of wire rope and adjustable grip pulleys. Pumps for deep mining have received more careful study than for almost any other purpose, and managers of mines, especially deep and wet ones, have more care on their account than any other thing connected with the mine; except, perhaps, the yield of ore. These pumps are arranged in lifts one above the other, in the usual way.

A, represents the pump in an incline (though it is equally as well adapted to vertical shafts) connected with the driving pulley, *B*, of the steam engine, by a wire rope which passes over the extending pulley, *C*. This pulley is supported by a frame which rests on the track, *M*, and can be moved easily on it, so that as the pump is lowered down in the mine this pulley slides forward, obviating the necessity of lengthening the rope each time the pump is lowered, which can be done in a very short time. The pulley, *D*, is for the purpose of tightening the rope after setting the pump, and whenever it may become slack from running. In this manner the rope can always be held at the proper degree of tension, and a pump can be worked in a crooked shaft or in an incline, as well as in a vertical shaft.

But the greatest advantage will be in conveying power along a drift to work a pump at its end when it is advisable to sink a shaft in such localities. It often happens in drifting on a vein when exploring, that it is desirable to sink a shaft or incline at one or more points in the drift; but in wet drifts it cannot be done with the ordinary mining pump without great expense. But with this pump, operated with wire rope, no great difficulty is experienced, and the expense is comparatively light, and when one point is fully explored, it is equally good for testing another. In this manner of applying power, pumps in two or more shafts, at considerable distances apart, can be run by one engine.

Pumps in Hydraulic Mining.

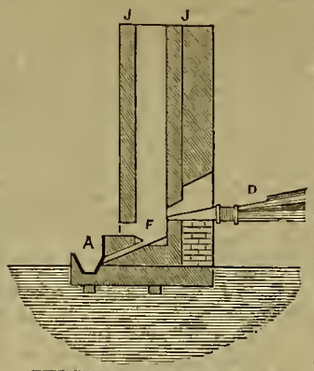
While on this subject it may be well to say something about the applicability of pumps to hydraulic mining, in localities where the requisite fall cannot be obtained.

Hydraulic mining is one of the most important branches of gold mining on this coast. In the hydraulic diggings, acres on acres of soil and gravel, many feet deep, are washed down to the bed-rock; hills, and even mountains, are swept away in a manner resembling the operations of nature more than the work of man.

Where a good head of water can be obtained, there is no process at all comparable to this for the economical separation of gold from sand and gravel. Placers that by the old method of working would not pay "board," will, by the power of falling water, yield fortunes to their owners.

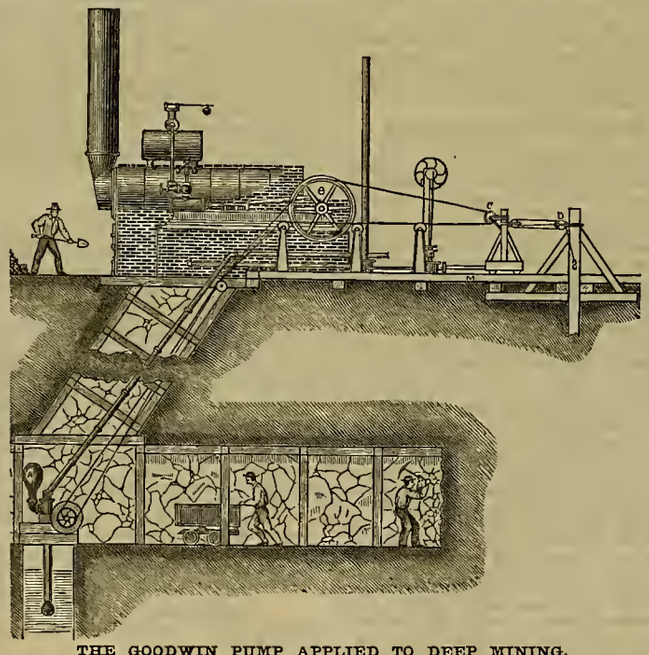
Sometimes extensive flats or plains contain a sufficient amount of gold to pay to "hydraulic," but there is no fall; though water is abundant, the necessary power cannot be had. In other cases, gravel is found on an isolated mountain, with no ground of superior elevation near it. In many such situations the use of a powerful steam engine and pump that would throw from one to four hundred inches of water per minute, with a pressure of one hundred pounds, would enable the miners to work these deposits as effectually as with a fall of two hundred feet. The friction through long pipes is considerable, and a fall of two hundred and forty feet will give only about one hundred and five pounds pressure at the nozzle. Pumps for deep mining have been in use for ages, but their applications to hydraulic mining is in its infancy, and there is a fine field for experiment and improvement in their construction and application.

In the first place, the amount of power exerted by a hydraulic stream is much greater than is generally supposed, and only an accurate calculation will show what it really is. And this power is very uniform. In substituting a pump for a fall, these conditions must be strictly complied with. To insure this, the pump and engines must have a considerable amount of capacity, more than is ordinarily required; and the pump must be strong, not liable to get out of order and throw a stream with an *uniform force*. This last point is of the utmost importance. If the stream is not quite sufficient, either in volume or power, it will not do the work. Though the power and water used are almost as great as in a stream of sufficient force, the effect is not at all in the same ratio.



TIN-SMELTING FURNACE.

In deep mining it has been found advantageous to employ several pumps, one above another, instead of attempting to force the water from the bottom of the mine to the surface at one lift. Though the power is the same or greater in the use of a number of pumps instead of one, the comparatively light strain on each pump is found to be of great advantage. And there is no doubt that an analogous arrangement of pumps, in hydraulic washings, would be found equally as beneficial. By combining three pumps together, one taking the water from another, a pressure of forty pounds imparted by each pump would be equal to one hundred and twenty pounds in the last, or discharging pump, and equal to two hundred and fifty feet of fall, if the conducting pipes are of the ordinary length. Some of the advantages of this system are that the water can be used over again in any place where the water could be collected and pumped back to the forcing-pump. Though there are probably few places where this would be practicable, still in some localities it might be done.


THE GOODWIN PUMP APPLIED TO DEEP MINING.

American pig iron will be exported to Europe within two years.

Tin Mining in Banca.

[Written for the Press by W. Bredemeyer, E. M. D. P.]

Tin appears only either as a sulphide or as a bin-oxide (cassiterite). Tin, as a sulphide, is very rare, but as a bin-oxide it occurs quite frequently, and is found in Chile, Mexico, Brazil, England, Bohemia, Saxony, Spain, Burmah, Malacca and California, but especially in Banca and Billiton. It appears in Banca as stream-tin (black, and sometimes light brown) and as vein-tin. At present the Dutch Government only works the stream-tin in Banca, which is deposited in the valleys in enormous quantities.

The beds are from nine to thirty feet deep, and consist of mud, red clay, blue clay, coarse and fine gravel, and tin. The tin beds are generally from three to twenty-two inches deep, but in some localities still deeper. Kaolin (porcelain earth) appears below the fine gravel, and there is no hope of finding tin below that. To examine the mineral capacity of the valleys, cuts are run across them at about 100 yards apart. Three-inch holes are bored in these cuts from 20 to 25 yards apart; a copper pipe is let in to prevent the sides of the holes from falling in, and an exact quantity of tin ore taken from each hole. The tin extracted from all these different holes is carefully washed and weighed, and a calculation is made as to the probable richness of the valley. Mines are then laid out to be worked during the hot season, which continues eight months. The remaining four months of the year, which form the rainy season, are occupied in smelting.

All of the mines are worked under the superintendence of European mining engineers and foremen, with companies of from sixty to three hundred men. Work on these surface mines is begun from the lower end of the valley. Before commencing operations a dam is made across the valley, and the water drained off by means of ditches which are used in the process of washing. The water from the mines is removed by means of chain-pumps. The gravel from the new mines is disposed of by being thrown back into the old holes.

The treatment of the tin (cassiterite) is very simple. After being washed out, the mineral is taken to be roasted in a reverberatory furnace for the purpose of getting rid of the arsenic and separating the sulphides of iron and copper. The roasted masses are then placed in large tubs of water, where the sulphides of iron and copper dissolve, and the oxides of tin, iron and copper settle down. The separation of the sulphate is performed by evaporation and crystallization. The oxides are exposed for several days to the air, and afterwards worked. Then the oxides are mixed up with charcoal and put in a blast furnace, like those shown in the accompanying cut. This is a vertical cylinder of cast-iron, nine feet high, covered with clay, J J, into which air is blown by means of bellows through the pipe D. In the bottom part, F, the coal oxide is gathered together and attacks the oxide of tin, so that the liquid tin runs with the slag into a trough A, outside the furnace.

From time to time the floating slags are taken off and when the trough is full the vent is opened and the metal runs in a second trough. In this trough the remaining foreign substances are taken off. This is done by taking pieces of wet greenwood, putting them on an iron rod and dipping them in the melted mass. The charring of this green wood produces steam and causes the foreign substances to float so that they are readily taken off. By this method the tin produced in Banca is the best in the market. It is soft, pliable, easily stretched, very clear and of a shining bluish white color, and easily smelted.

The Government supplies the Chinese only with the mining engineer, foreman and furnaces. They have to supply themselves with everything else—tools, chain-pumps, etc. They receive from the Government $5.09 for each hundred pounds of cast tin, so they are enabled to make considerable money when industrious. The clear profit to the Government, while I was in Banca, amounted to about $5,000,000 per annum. The veins of tin are very rich and extensive. The principal ones are in the hills of Merawang, Bockit, Pelawang, Soengie, Sean and Paceo.

Kern County Mines.—Considerable excitement exists in Kern County over rich discoveries recently made there. A rush was made there some years ago when the mines were first found, but as other localities were more remunerative but few people remained there permanently. It seems now however that the mineral resources of the county are more important than was supposed. The recent developments are in the Grizzly Mountain, about five miles from Havilah, in a rough part of the country. A number of rich gold-bearing leads have been discovered, and the hills are now covered with prospectors.

The Agassiz Party.—Professor Agassiz and party took a trip around the bay one day this week on the Government steamer *McPherson*. They visited the fortifications and other points of interest, went a short way outside the heads and spent a very pleasant day. Professor Agassiz expressed himself well pleased with the climate, resources and people of California, and will prolong his stay here as far as a regard for his professional duties at Cambridge will permit.

CORRESPONDENCE.

Notes of Travel in White Pine, Lander and Nye Counties, Nev.

[By our Traveling Correspondent.]

On my return trip from Pioche, Ely district, I visited the following additional mines, at Hsmilton and Eureka.

The Silver Plate Mine

Is locsted one mile north of Hamilton, in White Pine county, and is owned hy four persons, one of whom, Mr. W. T. Flower is Superintendent. This compsny claim 1,000 feet of ledge, situsted on the north and south hreak of Treasure Hill; this claim is heing developed hy drifting into the hill directly on the ore hody. At 75 feet in, (the extent of the present workings) a vein of three feet in thickness can be seen; the first-class ore, mills from $80 to $140 per ton and their second class ore runs from $35 to $45 per ton. This lode runs north and south; at present, working eight men. One quarter of a mile farther west from the Silver Plate, is the

Truckee Mine,

Orgauized under the laws of the State of Nevada, as the Henderson M. & M. Co.; it is owned by some eight parties. It is heing worked under lease hy Messrs. Peck & Root at present writing. There are 1,800 feet in this location; the deposits are similar to thoae on "Treasure Hill," starting from the surface with an immense ore hody; Messrs. Peck & Root are working a force of 10 men on this mine. The ore thus far has averaged them $150 per ton, varying from $120 to $180 per ton, some 6 tons of which was upon their dumps when I visited it.

Secret Canon District.

Secret Cañon is a little valley located abont seven and a half miles southeast of Eureka and is ahout oue-half mile long, hy from one-eighth to one-fourth of a mile wide. This valley or cañon is watered by two fine flowing springs, and wood iu ahundance on the hilisides. A little village is located in the lower end of the valley, called Vanderbilt, containiug some dozen houses; surrounding this valley are some of the finest mines in this section of the country. Some 300 different locations have been made here, many of which have been developed sufficiently to prove them to he valuahle; among the principle oues are those owned by the

Geddes & Bertrand M. M Co.,

An incorporatiou of $4,000,000 capital stock, 40,000 shares. Sam. Geddes, Pres.; L. Bertrand, Geu. Agent, aud E. P. Rsiues, Supt. This corporation claims 1,400 feet of a ledge running N. W. hy S. E. that is heing thoroughly developed. This portion of their numerous locations is known as the "Geddes Nos. 3 and 4," and the "Calico," known as Bertraud No. 3." Upon these ledges three shafts have been sunk, varyiug from thirty to eighty feet in depth. The Calico, upon which the deepest shaft has been sunk, has ruu drifts from three different levels, from sixteen to thirty-five feet east and west; cross-cuts have also been ruu from these drifts, north aud south, proving that they have a body of ore from 25 to 40 feet thick, and continuous from the top down.

This ore is slightly "hase," carrying from three to twelve per cent. lead, and averaging from $90 to $300 per ton in silver. They have at least 250 tons of $300 ore upon their dumps. It is estimated that the ore now on this company's dumps will mill from $115,000 to $120,000. It is further estimated from measurement that they have 10,000 tous of ore in sight; and since visiting the same and going through this miue, looks all that is estimated—it is simply immense. At present they are working vigorously taking out ore. Arrangements have been entered iuto to put up a 10 stamp mill near the mine which will probahly be in operation withiu 90 days. The ore of this company's mines is a soft yellow chloride, aud can be reduced at the rate of three tons to the stamp per day. The Superintendent of this company, Mr. Raines, has beeu in charge of mines in California aud Nevada for the past 14 years. He thoroughly understands the ores of this district, aud is well qualified to fill the responsihle position.

From Eureka to Austin it is 75 miles nearly west. Wm. B. Wilson, Esq., runs a daily line of stages between these two points. Fare, $15; time, 12 hours.

Reese River District.

Austin, the county seat of Lander Co., is located near the centre of the ahove-named district, in lat. 39 deg. 29 min. 30 sec.; long. 117 4 min. west from Greenwich; or long. 40 deg. 40 min. west from Washington. The elevation ahove the sea level is 6,275 ft., about 15 feet higher than the Internatioual Hotel, Virginia City, Nev.

Austiu is situated 95 miles south of Battle Mountain Station, on the C. P. R. R., which place is 522 miles from San Francisco, California. The distance from Battle Mountain to Austin is traveled hy the Battle Mountain line of stages, O. Fuller & Co. proprietors; fare, $15; time, 15 hours. The population of Austiu is ahout 2,000.

Bullion Shipments.

Through the politeness of the gentlemanly agent of Wells Fargo & Co., of this place, Mr. G. H. W. Crockett, I am ahle to give you the entire shipment of hullion from Austin since Jan. 14, 1065:

Year.	Bars.	Weight.	Amount.
1865	....	....	$732,358.18
1866	....	20 676	400,587.07
1867	....	121,527	1,872,264.23
1868	....	....	2,746,948.83
1869	826	84,677	939,835.56
1870	754	80,215	895,888.71
1871	1,252	103,231	1,188,707.31
1872			
Jan.	104	9,253	107,727.86
Feb.	57	4,498	39,258.40
March	184	1,1825	128,656.85
April	121	10,517	133.731.77
May	94	8,732	104,088.49
June	54	5,929	73,740.56
July	51	5,305	74,930.85
Total			$9,485,5?4.25

The mines of this District surrounding Austin are as follows:

Manhattan S. M. Co., (of Nevada)

A New York City incorporation with $387,500 capital stock, in 38,750 shares. H. Augustus Taylor, President; Morgsn L. Ogden, Secretary; and Allen A. Curtis, Superintendent; principal office 113 Broadway, N. Y. City. This company own 72 ledges or locations, situated in Reese River mining district, surrounding the town of Austin, which are developed by 11 inclines, and four principal shafts, the latter varyiug from 300 to 550 feet deep, vertically. The 11 inolines sunk on these ledges vary from 150 feet to 450 feet deep. The ledges of this company (like all others in the district) are small, varying from four inches to 30 inches in thickness, hut average very rich. Steam hoisting works are erected at 10 different points of this company's workings, varying in capacity from 10 to 35 horse-power. The principal part of labor performed on this company's ledges, is done by contract, which is found to he most profitahle in this section. Some 167 men are employed regularly on contract work. This corporation also own a 20-stamp mill, and Stetefeldt Furnace. Their mill and furnace are located in the suburhs of Austin, and are run by a 120-horse power engine, and have a capacity to reduce 20 tons per day. The ores of this company are slightly hase carrying a trace of lead and some copper; the average milling assay of this company's ores is $200 per ton; 30 men find employment at this mill.

The Savannah S. M. Co.

Is owned personally by Wm. Henry Sheat, and superiutended by Capt. M. C. McGlennon. It is located within the snhurbs of Anstin, on the east side. The ahove named company own a number of locations, in close proximity to each other, the principal of which are, the Savannah, W. S. Cole, and W. H. Shcat. The latter is a new location, just struck, A shaft is sunk to a depth of 150 feet, on this locatiou, cutting a ledge 20 inches thiok; at the bottom of this shaft very rich, free milling ore, runniug from $200 to $500 per ton, is found. This ledge pitches to the northeast, at an angle of ahout 45° and runs northwest hy southeast. On the Savannah, some 75 tons of ore have been extracted, yielding an averspe of $389.19 per ton. All of the ahove locations will be worked through the shaft of the W. H. Sheat. Fine hoisting works to he run hy steam, are now on the way from San Francisco, to be put up on this shaft, which will probahly he in working order hy the time this appears in priut; working at present nine men.

The Pacific Mining Company, Limited.

An Euglish incorporation, Capital Stock, 15,000 Shares, par value £7 per share. Principal Office, Austin Friars, Loudon, J.E. Courtenay, President and W. J. Lavington, Secretary. Henry Prideaux, Genl. Supt. of Co.; residing in Austin. This Company's mines are situated on Lander Hill in the City of Anstin, Reese River Mining District. Their mllls are the Mettacom & Empire. The former is situated in San Francisco Cañon five miles north of Austin, and is a ten-stamp mill with a White Rotary furnace, capacity ten tons daily; the latter is in the City of Austin but has not complete machinery. The Pacific Company also own certaiu mining and milling property in Nevada County, California. They are owners of 12 locatious ou different ledges on Lander Hill. The ledges run about 15° North of West and South of East, and dip from 28° to 40° Northeast, and are in a granite formation and true fissnre veins as are all the veins or ledges on Lander Hill, The principal portion of their ledges are worked through the Lane & Fuller shaft helonging to them which is 600 feet in depth, from which there are levels and cross cuts extending as follows: 1,000 feet, 400 feet, 500 feet, 650 feet, 300 feet, &c, &c. These levels and crosscuts intersect the Company's ledges at different points, from wlich large quantities of rich ores are being extracted, the veins varying from 4 to 36 inches in width. The ores are ruby, black snlphnrets and stephanite of silver, carryiug also considerable hase metals. The different classes of ore sent to the mill, assay in silver $60, $150, $400, $900 per ton. There is a goodly quantity on hand hesides that which is heing sent to the mill, and they are also shipping some first-class (high grade) rock to Liverpool.

The machinery at the Lane & Fuller shaft oonsists of two engines, eight and ten inch cylinders, a lathe, sawing machine, and steam pump (Cameron's). One engine is used for hoisting purposes, the other to drive the saw machine and lathe and as a reserve for hoisting. The steam pump is used to force water to the different tanks, and has a fire-engine, having a reservoir containing 2,000 gallons of water to supply it. At the recent fire at the Isabella works it rendered valushle assistsnce in suhduing the flames, saving thereby a large quantity of wood, and could have checked the conflsgration in the start had there been hose sufficient on the spot to reach the long distsnce hetween the works.

The Pacific Co. were not very successful in their operations at the start, but now it ranks among the foremost and is a paying institution which rank it has attsined under the mansgement of its present Superintendent.

Mohawk S. M. Co.,

Not incorporated, hetter known as the Saratoga; owned by C. H. Roberts, Allen A. Curtis and E. S. Samson; C. H. Roberts, Supt. This company claim alocstion of 800 feet, running southeast and northwest, the ore body pitching to the northeast; located adjoining the "Florida" company's mine in this district, and ahout one mile northeast from Austin. This mine is developed by one incline shaft, down 416 feet following the ledge, at an angle of ahout 30°; four different drifts sre run from this shaft to the northwest, varying from 70 to 120 feet, and three drifts are run to the southeast for a distance of about 120 feet each. The ledge averages ahout six inches thick, and pays $500 per ton and upwards; have about 15 tons on their dump at this writing, four tons of which will mill $3,000 per ton; working eight men; hoisting by donkey engine. Next adjoining the Mohawk on the west is the

Lone Star,

A parallel ledge with the above. This mine is owned personally hy Jasper and Joseph O'Neil; the latter mentioned is Supt. These gentlemen claim 600 feet of this location; the ore body runs parralel with the Mohawk, and pitches in the same direction, hut a little steeper, ssy at an angle of ahout 40°. This mine is developed by an incliue shaft, following the pitch of the ledge, to a depth of 200 feet; this is their principal working shaft, but two other inclines are sunk upon this mine for ventilation, oue to a depth of 90 feet and the other ahout 100 feet. It is certainly the best veutilated mine on this hill. From their main working shaft, or iucline, drifts have been run upon the ore hody, both to the northeast and southwest varying from 20 to 300 feet in length. The ore hody averages ahout six inches thick, and the average pay is something over $400 per ton. Hoisting by whim; this mine has no water to contend with; working regularly 15 meu

The South Sonoma Mine

Was located in August, 1863, and is situated in Emigrant Cañon, 1¼ miles north of Austin, on a line with the best mines on Lander Hill, and the Yankee Blade section. It is owned by Julius Sichel, who has developed the same during the past three years hy means of a tunnel 500 feet in length, an incline 200 feet deep, and levels 400 feet in length. The ores in this mine are of a high grade, and milled as high as $1,500 per ton. With proper machinery to follow the ore below the water level, this mine could he made productive of large resnlts with a small outlay of capital.

The S. C. Baker Mine,

Located in 1865, is situated in Marshall Cañon, half a mile south of Austin. It is owned hy A. Nichols and others. The developments made on this mine prove it to he a valuable property, certain to return good interest to the owners, who are developiug the same in an iutelligent manner, by means of an incline, levels, and a donkey engine. The ore worked at the mill produced good results, yielding from $250 to $1,100 per ton. H. P. Jones is Superintendent.

Roberts District,

Located ahout 12 miles south of Cortez, which is about 60 miles northeast of Austin, in Lander Co., Nev. Some 20 locations are taken up in this district, six of which, are developed extensively. The principal of which are, the

Odair, Rising Sun, and Saratoga,

Neither of which are incorporated. They are owned hy Gen. J. R. Williamson and Joseph Wood. Mr. Wood is Superintendent. One of the above mines (the Odair) is developed hy a shaft 50 ft. deep; the other two are heing worked hy open cut; eight men are employed. These ledges run southeast and northwest, and dip to the northeast, at an angle of 45°; the ledge is about 12 ft. thick, between a granite and limestone formation. The ore of these mines assays from $40 to $200 per ton in silver, and from 50 to 72 per cent. lead. The ore at present is sacked and transported on mules and teams to Beowawa, on the C. P. R. R., and from there to your city for smelting. A furnace will shortly be put up at or near these mines by the above parties.

Philadelphia Mining District

Is located in Nye County Nevada, within which is located the town of

Belmont,

The county seat of Nye county, which is situated 90 miles distant from Austin, and lying 8 miles East of Sonth of the same, at an elevation of 8,015 feet above the sea level. Belmont contains about 450 inhahitants. This county contains 1,400 inhahitants, and an area of 27,000 square miles, and although sparsely settled, it has a personal property assessment of over $900,000. Belmont is reached from Austin daily, hy Tuller & Clugage's line of stages; fare $15, time 15 hours. The mining helt extends for over 20 miles in length hy from one to two miles in breadth. This distriot was formerly (and is now) hetter known as Silver Bend which takes its name from the pecnliar shape of the high foothills which break out of the Smoky Valley Rsnge of Mountains, and forms the South end boundary of Monitor Valley, the most productive and highest elevated valley in Eastern Nevada, heing over 7,000 feet above the ses. These same foothills, form the northern boundary of Ralston Valley. The principal mines that are developed to any extent in this district, lie from 1 to 2 miles esst of Belmont and are as-follows:

El Dorado South Cons. M. Co.,

An incorporstion of $4,000,000 capital stock, in 40,000 shares. J. S. Slsuson, Pres.; J. W. Clark, Sec.; W. S. McCormick, Gen. Agt. and J. P. Courter, Mining Foreman. This corporation own the El Dorado south mine, comprising 1,000 feet, and the Arizona mine, containing 600 feet. The former joins the El Dorado north mine on the south, and the latter joins the Monitor location on the north, distant ahout 2,000 feet from each other. This company's mines are situsted about 1½ miles south of the town of Belmont, in Nye Co., Nev. The El Dorado south is being worked through an incline shaft, now down 440 feet, following the pitch of the ledge, which averages 30° to the eastward, varying from 22° to 33°, the main ore body running nearly north and south, and from 6 to 8 feet thick; it shows a hreast of pay ore averaging 6 feet iu thickness for a distance of 350 feet, as far as it is opened, hy drifts in their 340-foot level. At the 240-foot level this same chimney of ore is opened for 100 feet and still extending south, the whole body of which averages $200 per ton. One lot of a little over 4 tons, taken from this miue in its early working, psid for the present hoisting works, which are run hy a steam engine of 25-horse power. They have added since a new Knowle's steam-pump, just put in operation. At this mine, over 2,000 tons of ore are now on the dump that will average $90 per ton; hesides 150 tons on dump, and in their ore-house, that will mill $200 per ton. The former is ore considered third-class, that has heen accumulating since this mine was first opened. The lattter has heen taken out, in opening levels by the present corporation; working 25 men, in day shifts only, at present. This mine is very snbstantially timhered, both in the drifts and incliue.

The Arizona Mine

Has one main incline down to the Monitor tunnel level, through which tunnel it is now heing worked. This mine as above described is located on Arizona Hill, uext adjoining the Monitor. It contains the same ore-chimney and is a similar mine in nearly every respect to the Monitor. The ore body is drifted on, from the Monitor line northerly for a distance of 250 feet, the pay ore filling the walls, which average from three to six feet apart. The ore from this mine will average fully $300 per ton, as it is prepared for the company's mill, the machinery for which is now on the road, and which is expected to be in operation hy the 15th of October next. It will be of 20 stamps, with a roasting furnace of the White's pattern, aud all the late improvements in ore reduction. On the Arizona mine, 15 men are regularly employed; at this miue at least 175 tons of $350 ore is now in their ore house, ready for reduction. This is certaiuly a fine property, and will pay its owners handsome dividends as soon as their mill is in operation.

Monitor—Belmont S. M. Co.,

An incorporation of $500,000 capital stock, in 50,000 shares; J. B. Haggin, President; J. B. Minear, Secretary; and W. T. Wright, Supt.; W. V. Price, Mining Foreman. This corporation's mines are located one and a quarter miles east of Belmont, in Nye Co., Nevada. Their purchases to form the present corporation consist of the Monitor and Independence mines, claiming 1,400 feet in all. The ore hody in this mine runs north and south, and pitches to the east, at an augle of about forty degrees. This mine is being worked at present through a tnnnel, which intersects the ledge at 280 feet from the entrance, and taps the ore hody at a depth of 384 feet from the surface. From this tunnel drifts have heen run upon the ore hody, for a distance of 115 feet, which at this point vary from five to eight feet thick, and very rich horn silver is visible at nearly every point in this drift; a winze is snuk from one of these cross drifts, following the incliue of the ledge for a depth of 120 feet, finding the ledge, or ore hody, of the same size and richness. This company are engsged rnnning another tunuel, now in 300 feet, which, when completed, will be 400 feet in length, and tap the ore body at 240 feet helow the present workings, or about 600 feet from the croppings, following the ledge. They have 250 tons of first-class rock in their ore house that will mill $300 per ton, hesides aome seventy-five tons of second-class ore that will go $100 per ton. This company are not taking out ore at present, but are engaged in thoroughly opening up the mine, until their new 20-stamp mill is completed, which it is expected will he within 60 days. The formation of the country rock in this mine, is slate, with a heavy clay seam on the hanging wall; occasionally, however, a little porphyry puts in in the foot-wall; 25 men find employment at this mine;

Belmont S. M. Co.

Incorporated with $5,000,000 capital stock in 50,000 shares. M. J. McDonald Pres., T. J. Owens Sec., W. T. Wright Snpt., and N. A. Garvin, mining foreman. This company's mines are located on a parallel ledge to that of the Monitor, and distant ahout one-half mile east. The ahove corporation own three different mines or locations, known as the High-

bridge, 600 feet; Trsnsylvania No. 1 containing 1,000 feet, and ths Canfield Transylvania No. 1 with 3,000 feet of location; or 4,600 feet of locations altogether, which ars developed as follows; the Highbridge has a vertical shaft down 200 feet, still sinking; working 6 men by contract. Steam hoisting works are now on the road to be erected upon this shaft, which is in donble compartments, and timbered down to ths present workings. No work is being done on the Transylvania No. 1 at the present writing. It has been previously developed however, down to the water lsvcl, n fraction over 200 feet, by an inclineshaft following the ore body, which pitches east at an angle of abont 60°. This ledge runs north nad sonth and at the depth developed, shows a ledge aversging ahont 6 feet thick, running from 4 to 8 feet in thickness. A fine chimney of ors was passed through in siaking this incline, which milled from $150 to $400, per ton. This mine has an nbnndanco of fins ora in it yet, hut cannot be worked nntil machinery is brought into requisition to kesp tha water ont. The Canficld Transylvania, No. 1. has been the most thoroughly developed; fins steam hoisting works are erected over the principal shaft on this mine, which is an inclins down 300 feet dcep, following the dip of ths ledge, which at this point dips to the east, at an angle of about forty-five degrses, and runs north and sonth, liks all of the above mentioned. .Three lsvels havs been run and from this incline, one at n depth of 110 fest from the surfacs; one at 230 feet, and one at a point 295 feet from the surface. On the first level a drift is run 600 feet north and 300 feet south upon tho ors body. On the second level a drift is run north 380 feet and 300 fest south. On the third level a drift is just started to the north, now in 40 feet.

The ore body in this mine varies from two to fonr feet thick, and will mill, on an avsruge, $100 per ton—the first class, of which, however, assays from $150 to $500 per ton, and the latter has predominated in quantity, as far as the present workings extend. Another inclins is sunk on the north end of thie mins, to a depth of 110 feet, connecting the 600-foot drift on the first lovcl in their principal shaft, which is used for ventilation ouly. Working at the present writing 18 men, doing dead work only. This company will soon add a double reel to their hoisting works, after which the work of taking out ore will he carried on vigorously. This corporation also own a 10-etamp mill, located in the town of Belmont, at prosent out of repair, and not running; they also own the water-site that snpplies the town of Belmont with water.

Green Isles District,

Lately known as "Jeffereon District," is located about 12 miles west of Belmont, in Nye county, Nev. There have been about 30 claims located in this district, eome 18 of which are being worked, at the present writing employing eome 30 men, most of which are ownere of mines. Among the principal mines in couree of develoment are the

Gould & Curry, and Silver Wedge,

Belonging to B. Canty, Jas. Davis, P. Clancy aad John Carney. The above locations are parallel ledges, situated eome 200 feet apart; their general course is north and south, pitching to the east; the walle of which are granite and porphyry. These gentlemen claim 1,200 feet on sach location, and have developed each to a depth of 20 feet, following the dip of the ore body; the "Gonld & Curry" shows a ledge 3¼ feet thick, and assays from $75 to $800 per ton. The "Silver Wedge" shows a ledge five feet thick, that assaye from $100 to $5,000 per ton. Abont five tons of thie valuable ore is now on the dumps of each of the above-named mines, which will shortly be sent to Anstin for reduction.

More thoroughly developed are the following named: Sailor Boy, Prnssian, Prussian Sonth, Summit, Jefferson, Rappahanock, Magnolia and Troy, all of which show ore of very high grade; 3¼ tons from the Jefferson milled $966 per ton. There are some 30 or 40 tone of ore ont on the dumps of the varioue mines that will mill from $100 to $600 per ton. The conntry rock is porphyry granite and slate. L. P. MC.

Decorative Painting on Tin.—Tinfoil is spread out upon a emooth eurface, euch as glass, the latter having been first moistened to aid the laying out of the foil and to maintain it in its position. The painting is then execnted upon it in oil. Thie painting on tin, when dried and varniehed, can be rolled up like ordinary paper hangings, from which it essentially differs in possessing all the variety of tones and coloring that oil paintings admit of. The tin gronndwork constitutes a waterproof protection, and, on account of its great flexibility, will follow the various mouldinge and contoure of the object to be ornamented. To the latter ehould be applied a hydrofuge mixture, when it will be ready for the decorator. Thie method can replace ordinary gilding, ae the gold can be applied in the workshop and the gilt tin fixed afterwards. The advantage of gilt tin over gilding on other metale ie that ie it inimical to oxidation; whereas it is known that gilding upon other metale, and notably upon zinc, deteriorates rapidly.—*M. C. Daniel.*

Pulverized Fuel.—There are now several large manufactories nsing pnlverized fuel for furnaces and boilers. The system has been long adopted at the piano forte manufactory of Messrs. Chickering & Sons, Boston, Mass.

Scientific Progress.

Associations for the Advancement of Science.

The Amsrican Association for the Advancement of Science, commsnced its 21st annual mesting nt Dubuque, Wednesday, 21st nlt,, 150 msmbers bsing prssent. Professor Asa Gray, of Cambridge, the retiring President, called the mesting to order, and Prof. J. Lawrsnce Smith, of Louisville took the chair. A number of new msmbers were admitted, and eighteen papers wers filed for future reading. A reception meeting was held in the evening, nt which United States Senator W. R. Allison delivered a welcome address, and Professor Gray responded. We shall make further refersnce to the interesting proceedings of this body in futnre nnmbers.

Europsan Science Associations.

An association has bsen fonnded in France on ths model of the British association, and ths first meeting is appointed to be held at Bordeaux, on the 5th day of September, 1872. The Conncil of Administration consists of Claude Bernard, President; Broca, Delaunay, d'Eichthal, de Quatrsfuges, Wurtz, Cornu, Secretary, and Masson, Treasursr. The fonnders say that one of the greatest intellectual wants of Francs is n dscentralization of science. They wish to encourage by every means in their power the creation and dsvslopment of scientific centers in all of the largs towns of the provinces, and they propose to hold mestings in different cities of all persons who taks an interest in scientific study snd haws anything to communicate; in other words, thsy desire to establish a repnblic of science, and to break down the monopoly of the Institute. Already a large number of msmbsrs havs besn enrolled, and more than $20,000 subscribed. The movement is an important and significant one, and the first meeting at Bordeaux will be watched with interest hy scientific men everywhere.

The British Association convened this year at Brighton. The first general meeting met Aug. 14, when Prof. Sir William Thompson, F. R. S., resigned the chair, and Dr. W. B. Carpenter, F. R. S., assumed the Presidsncy, and delivered an excellent address, from which we may hereafter furnish extracts.

The forty-fifth annnal session of the German Society of Naturalists and Physicians was held in Leipsic dnring the week of August 12th and August 18th, 1872.

Distillation by Cold. — Alfred H. Smee, the inventor of the battery named afterhim, has communicated to the Royal Society a method which he has devised, and which he names "distillation by cold," which promisee to have a neeful application in the arts, and by which he believee the detection and determination of ammonia and other organic impnrities existing in the atmosphere will be greatly facilitated. A description of the process is condensed as followe in the N. Y. *Gas Light Jour.*:

A glass funnel—nsually of 8 or 9 inches—is drawn to a point and closed. It ie eupported in an ordinary stand, and filled with ice. Condensation of the watery vapor of the atmosphere then takee place; the dew collecte into drops, which trickle down the outside of the funnel, and at last fall from the point, under which a emall receiver ie placed to catch them. The total quantity of liquid collected in a given time is measured, and the quantity of ammonia determined by Nessler'e test.

By the method of distillation by cold, the author found it possible to distil many substances which ara decomposed at a high temperature. Thns many delicate odore of flowsre were distilled by placing the flowers nnder a hell-glase enfficiently large to cover the funnel containing the ice. The odors were found to be more rapidly and completely abstracted by placing a dish with a little ether under the bell-glass at the time of distillation.

The paper was accompanied by tables giving the resulte obtained in 107 experimente, together with the atmospheric conditions prevailing at the time. The experimente were made in a garden, in a bed-room, in hospital wards, in the open country, etc. A few of the numbers obtained are hsre given by way of example:

Fluid collected in minims.	Ammonia in grs. per gallon.	Source.
150	1·9743	Erysipelas.
120	0·1791	Garden.
55	6·8807	Drains.
90	2·1000	Bed-room.
	2·9563	Stables.
150	0·0985	Victoria Park.

Spectroscopic. — Pluecker, Wuellner and othere, have endeavored to cast a doubt on our ordinary epectroscopic theoriss by meintaining that a single gas, when incandescent, may give numerons spectra, *varying with the temperature.* Angstroem has lately combatted all this, in a communication to the French Academy, asserting that hydrogen, for example, has, *when pure,* but one epectrnm, that namely which ie observed in the light of the sun and the stars. One of the epsctra attributed by Pluecker to this gee is that of acetylene, another that of eulphur. In the case of oxygen, for which Wnellner found three epectra, one ie asserted by Angetroem to have a great analogy with that of carbonic oxide, another is the spectrum of chlorine.]

Condensing Magnetism.

The French Academy of Sciences has received n paper from M. J. Jamin, in which he ehows that magnetism may be condsnsed, just like electricity. Having, for some special purposes, had n large horseshoe magnet made, consisting of ten laminæ of perfectly homogeneous steel each wsighing ten kilogrammes, he suspended it to a hook attached to a strong beam, nnd haviug wound coppsr wire around each of ths legs, which were turned downwards, hs put the latter into communication with a battery of fifty Bunssn's elements, hy which means ths horseshos might be magnetised eithsr positivsly or negatively, at pleasure. The variations wsrs indicated by a small horizontnl needls, situated in the plane of the polss. There was, furthsr, a series of iron plates, which could be ssparately applied to each of the laminæ.

Before attaching any of the latter, the electric cnrrent was driven through the apparatns for a fsw minntss and thsn interrnpted, whereby ths magnet acquired its first degrss of suturation, marked by a certain dsviation of ths needls. One of the iron plates (nsually called "contacts") was thsn put on, and it supported a weight of 140 kilogrammss. The second trial was now made; and the current having passed through again for a few seconds, it was found that the horseshos would support 300 kilogrammes, instead of 140. Ths numbsr of contacts hsing now increased to five, which togethsr, in ths natural state, supported 120 kilogrammes, it was fouud, aftsr the passage of ths current, that they could support the enormous wsight of 680 kilogrammss, which they did for ths space of a full week. No sooner, however, were the contacts taken off than ths horseshoe returnsd to its usual permanent strsngth of 140 kilogrammes. This leads to show that magnstism may be condensed like electricity for a ehort period.

"Explosive Gas Generated from Coal—Remarkable Occurrence."—Under the above head ie recorded the occnrrence of a serious explosion, which took place on board the steamer Torino, while lying at the Tyne Docks, South Shields. The vessel wae loading gas coals, and the cook and two seamen went below to get some provisions, carrying with them a lighted candle. They no sooner got below than a terrible explocion took place from the gae generated from the coals. The men were knocked down and dreadfully burned in all parte of the body. One of them ie not expected to live. They were conveyed by special train to the Newcastle Infirmary. On the explosion taking place the eteamer took fire, which was extnguished only aftsr being considerably damaged by the caeualty.

There is nothing remarkable in the above occurrence, only in its variety, and the wonder that it does not oftener occur under similar circumstances. The accnmulation of gas in the atmosphere of a ship's hold to an explo-ive point, is only a repetition of the common occurrence of the eame thing in the galleriee of a mine, and similar care ehonld be exercised in the one case ae the other.

"Hydroecopy."—A Frenchman, by the name of Paramelle, has been devoting himeelf to the scientific etudy of subterranean watere, the kind of ground where they are to be fonnd, their flowing, the phyeical lawe that govern their abnndance or ecarcity and their depth. The science is now eaid to be complete, and hae been chriet-ened "hydroscopy," or enbterranean hydrology. Its applications are definite, and among them we must place in the first rank the discovery of eprings and well eites. Within easy accese of every village, almost of every bouee, and gensrally at a little depth below the surface of the soil, there exist streams of water. By a eimple digging, (indicated after a thorough survey of the place, and not by the aid of the divining rods, which have made so many dupee), one can channel out the hidden streame, and make them flow to the surface; or else a well can be dug which will furnieh an abundant supply of water. Paramelle has already, it ie stated, discovered 9,500 eprings in France, and his disciplee have been equally succeseful.—*Amer. Artisan.*

Freezing by Mechanioal Action.—M. Foselli has announced to the French Academy of Science that he hae succeeded in producing an amount of cold just below the zero of the Fahrenheit scale, hy eimple mechanical action creating rapid evaporation. He employs a wheel formed of a spiral tnbe, both ends of which are open, set vertically and half immereed in the fluid to be cooled, eo that the latter passes constantly throngh the whole length of the tube, half of which is constantly above the liquid, and, being wet, gives rise to active evaporation and consequent refrigeration within it.

The Zodiaoal Light.—C. Piazzi Smith has found that the epectrom of starlight is identical with that of the Zodiacel light, and hence aesumes the old astronomical theory, that the Zodiacal light is from the solar illumination of infinitely small, dietant particlee of matter, snch, perhaps, as meteors, revolving about the sun.

Mechanical Progress.

Terra Cotta in Architecture.

The use of terra cotta in architecture is at present exciting considsrable attention on hoth sidee of the Atlantic, being warmly advocated by some and earnestly opposed by others. When properly manufactnred, it is unqnestionably one of the most dnrsbls materials which can be employed; bnt like stone or any bnilding material, it reqnires inspection before use. Very fine specimens of terra cotta made in London one hundrsd ysars ago, and exposed to the weathsr since, ars still perfect. In Northern Italy, many fine examples of brick and terra cotta exist, and the extensive revival in England and Gsrmany of the method of building is worthy of nots.

The strength of well-made terra cotta is surprising. A piecs of four-inch column, made by Pulham, and tested at the 1851 Exhibition, required a pressure of 400 tons to ths sqnare foot to crush it, or as mnch as good granite, and two or thros timss as much as most building stone. In a paper rsceatly read at the agricnltural Confsrence in London, Mr. C. Barry gave some valuabls resnlts of experiments on terra cotta, showing the crushing strength of this material to be seven and a half times greater than that of average brick. A simple test of the tsxture of terra cotta is ths poiat of a penknife, which should not penetrate the surfuce, and will some times strike fire upon it.

The true qnalities of terra cotta in its application to architecturs, consist in its merits as a decorative fire-proof material, possssing the three sssentials of color, durability, and economy. When treated with dne regard to construction, so as to fulfil its part in the building as honestly as the brickwork of the wall itssll, the material admits of ths imprsss of original art bsing reproduced for the neea of the architect in an almoet imperishable snbstsnce. Fine works in hard stone are exceedingly difficnlt of execution, and in soft stone soon crnmbles away; the lahor of tha artist may be eaved by taking a monld of his work, and reproducing it in terra cotta ae often ae may be reqnired; indeed, the great economy in the use of terra cotta lies in producing a great number of articlee of the same pattern. Where original art is required, the subject can be modeled in the actual terra cotta clay, and passed through the kiln, from which it issues an original work of the eculptor, without the intervention of mechanical copying. Modern examplee of the extensive use of terra cotta ara seen in the new Dulwich College, costing $500,000, the South Kensington Mueenm, varions hotels and stores, and the great Albert Hall, which cost $2,500,000. The same structnres, decorated in stone, would have cost much more.

Automatic Avoidance of Boiler Accidents.

There can be no donbt that there would be lese liability to explosion and collapse in eteam generators if the engineer in charge could always be made to attend to hie busines. Safety plugs, alarms, and eimilar devices have long been tried with, ordinarily, quite indifferent results. A more radical meane of securing the end desired has of late been spoken of approvingly by some good anthoritiee on steam nsing, especially by some of our foreign engineering exchangee. Thie amounts to nothing more or less than pntting out the fire whenever the neglect of the attendant allows the water in the hoiler too fall too low or to rise too high. It acts, indeed, with eomething of tha efficiency of the Yankee bedstead, proposed a score of years since, for throwing the occupant ont upon the floor in case hia good reeolution of early rising failed him at the given time.

The apparatus ie very simple. A brass pipe hae its ontlet immediately over the furnaca fire, and is fitted with a valve which, operated in either direction, will afford an outlet for tha contente of the hoiler down npon the fuel. The valve-etem is connected with a lever having at one end a float, and at the other a balance-cob or counterpoise, by which the relative baoyancy of the float may be regulated. When the water falls below the proper level, the fall of the float opens the valve, and the eteam whizzes down upon the fire, serving tha double purpose of extinguishing the latter and of celling the engineer back to his forgotten dnties. In like manner, should the water rise too high, the lift of the float opens the valva, and the water flows from the boiler upon the fire.

Thie device has been largely adopted in English manufacturing establishments, where a boiler accident necessarily jeopardizes many lives. And if the same or some eimilar device were in use here, nobody would be hurt, and a great many, possibly, would be benefited thereby.—*Am. Artisan.*

A Substitute for Borax in Soldering.—M. Gauduin has been making experiments to eupercede borax, which ie generally employed in soldering, and the result ia that he finda that an excellent flux for eoldering iron, and brazing coppsr and aluminium bronze, ia obtained by a mixture of equal parts of cryolite and chloride of barium. Cryolite ie a product and export of Greenland, and consiste of a double fluoride of aluminium and sodium.

OUR MINING SHAREHOLDERS' DIRECTORY

ASSESSMENTS.

Name of Co.	Location.	Secretary.	S.F.Office.	Asem't.	Levied.	Deling't.	Sale.
Adams Hill O. M Co.	Eureka Dist.	W. W. Traylor.	419 Cal. St.	25.	Aug. 9.	Sept.12.	Oct. 2.
Alaska Con. M. Co.	Lyon Co., Nev.	G. R. Spinney.	320 Cal. St.	25.	Sept. 3.	Oct. 7.	Oct. 28.
American Flag M. Co.	Ely District.	Geo. R. Spinney.	320 Cal. St.	$2 00.	Sept. 2.	Oct. 8.	Nov. 1.
Arizona & Utah M. Co.	Washoe.	C. H. Fish.	419 Cal. St.	$1 00.	Aug. 14.	Sept. 17.	Oct. 7.
Atlantic& Pacific Con.M Co.	El Dorado Co.	A. Noel.	419 Cal. St.	20.	Sep. 11.	Oct. 15.	Nov 2.
AUBURN G. M. CO.	Placer Co., Cal.	Geo. W. Dixon.	Cr. Mont.&Cal.	25.	Sept. 13.	Oct. 14.	Nov. 6.
Beach & Paxton.	Storey Co.,Nev.	Ed. Landers.	507 Mont'g St.	50.	Aug. 6.	Sept. 10.	Sept. 30.
BEOK WITH M. CO.	Ely District.	Wm. H. Watson.	302 Mont'g'y St.	20.	Aug. 19.	Sept. 28.	Oct. 23*
Bowery Cons. M. & M. Co.	Ely Dist.	C.E Elliott.	419 Cal. St.	$1.	Sept. 17.	Oct. 24.	Nov. 10.
Calaveras G. M. C.	Calaveras Co.	T. B. Wingard.	318 Cal St.	50.	Aug. 26.	Oct. 1.	Oct. 22.
Caledonia S. M. Co.	Storey Co., Nev.	R. Wegener.	414 Cal. St.	$2 00.	Sept. 11.	Oct. 18.	Nov. 6.
Chapman M. and M. Co.	Ely Dist.	T. Swift.	415 Mont. St.	50.	Sept.16.	Oct. 24.	Nov. 15.
Cherokee Flat Blue G. Co.	Butte Co., Cal.	H. Pichoir.	603 Wash'n St.	$1 00.	Sept. 6.	Oct. 11.	Oct. 29.
Condor M. Co.	Ely District.	H. O. Kibbe.	419 Cal. St.	$1 00.	Sept. 12.	Oct. 23.	Nov. 13.
Con. Amrim M. Co.	California.	B. Voorman.	411 Cal. St.	$5 00.	Aug. 9.	Sept. 24.	Oct. 16.
Cook & Geyer M. Co.	Storey Co. Nev.	O. H. Fish.	419 Cal. St.	50.	Sept. 4.	Oct. 8.	Oct. 28.
COTTONWD CRK M.CO.	California.	Jos. L. King.	411 Cal. St.	7.	Aug. 19.	Sept 28.	Oct. 15*
Diney M. Co.	Lyon Co., Nev.	Geo. R. Spinney.	320 Cal. St.	$1 00.	Aug 29.	Oct. 2.	Nov. 23.
Desere Con. M. Co.	Utah T.	J. L. King.	411 Cal. St.	20.	Sept. 16.	Oct. 18.	Nov. 7.
Empire M. Co.	Grass Valley.	S. Pinkham.	401 Cal. St.	$10.	July 22.	Sept. 22.	Sept. 27
Empire M. Co.	Grass Valley.	S. Pinkham.	401 Cal. St.	$5 00.	Sept. 6.	Oct. 12.	Oct. 29.
Empire M. Co.	I. T	C. F Balcom.	426 Mont'gry St.	50.	Aug. 5.	Sept 6.	Sept. 30.
Falli- S. M. Co.	Ely District.	A. Treadwell.	Merc hants' Ex.	25.	Aug. 26.	Oct. 2.	Oct. 22.
Francis M. Co.	Mariposa Co.	T. F. Cromlee.	409 Cal. St.	75.	Aug. 20.	Sept. 20.	Oct. 15.
Globe M. Co.	Gold Hill.	W. E. Dean.	419 Cal. St.	$1 00.	Sept. 4.	Oct. 7.	Oct. 25.
Golden Chariot M. Co.	Idaho.	L. Kaplan.	Merchants' Ex.	$1 00.	Sept. 12.	Oct. 18.	Nov. 8.
Gould & Curry S. M.Co.	Washoe.	A K. Durhrow.	Merchants' Ex.	$15	Aug. 8.	Sept. 12.	Oct. 2.
Greenhorn G M. Co.	Grass Valley.	J. F Lightner.	433 Cal. St.	$1 50	Aug. 9.	Sept. 11.	Sept. 30.
Hale & Norcross S. M. Co.	Washoe.	J. F. Lichtner.	433 Cal. St.	$5 00.	Aug. 22.	Sept. 26.	Oct. 16.
Hercules S. M. Co.	Nye Co., Nev.	J. T. Milliken	608 Merchant St.	20.	Sept 10.	Oct. 10.	Oct. 31.
Hermiguera M Co.	Lower Cal.	J. H. Applegate.	729 Mont'g'ry St.	$3 00.	Sept 3.	Oct. 5.	Oct. 23.
Huhn & Hunt M. Co.	Ely District.	L. Kaplan.	M rchants' Ex.	$1 00.	Aug. 30.	Oct. 4.	Oct. 24.
Ingomar S. M Co.	Ely Dist.	C. S. Neal.	419 Cal. St.	50.	Aug. 12.	Sept.18.	Oct. 10.
Ivanhoe S. M. Co.	Ely Dist.	David Buck.	321 Mont. St.	50.	Aug 10.	Sept. 20.	Oct. 8.
Kinston M. Co.	Ely District.	L. Kaplan.	Merch nts' Ex.	50.	Aug. 26.	Oct. 1.	Oct. 21.
Lemon M. & M. Co.	Eureka Dist.	I. T. Milliklin.	608 Merchant.	$1 50.	Aug. 14.	Sept. 17.	Oct. 21.
LOUISE M. CO.	Lincoln Co.,Nev.	Wm. H. Watson.	302 Mont'g'ry St.	50.	Sept. 14.	Oct. 18.	Nov. 9.
Lyons & Wheeler M. Co.	Arizona.	T. W. Colburn.	409 Cal. St.	10.	Sept. 2.	Oct. 4.	Oct. 21.
M'CRELLIN S. M. CO.	Eureka Dist.	Chas. E. Elliot.	419 Cal. St.	30.	July 24.	Sept. 9.	Sept. 30*
Minnesota G. & S. M. Co.	Idaho.	Wm. Willis.	419 Cal. St.	50.	Sept. 4.	Oct. 12.	Nov. 2.
Monitor Belmont M. Co.	Nye Co., Nev.	B. B. Minor.	411½ Cal. St.	$1 00.	Aug. 20.	Sept. 23.	Oct 14.
MINA RICA M. CO.	Placer Co.	Geo. R. Spinney.	320 Cal. St.	20.	Aug. 6.	Sept. 10.	Sept. 30.*
National M. Co.	Lyon Co., Nev.	B. B. Minor.	411½ Cal. St.	50.	Aug. 23.	Sept. 23.	Oct. 14.
Nevada Land M. Co.	Elko Co., Nev.	Wm. H. Watson.	302 Montgomery.	8.	July 18.	Sept. 10.	Sept. 30
Newton Booth Con. M. Co.	Ely Dist.	R. F. Scott.	314 Cal. St.	25.	Sept. 5.	Oct. 7.	Nov. 4.
North Ore Fino.	Idaho.	C. F. Balcom.	426 Mont'gry St.	50.	Aug. 22.	Sept. 28.	Oct. 19.
O H. Treasnre M. Co.	White Pine.	D. A. Jennings.	401 Cal. St.	$1 50.	Aug. 9.	Sept. 16.	Oct. 8.
Pacific Borax Co.	Esmeralda Co.	E. Leuba.	507 Mont'g'r St.	50.	Sept. 5.	Oct. 7.	Oct. 31.
Page & Panaca S.M. Co.	Ely Dist.	L. Kaplan.	Merchants' Ex.	$5 00.	Aug. 14.	Sept. 19.	Oct. 11.
Pennsylvan a.	White Pine.	Daniel Buck.	331 Mont'ry.	$1 20.	Aug. 9.	Sept. 9.	Oct. 5.
Placer G. M. Co.	Placer Co., Cal.	G. W. R. King.	411 Cal. St.	15.	Sept. 16.	Oct. 22	Nov. 8.
POCAHONTAS G. M. Co.	El Dorado Co.	D. A. Jennings.	401 Cal. St.	50.	Sept. 17.	Oct. 24.	Nov. 18.
Pride of Mountain M. Co.	Winnemucca.	T. W. Colburn.	419 Cal. St.	6.	Aug. 26.	Sept. 30.	Oct. 21.
QUAIL HILL M. & W. Co.	Calaveras Co.	T F. Cromlee.	409 Cal. St.	$5 00.	Aug. 22.	Oct. 2.	Oct. 24.
Red Cloud S. M. Co.	Ely District.	E. F. Clark.	331 M ntg'ry St.	25.	Aug. 24.	Sept. 24.	Oct. 16.*
Rising Star M. C o	Idaho.	Wm. Willis.	419 Cal. St.	$1 00.	Aug. 10.	Sept. 13.	Oct. 4.
Sarco M. Co.	Washoe.	E. B. Holmes.	401 Cal. St.	$10 00.	Sept. 10.	Oct. 16.	Nov. 2.
SILVER SPROUT M. Co.	Kearsarge Dist.	T. B. Wingard.	318 Cal St.	50.	Aug. 26.	Oct. 8.	Nov. 8.*
Silver West C.n. M. Co.	Eureka District.	F. R. Bunker.	Mont'gry Block.	50.	Aug. 26.	Oct. 5.	Oct. 30.
South Charlot M. Co.	Idaho.	J. L. King.	411 Cal. St.	50.	Sept. 6.	Oct. 12.	Nov. 4.
SPRING MT. TUNNEL.	Ely Dist., Nev.	J. M. Buffington.	419 Cal. St.	30.	July 9.	Aug. 16	Sept. 25.*
Stoke & M. Co.	Calaveras Co.	T. B. Wing rd.	318 Cal. St.	$1 00.	Sept. 4.	Oct 7.	Oct 28.
Tattulah M. Co.	Humboldt, Nev.	Geo. A. Hill.	18 Mont'gry St.	$3 00.	Aug. 26.	Sept. 24.	Oct. 15.
Tecumech G. S.&M.Co.	Calaverae Co.	F. J. Hermann.	634 Wash'n St.	15.	Aug. 9.	Sept. 12.	Oct. 7.
TELLURIUM G.& S.M.CO.	Amador Co., Cal.	Wm. H. Soery.	Cr. Clay & K'ny.	$1 00.	Sept. 3.	Oct. 5.	Oct. 23*
Tehama Cons.	Schell Creek.	W. W. Stetson.	414 Cal. St.	$2.00.	Aug. 2.	Oct. 10.	Oct. 30.
Union Cons S. M. Co.	Virginia, Nev.	B. M. Gunn.	Merchants' Ex.	50.	Aug. 7.	Sept. 10.	Sept. 30.
VICTORIA & IMP. M. CO.	Utah T.	Wm. H. Watson.	30 Mont'g'ry St.	10.	Aug. 14.	Sept. 18.	Oct. 12*
Yuha Gravel M. Co.	Nevada Co., Cal.	J. A. G rdon.	105 B tiery St.	25.	Sept. 17.	Oct. 21.	Nov. 11.

MEETINGS TO BE HELD.

Name of Co.	Location.	Secretary.	Office in S.F.	An'l or Sp'l.	Date.
Baltimore Cons. M. Co.		D. S. Bayley.	401 Cal. St.	Annual.	Oct. 3.
Baltic S. M. Co.		D. W. Davies.	608 Merchant St.	Annual.	Sept. 24.
Cook & Geyer.	Storey Co., Nev.	O. H. Fish.	419 Cal. St.	Annual.	Sept. 23,
Crown Point Ravine M. Co.		B. M. Gunn.	Merchants' Ex.	Annual.	Sept. 23.
"420" M. Co		H. O. Kibbe.	523 Mont'gry St.	Special.	Oct. 7.
Esta Buena Cone. M. Co.		C. D. Montanye.	533 Kearny St.	Annual.	Sept. 30.
Floral Springe W. Co.	Pioche District.	E. McFaddin.	Express Bid'g.	Annual.	Oct. 1.
Golden Chariot G. M. Co.	Idaho.	S. W. Collins.	906 Mark t St.	Annual.	Sept. 28.*
Imperial Cons. M. Co.		W. E. Dean.	419 C l. St.	Annual.	Sept. 26.
Indep G. and S. M. Co.		John Fowler.	Merchants' Ex.	Annual.	Oct. 19.
North Star M. Co.	Grass Valley.	D. A. Jennings.	401 Cal St.	Annual.	Sept. 25.
Segregated Belcher M. Co.	Washoe.	E. F. Stone.	Merchants' Ex.	Annual.	Oct. 1.

LATEST DIVIDENDS—Within Three Months.

Name of Co.	Location.	Secretary.	Office in S. F.	Amount.	Payable.
Belcher M. Co.	Washoe.	H. O. Kibbe.	419 California St.	$3.00	Sept. 10.
Black Diamond Coal Co.	California.			2½ per cent,	June 28.
Crown Point G. & S. M. Co.	Washoe.	C. E. Elliot.	419 Calif rnia St.	$3 00.	July 5.
Eastport Coce Bay Coal.	Oregon.	I. L. Pool.	Merchants' Ex.	$5 00.	Sept. 14.
Keystone Quartz M. Co.	California.	L. Vesaris.		50.	July 10.
Mahogany G. & S. M. Co.	Ely District.	T. J. Owens.	402 Mont'gry, St.	$1 50.	Aug. 7.
Meadow Valley M. Co.	Ely Dist., Nev.	T. W. Colburn.	419 California St.	$1 00.	June 20.
Raymond & Ely M. Co.	Ely Dist., Nev.	A. J Monlder.	419 California St.	$7 00.	Sept. 10.
Pioche S. M Co.	Ely Dist., Nev.	O. E. Elliot.	419 California St.	$1 00.	Aug. 10.

—* Advertised in this journal.

Stock Sales for Week ending Sept. 19—S. F. Stock & Ex. Board.

NAMES OF CO'S.	Past ¶	Shs. in ft.	FRIDAY. Shs	Prices.	SATURDAY. Shs	Prices.	MONDAY. Shs	Prices.	TUESDAY. Shs	Prices.	WEDNESD'Y Shs	Prices.	THURSDAY. Shs	Prices.	Tot'l Sh's Sold.	Aver. age.	Decln Advnc
Ad'me Hill	300	20			50	1¾	230	2			200	2 @ 2¼			486	2 62	
Alpha	6400	8			15	45			180	41 @42	20	42 @42½	20	41 @41½	215	45 96	
Alps	800	37½	350	5	500	4¾@ 4⅞	310	4¾@ 5	460	4½@ 4⅝	170	4 @ 4½	125	4½	1915	4 89	½
Am. Flag	2600	15	50	16¾@16¾	145	16¾@17	380	16½@17	345	17 @17¾	205	18¾@18¾	200	18 @18¾	1425	17 15	2¼
Ariz'a Utah	1900	19½	110	90c	190	1¾	20	1¾							320	1 45	
Belcher	1040	10	490	97½@104	370	102 @105	455	103 @104	220	104 @105	110	104 @105	345	102 @105	1965	151 86	1
Baltimore	1200	20	50	2¾	510	2⅞@ 2½			375	2½@ 2¾	300	2	330	2¼@ 2¾	1815	2 16	¼
Balt're Am	1200	20	100	2½	300	2¾					300	2¾			1075	2 11	1 ¼
Bowery	1000	30	370	@ 2½			100	1⅜ 486		1⅜@ 1⅝	250	1⅜@ 1⅞	470	1⅜@ 1⅜	1655	1 77	
Bacon					10	50									10	50	
Buckeye			100	2¾											100	2 75	
Beal & Belc	224	100							50	60	660	7 @ 8¼	212	6⅞@ 7	822	7 93	
Bellevue									50	3			20		70	3	
Belmont			100	6¾@ 6⅞	140	6¾	195	7⅛@ 7¼	400	8	520	8¼@ 8½	1145	8 @ 8½	2530	7 84	1⅜
Chollar	2800	10	90	61½@62½	250	62 @64	145	62½@65	295	64 @68½	85	68 @70	165	65 @67	1040	65 01	4½
Caledonia	5000	4	915	34 @36	465	31 @34	945	31 @34	640	35 @36½	520	33 @35	640	33 @35½	3985	33 50	½
Cs Virginia	1160	420	740	30 @33¾	610	35	1625	37 @39	2400	35 @50	925	50 @58	530	50 @53	6344	46 22	19¾
Confidence	3	18	100	8½@ 8⅝			75	8⅞			65	8¾	5	8¾	245	8 71	
Crown Pt.	60	166⅔	231	117 @121	180	131 @136	10	130		115 132 @133	245	130 @133	20	125 @126	804	126 92	5
Central	70	357					50	9¾	100	9	235	10½@11	17	10½@11	560	10 30	
Calaveras	3200	6¾															
Conder			195	2 @ 2¼	915	1½@ 2¼			50	2	75	1½@ 2	255	2	1440	1 99	¼
Chainpion		12	960	1⅜@ 1½	500	1¾	600	1¾	200	1⅝			400	1½@ 1⅝	6500	1 38	¼
Ch f o Hill	1000	30	240	8½@ 8¾	1730	8½@ 9	965	9½@10	1410	12 @13	1050	12 @12⅝	1195	9¾@11	6590	8 80	2¼
Cederburg		12	30	7½	135	7⅝			60	7½			60	7½	285	7 57	
Dancy		000			200	1¼					500	1¼	50	1¼	750	1 01	
Eureka Con	100	30	250	20½@21	110	20½	150	20¾@21	95	21	505	21 @21¾	370	20½@21	1480	20 96	
Eureka	1650	12			5	10			30	15					35	14 28	
Exchequ'r	400	20			10	15½	20	15¾	30	15½	60	16	20	10	140	15 10	
Eclipse	70	357	20	11					15	8	50	11 @11¾			125	10 70	
Empire M.	75	16	265	7¾@ 8	175	8 @ 8¼	130	8¼@ 8¾	346	8¾@ 8¾	480	9 @10	350	8¼@ 8¾	1755	8 27	¾
Excelsior	4500	2½											3	14½	30	14 51	
Gould & C	1200	4	10	165 @167	40	162 @165	5	165	40	170 @172	210	190 @202	252	187 @198	557	178 35	30½
Golden C.	750	10½							70	10			60	9½@10	130	9 84	
Globe	1600	12½	25	1	100	1¼@ 1⅜	50	1¾	100	1			150	1	325	1 41	
Gulf Q		40															
Hale & No.	400	4	10	72	5	73	10	70	104	76 @80	430	81 @88	105	79 @80	664	69 51	8
H & Hunt	3600	8½	150	5½@ 5¾	25	5	190	5 @ 5¼	825	5 @ 5⅞	335	5¾@ 5½	525	5½@ 5½	2050	5 46	¼
Henues		17½	250	14 @14⅜			50	14 @14⅝							300	14 09	
Idaho more	1300		400	15 @15⅝	200	12 @15	100	15	100	15			80	15½	880	14 80	
Imperial	184	643⅞	200	87½@ 9	145	8½@ 8¾	170	8½@ 8¾	180	8¾@ 8⅞	370	8⅞@ 9	485	8¾@ 9	1550	8 71	
Ingomar	4000	40	280	1½	175	1½	620	1¾@ 1⅞	600	1⅞@ 2	425	2 @ 2¼	45	2⅛	2250	1 85	½
Indepen'd'	2000	15					50	50c							50	50	
Ivanhoe			750	2⅝@ 3	25	3									775	2 89	
Julia	3000	7	10	5¾	120	5 @ 5¼	140	5 @ 5⅛	100	5⅛	580	5⅝@ 6	510	5½@ 5⅝	1460	5 52	⅜
Justice	95	21	50	11 @11½	35	11	60	11			85	10¾@11	30	10¾	260	10 95	¾
Kentuck	18	0	14				21	250	15	250 @255	10	250	18	240 @250	64	348 00	
Knicker'r	200	20	125	6¾@ 6⅞	225	6 @ 6¾	350	5½@ 5¾	470	5¾@ 6¾	310	6 @ 6¾	530	6 @ 6¾	2010	5 80	⅛
Mammoth	1800	20	50	50	50	50									100	50	
Meadow V	4250	12½	3090	20¼@23¾	1745	22½@25	1330	24 @25	1520	24¼@25	3285	23¾@25	4775	21¾@23¾	15720	22 68	
Mahogany	720	13⅔	645	9 @10	180	9 @ 9½	125	9¼@ 9½	40	9½@ 9¾	25	10	100	10	1115	9 37	
Mook. Bird			450	2 @ 2⅛			300	2	200	2			150	1⅞@ 1⅞	1100	1 91	⅛
McMahon					200	5	500	4¾@ 5			200	4½			700	4 67	
Newark			705	5½@ 6	715	5 @ 5¼	180	4½@ 4¾	1220	4¼@ 4¾	1220	5½@ 6	685	6 @6¾	4850	5 24	¾
Ophir	1400	12	67	67 @71	430	63 @72	264	67½@71	365	67 @69	425	75 @79	105	72 @78	2262	71 03	7
O. H. Treas	800	26⅔	490	5 @ 5⅞	280	5 @ 5¼	140	5	70	5	260	4¾@ 5	1165	5 @ 5¼	2405	5 06	⅛
Overman	12	0	10	63	45	66 @67	50	63	20	64½@65	5	66	80	64 @66	275	64 05	3
Occidental	800	12½	110	2 @2½	10	2									210	2 02	
Pioche	1000	20	415	24½@25¼	180	24 @24½	255	24 @24½	195	23 @24½	270	21¾@22½	155	23 @23½	1470	23 43	
Page & Pan.	2400	16⅔	650	2 @ 2¼	825	3¼@ 3½	500	3⅛@ 3⅜	785	3¼@ 3⅜	850	3½@ 3¾	925	3⅜@ 3½	4635	3 12	1¼
Pea Vine			400	90c @ 1	100	1	550	95c @ 1	40	1	320	95c	100	9⅞c	1510	95	5
Phœnix	4000	7¼	200	4½	200	4½			100	4¼	200	4½@ 4⅝	200	4½	1095	4 25	
Pecbe W			600	3¾			60	3¾@ 4	220	3⅝@ 3⅞			170	3¾	1050	3 84	
Ray & Ely	800	20	240	171 @177	115	172 @174	70	173 @174	85	174 @175	140	173 @177	210	171 @173	860	174 59	1½
Savage	1000	30	635	108 @119	310	111 @117	190	112 @115	18	113 @118	270	120 @122	155	114 @117	1745	115 62	2
Sg. Belcher	160	40	30	71 @80	80	80 @82½	25	82½	50	85 @87½			25	90	210	83 19	10
Sierra Nev	3000	7½	465	15¾@16¾	640	15½@17	450	16½@17	140	17¾@17½	225	17¾@18	105	17 @17½	2455	16 93	¾
Sugar	7600		90	4	10	3							50	3⅜	150	3 73	
Silver Hill	1800	12½	110	7¼@ 7½	80	7	20	7	35	7	90	7½	185	7¼@ 7½	520	7 31	
St. Patrick	660	30½															
S. Chariot	20	250					50	1⅝							50	1⅝	
Sg. Belch'a		10														1 62	
Trenon	5400																
Wash&Ur'l	200	150	170	4¾@ 4⅞	250	4½@ 4⅝	400	4¾@ 4⅞	450	4¼@ 4⅝	200	4¾@ 4⅞	125	4¾	1595	5 04	
Woodville	1400	20			420	3 @ 3¼	150	3¼	300	3¼	150	3½@ 3¾	150	3¼	1170	2 80	
War Eagle											200	6⅞@ 7			20	6 96	
Utah			50	2⅝											50	2⅝	
Yel Jacket	1200	25	65	104 @105	10	109	30	106 @109	65	108 @109	90	109 @111	60	108 @109	320	108 03	3½
Yule Grav.	400	25															

NOTES.—¶ Nearly ‡Over.

S. F. Stock and Exchange Board.

THURSDAY, Sept. 19th, 1872.

Mining stocks have fluctuated more than usual this week, some descriptions advancing materially. On Friday the market wae rather at irregular prices. From previous days' eales afternoon pricee showed an advance in Belcher of $2; Cou. Virgiuia, $1; Seg. Belcher, $9; Imperial, $1; Meadow Valley, $1; Ophir, $13; Pioche, 50 ceuts. Caledonie fell $2; Jacket, $6; Savage, $10.

Saturday the market was somewhat etronger and prices closed generally better. Belcher was $2 higher; Crown Point, $13; Seg. Belcher, $11; Overman, $6; Jacket, $4; Hale & Norcroes, $1; Meadow Valley, $1; Caledonie was $3 lower; Gould & Curry, $1; Ophir, $1.

Monday, prices were reguler with no material change. In the afternoon Board more husiness was done, and Belcher rose $1; Caledonia, $2; Cous. Virginia, $5; Hale & Norcrose, $1; Meadow Valley, $1; and Ophir $1.

Tuesday morning prices were hetter again, and the afternoon board closed at higher prices, Belcher rose $1; Crown Point, $3; Chollar, $2; Con. Virginia, $10; Celedonia, $3; Gould & Curry, $8; Hale & Norcross, $11; Ophir, $2; Jacket, $2; Chief of the Hill, $4. The feature of the Board was the unusnal advance of Consolidated Virginia, Ophir participating.

On Wednesday the market was agein etrong and active, particularly for Washoe stocke. At the afternoon Board a good businese was done, and prices were firm. Con. Vir. advanced to $58 iu the morning, but there were aales hefore the afternoon Board at $47. Chollar rose $3; Gould & Curry, $30; Hale & Norcross, $8; Ophir, $11; Savage, $8; Jacket $1.

To-day, market only moderately active, aud prices were weak. The amount of business done at the Board and prices of etocke, etc., will he seen hy reference to our stock tahles.

Below ie the newe from the mines, later than thet given in our Mining Summary:

BELCHER.—The outside improvements of the mine are fast approaching completion. They are still engaged in hlasting out for station on the 1,100-foot level. The south drift on the 1,000-foot level shows rich ore.

CROWN POINT.—The ore in the 1,300-foot level cross-cut is reported as looking splendidly. The east winze also looks very finely. The heat in the 1,300-foot level is very great; average assaye from the east wiuze ie $117.

CHOLLAR POTOSI.—During the week, ending Sept 14th, 1,824 tons of ore were extracted and shipped to mill, assaying $32 per ton.

RAYMOND & ELY.—On the 14th the sum of $32,956 was shipped; on the 16th, $35,211; previous shipments in September, $136,500—total for 15 deys, $171,711; equal to $11,447 per day.

PIOCHE.—A letter of the 14th eaye: Ore in the firet level is 14 inches wide, and assays $160. Second level looks finely; ore two feet two inches wide; average aesay, $188. Third level, old drift, four inches of ore, assaying $131. New developemente in the cross-cut east, third level, do not look so well. Started a new raise 60 feet east on third level. Are now up 20 feet, and indications look as if pay ore is near. A dispatch of the 19th saye that they have shipped 95 tons of first-class ore to mill.

SAVAGE.—During the week ending Sept. 15, 1,308 tons of ore were extracted and 1,063 tone delivered at mille; assays $24.02; on at mine 405 tons.

From the HALE & NORCROSS, during the week ending Sept. 14, 589 tons of ore were extracted and 619 tone sent to mill; 846 tons on dumps. Explorations continue on the 1,500-foot level. A dispatch of the 19th eays that the fire in the ehaft is totally extinguished. They have commenced to replace the hurned tanks in the shaft and everything will be at work again as hefore in a few days.

THE BUCKEYE mine shipped last week $1,-492 and this week $1,208. On the 14th a har valued at $2,941.25 was received—proceeds from 100 tons of ore.

There is a steady improvement in the shaft of the McMahon (Schell creek) mine. The ore is increasing and aseays $380. On 13th the sum of $6,570 was reduced from the 17 tons.

The following assessments had been levied since our laet issue: Atlantic and Pacific Coue. M. Co.; El Dorado Co. Cal. 20 cente; Golden Cherriot, M. Co., Idaho, $1; Savage M. Co., Washoe, $10; Condor M. Co., Ely District, $1; Placer G. & Canal Co., Placer Co., 15 cents; Desert Cons. M. Co., Utah, 20 cents; Chapman M. and M. Co., Ely District, 50 cents; Bowery Coue. Ely Dietrict, $1; and Yuba Gravel M. Co., Nevada Co. Cal., 25 cents.

MINING SUMMARY.

THE following ie mostly condensed from journale puhlished in the interior, in proximity to the mines mentioned.

California.

ALPINE COUNTY.

M. & N. W.—Monitor *Miner*, Sept. 7: The main tunnel is changing this week and good progrees is being made. The down ehaft continues to develop good ore, and yesterday the vein indicated a change from soft clay with a black core of quartz ore, to a regular ore-bearing quartz with a clay casing. The same vein is being followed south on the tunnel level and the second chimney, followed by up shaft 50 ft., is all the way in good ore.

BUTTE COUNTY.

QUARTZ.—Butte *Record*, Sept. 14: The ledges belonging to Halstead and Nesbit have been consolidated, and the Helstead mill will be ready to crush rock soon. Mr. Perkins hae purchaeed the Eureka mill, and will remove it to the Reese ledge, Oregon Gulch. Mc. K. Smith, at the old Columbia ledge, is erecting new werke.

CALAVERAS.

UP COUNTRY.—Calaveras *Chronicle*, Sept. 14: A new quartz mine is being opened betweeu the Middle and Licking Forks, west of Anderson Flat. It appeers to be a pocket vein; 3 different tunnel Cos., driving with the object of tapping valuable veins at a low depth, are rapidly nearing the objective point. Developments on the Lone Star aud the Josephine are very satisfactory. The Bartolo shaft is kept free of water. Some $20,000 in sight. The Grasshopper hae commenced stoping. S. Smith & Co. have drifted 70 ft. on their new chimuey; 250 tons of ore on dump; one-third will average $45 per ton; the balance from $5 to $15 per ton; vein 9 ft. wide. Petticoat shaft, 370 ft. deep; north level 340 ft. Prospecte at the Champiou (Sanderson) look very flattering. The chimney is lengthening in depth and the quality of ore improving.

"SHAW" CLAIM.—Mr. Duryea is preparing to work it on e gigantic ecale.

SANDERSON.—Exceedingly rich rock hae been struck.

HUDSON.—The work of putting up hoisting worke ie heing puehed rapidly. Wheu the machinery ie ready, sinking the ehaft will he resumed. The ledge iu the bottom of the shaft, which is about 150 ft. deep, shows remarkably well.

GWIN.—12 days' rnn of 16 stamps yielded 50 pounds of gold; over $10,000. The ledge in the eouth shaft, from which the quartz crushed wae mined, ie lookiug hetter than ever. It ie fully 5 ft. in width. The shaft is 545 ft. in depth and ie beiug eunk rapidly.

EL DORADO COUNTY.

QUARTZ.—Folsom *Telegraph*, Sept. 14: The Columbia is ehowing well. The shaft is down about 30 ft., and ie contiuually looking better. The Georgia ie the name of a new claim on the eame ledge.

FRESNO COUNTY.

COPPER.—Millerton *Expositor*, Sept. 11: H. C. Daulton has the Ne Plus Copper Mine pumped ont; and the work of extrac

are adding to their working force on their new ditch, and have 150 men engaged in pushing it forward. The ditch will be about 8 miles in length, 6 ft. on top, three on the bottom and 3 ft. deep.

SANTA CLARA COUNTY.

McLeod Dist.—Gilroy *Advocate*, Sept. 14: Robt. Stayton commenced the shipment of 200 tons of antimony ore from his mine yesterday to S. F., under a contract at $43 per ton. The Gilroy Cons. Co. are vigorously prospecting, with most encouraging prospects.

SIERRA COUNTY.

Goodyear.—Downieville *Messenger*, Sept. 7: H. R. Perry & Co. and J. Adams & Co. are pushing work with energy. Dr. J. M. Biher has a shaft sunk 46 ft., showing gold all through the rock, but very fine.

TULARE COUNTY.

Eclipse.—Tulare *Times*, Sept. 7: J. B. Treadwell, who lately bought the Eclipse, has a 5-stamp mill in course of construction, and will set 15 or 20 men to work in the mine immediately.

TUOLUMNE COUNTY.

Chispa.—Tuolumne *Independent*, Sept. 14: Bill Ehler & Co., while ground-sluicing off the surface to lay bare their quartz-lode, at Martinez, found a piece of gold-bearing quartz worth over $80, beside considerable fine gold.

Arastraville.—Cor. same: On the "Hill Claim" the owners have erected machinery for the working of the claim, which prospects about $40 per ton, and are about erecting a 2-stamp mill, with arastra attachment. Father Easton's rock prospects about $50 per ton, and is supposed to be an extension of the Hill Claim. His vein is 8 ft. wide. The next is "Uncle Sam," owned by Fowles, Grey and Smith, who have rock which pays $50 per ton. They have consolidated with the "Virginia," which also is a good vein. Roh. Marshall is running a tunnel into the mountain to strike the extension of the "Uncle Sam."

At Cherokee the Smith Bros. have a valuable lead working, on which they have erected machinery, and have a fair show of making money. The old "Lombardo lead" is being again started up, and bids fair to pay exceedingly rich.

At Soulsbyville they are just commencing to open the old "Soulsby lead."

Excelsior Mill.—Sonora *Democrat*, Sept. 14: The machinery for this mill is on the ground.

Nevada.

ELKO COUNTY.

Silver Zone.—Elko *Independent*, Sept. 14: Very rich ore has been struck at several different points situated on three different slopes of the mountain.

Wyomino District.—On the Mountain King considerable work has been done.

On the Minere' Rest, a tunnel has been driven which tapped the ledge about 80 ft. below the croppings. The vein is large and extremely rich.

The owners of the Mardis have an incline down 70 ft., showing a ledge 6 ft. in width, from which they have shipped considerable ore.

A tunnel has been run into the Brooke ledge, striking it 60 ft. below the surface, and showing a vein 7 ft. wide. Ore from this mine milled yielded $272 per ton.

Strike in Railroad.—An immense body of ore of great richness was exposed a few days since in the lower adit-level on the Last Chance vein. Mr. Hussey has at least 20,000 tons in sight in the Last Chance. Assays from the new strike show from $200 to $400 per ton in silver and the average not less than 55 per cent. lead.

EUREKA.

Welsh King.—Eureka *Sentinel*, Sept. 12: An immense cave has been struck, the bottom of which a long pole failed to reach.

Enterprise Tunnel is in 75 feet. The rock is very hard and progress is slow.

Spruce Mt.—The Ingot smelting works will be ready to fire up by the 17th inst.

Excelsior.—The mine has been closed for the present, although an immense body of ore is in sight.

New Hoisting Works.—The Eureka Cons. Co. has just completed 2 new hoisting works at its mines on Ruby Hill.

ELY DIST.

Pioche Phenix.—Ely *Record*, Sept. 8: Capt. J. Hardy has let a contract to sink a shaft 500 ft., which will be used as the main working shaft. The contractors are 20 ft. down, and in 30 days 100 ft. will be reached, by which time the hoisting works ordered in S. F. will arrive and be put up over the new shaft.

Newark.—A house has been erected over the works, 30 by 50 ft. in size. The engine, of 30-horse power, runs nicely. The shaft is 300 ft. in depth, and the contract let for 100 ft. is progressing rapidly, there being about 30 ft. more to finish. The ledge matter is about 2 ft. in width, and the ore of a rich-gray appearance, interspersed with fine galena. The shaft is vertical all the way, and timbered in first-class style.

Arkansas.—Since our last visit they have been stoping out ore at the first level and have a large amount in sight at the 122-ft. level. There is a large body of rich ore which is being rapidly extracted, but the cream of everything is at the 250-ft. level in the west drift, where the ledge is from 2½ to 3 ft. wide, averaging from $594 to $689 per ton.

Meadow Valley.—Sixty tons of ore leave the dumps for the mill every day, and every other day $10,000 of fine bullion and $1,000 worth of base bullion leave the camp. The mill is in perfect running order, having been fully overhauled. The Summit shaft has a depth of 260 ft., and 2¼ ft. are being sunk daily. No. 3 is down 620 ft., vertical measurement. A new station will be made in two or three days. Good stopes of ore are presenting themselves in the Fitzhugh tunnel.

Ivanhoe.—The prospecting shaft has reached 250 ft., the hoisting being done with 2 windlasses, one placed at 150 ft. from the surface. The shaft will be sunk 75 ft. further, and from present indications will result in developing a fine body of ore.

Chief of the Hill.—This mine is being worked through the old Burke tunnel. About 20 tons of red ore has been taken out; 2 shifts are being worked and 16 men employed.

Mazeppa—A depth of 140 ft. has been sunk, and a fine body of ore struck, averaging $380 to the ton.

Page and Panaca—First class hoisting machinery is in operation, and works to a charm.

Jelly Traveler.—Fine ore coming in at the depth of 60 ft. A double shift will be put on to-morrow.

Pacific Tunnel.—The tunnel has reached a length of 975 ft., and the prospects are favorable.

Louise.—Drifting at 80 ft. continues, and promises finely.

Excelsior.—Mr. Caldwell, is shipping ore daily to the Magnet Mill. Fine bodies of ore have been struck 150 ft. from the surface.

Magnet Mill.—The Magnet Mill, Bullionville, started up on Thursday.

Khedive.—Brown chlorides are coming in eight.

Chapman.—Depth of shaft, 41 ft. A contract let a short time since for 60 ft. will be completed by the 10th of this month.

Sunbeam.—A late strike was made at 230 ft. with very heavy rich ore.

Townsend.—Yesterday good ore was struck, Magoie—Down 173 ft. and looks well.

HUMBOLDT.

Bullion—Unionville *Silver State*, Sept. 14: Amount shipped from the Arizona since our last issue, was $6,920.

Discovery.—A large and very rich gold bearing ledge has been discovered, within a few days, in Sacramento District.

Bolivia Dist.—About a dozen ledges have been discovered and located. Almost pure carbonate and gray sulphuret ores have been found in several of the ledges within a foot of the surface.

Relief Dist.—The Central Pacific is opened to 150 ft. from the surface to the bottom of the shaft. The Batavia and Pacific mill is running to its full capacity on ore from the mine. The average yield of the ore worked at the mill is $60 per ton. The last lot shipped from which returns have been received yielded $606 per ton.

REESE RIVER.

Belmont—El Dorado Co.—Reese River *Reveille*, Sept. 7: Are taking out 10 tons per day of very fine ore from their El Dorado. In the 340-ft. level they are stoping out—and have a breast 7 ft. thick of first-class ore. The Arizona continues to produce its rich chlorides. This Co. is working 30 men.

Monitor Co.—Running levels, raising chutes and continuing their tunnel No. 2, taking out some ore. Working 25 men.

Belmont Co.—Running their 350-ft. level—north and south. Taking out but little ore. Working 15 men.

Silver Peak Dist.—Work is to be resumed quite extensively. Dollarhide and McIntire leave to-day to operate on the Lodi and Tiger mines. The ledges are large, the ores free, and the extraction costs but about $2 per ton. They have about 400 tons of rock out and a large body in sight, all of which will work at an average of fully $100 per ton. They have also purchased the 10-stamp Montezuma mill.

Morey Dist.—There are 3 mines working. The Morey Co. are working 15 men on the Magnolia ledge through an incline 100 ft. deep; pay streak small, but rich.

Rhodes & White have just started to open their mine and are getting some good ore.

Olson & Co. are sinking an incline on their ledge.

The Morey Co. are about putting up a 10-stamp mill the grading for which is completed. There are about 40 men in the dist.

WASHOE.

Phil Sheridan.—Virginia *Chronicle* Sept. 14: This mine is raising an air shaft.

Sierra Nevada.—Is keeping the mill running on rock from the top levels.

Senator.—Is building new hoisting works, which will be finished next week, when they will resume work in the shaft.

Utah.—The shaft is down 146 ft. in good working ground, and are making rapid progress with the work.

Yellow Jacket.—On the surface they are busy putting in the new pump engine.

Bullion.—Is prospecting on the 800-ft. level. The drifts are in barren quartz and porphyry.

Caledonia.—Is drifting in the vicinity of the ledge, and the face of the drift shows a great increase of water.

Julia.—Has started up their new machinery and have the water reduced so as to admit of their resuming work on the lower levels again.

Knickerbocker.—The drift from the 400-ft. level is in 105 ft., occasional seams of quartz having been cut.

Baltimore.—The shaft is down 246 ft. When 400 ft. has been reached a station will be opened and a drift started west.

Belcher.—The ore stopes on the 1,000 and 1,100-ft. levels never looked better. Everything is progressing finely.

Red Jacket.—Has everything ready for the erection of new hoisting works. The mine is looking better than at any time since it was opened. Work progressing finely.

Opuir.—The winze from the second station is looking well, although the quartz bears but little ore.

Woonville.—Is looking well and the Co. are prepared to put up new hoisting works.

Cons. Virginia.—Is drifting south on the 500-ft. level from the shaft, and cross-cutting east. On the 1,200-ft. Curry level, they have discontinued the cross-cut and have started to drift north again.

Succor.—In the old mine they are prospecting, and are not getting out much ore. The new shaft is in working order, and the new engines are working well.

Crown Point.—Is taking out about 340 tons per day. All of the winzes and ore stopes are looking well.

Gould & Curry.—The new station at the 1,600-ft. level has been opened and the drift is in some 36 ft. No new development on the 8th and 10th stations, but still prospecting.

Kentuck.—Taking out about 50 tons of good milling ore per day. The drift on the 1,100 is making good progress. The bullion receipt for Aug. was $20,543.34.

Challar.—Taking out about 7 tons per day from the tunnel. At the shaft they have set up the pumping engine and are prepared to put down the pumps. Bullion receipts for Aug., $52,201.58.

Jacon Little.—The tunnel is in a little over 300 ft., at which point ore is rapidly appreciating in value; assays $2,804.44 per ton.

Imperial.—The 1,600-ft. station is opened and timbered, and drifting has been started. The winze from the 1,600-ft. level is in quartz. Cross-cutting on the 1,500 ft. level south. On the surface they are cleaning and getting ready for the new pumping engine.

Savage.—Incline is down 160 ft. The main ore stope on the 5th station is looking well, and they expect to cut the same body from the second. They are putting new guides in the shaft and will have them finished in about 4 days.

WHITE PINE.

Bullion.—White Pine *News*, Sept. 7: The shipment during the past week was $15,413.94.

Treasure Hill Mines—Eberhardt & Aurora Co.'s Mines.—Eberhardt and Blue Belle sinking shaft, working night and day. The lower tunnel in the south end of the North Aurora is being worked by contract; are sinking the North Ridsdale shaft to connect with the South Aurora tunnel. The Central shaft is being worked night and day.

East Sheboygan.—During the week a drift has been commenced from the air-shaft west, to form a connection with the south drift.

O. H. Treasure.—Considerable is being done. Wheeler tunnel is being driven ahead and are still in spar and vein-matter. Shipping ore to to Smoky mill daily.

Belcher Con.—The ore in the old Blasdel work continues in quality and quantity. Are shipping 40 tons daily to mill.

Copper Glance.—The west drift and north shaft present very favorable appearances. Ore of good quality is being extracted from each. The north shaft is down 40 ft. in ore of good grade.

Silver Plate.—The ore being taken out is of good quality, and preparations are being made to have it worked.

Truckee.—Are working constantly and the mine is looking well.

Sunbeam.—Are continuing to run east the drift in a good quality of ore, and are hoisting out from the Moscow shaft.

Silver Wave.—Have some good ore in the drift of the Boswell works.

Hamilton M. & M. Co.—In the Pogonip and Othello mines work is going ahead, showing some improvement

Outside Dist—Schell Creek.—The Tehama Co. is pushing work ahead in order to build their 20-stamp mill.

Robinson.—The Canton Co.'s furnace is undergoing repairs, and will start up again soon.

Mills—Big Smoky.—Running on O. H. Treasury ore.

Manhattan.—Running steadily on ore from the Beecher Cons. Co.'s mines.

Schell Creek.—Schell Creek *Prospect*. Sept. 7: McMahon looking better every day, sinking shaft in quartz and drifting in 2 places. There is a large quantity of good ore on dump.

Summit.—Work commenced this week; working in ore with every prospect of having a large body after a little more work has been done.

Jupiter — Still driving the tunnel; it is the intention to run the tunnel in about 100 ft., and then commence sinking. The incline shaft is down some 40 ft. in fine quartz.

Kavanaoh Tunnel.—In about 65 ft. in soft granite.

Sohell Creek. — Work being prosecuted night and day on the tunnel, which is in about 190 ft.

Mountain View — Being worked steadily; shaft down 25 ft. in quartz which shows mineral.

Tehama.—There are between 30 and 40 men working, taking out quantities of fine milling ore. The tunnel is in 250 ft., the face of it showing quartz—some of it decomposed.

Queen Springs Mines.—El Capitan—Looking better than ever.

Sweepstakes—Being worked steadily; drifting in good ore.

La Bross Tunnel.—During the week a good strike was made, 110 ft. under the surface. The owners have struck a ledge 3 ft. wide, of very rich ore.

Arizona.

Mines and Mining.—Prescott *Miner*, Aug. 31: T. H. Head is at work on the discovery claim of the Davis, running a tunnel by contract, and is in about 35 ft. The vein is 7 ft. wide and on the east wall carries a streak of ore about 8 inches thick showing considerable galena and stained with carbonate of copper.

At Wallapai E. M. Smith & Co., are sinking shafts on several veins and have met with good success. On the Empire at Chloride, they have 2 shafts and have struck a large body of rich ore. On the Little Tiger, near Cerbat, they have a shaft 100 ft. deep and are in good ore all the way down.

The Pioneer Mill at Mineral Park, is doing satisfactory work, and the ore crushed are paying well.

Mr. Baker is building a furnace at Chloride which is near completion.

A. B. Elder's furnace at Cerbat, has stopped after running out 100 bars of bullion, about 5 tons in weight, which was shipped to San Francisco.

Two new veins of argentiferous galena have lately been discovered near the Champion, south of Cerbat some two miles, the veins are large and promise well.

Colorado.

Items.—Longmont *Press*, Sept. 4: Lewis McGlothlin recently sold a small portion of the Fourth of July lode, in Grand Island Dist., to parties from Ohio, for $8,500.

John Ellingham and Dick Crow are working their claims on the Columbia, in Ward Dist. They have bought a 10-stamp mill to crush their ore, and are now putting it up.

Ten tons of ore from the White Cloud lode at Gold Hill, has been shipped to Swansea, Wales. It returns $800 to the ton.

Idaho.

Local Record.—Owyhee *Avalanche*, Sept. 7: Ida Elmore.—The big reservoir at the bottom of the 8th level is completed, and, by means of tubing in the various levels, catches all the water in the mine. Besides this a strong dam is being put in at the mouth of a cross-cut running east and connecting with the 6th level, which lets in about 11,400 gallons daily. They have just struck a rich chimney close to the shaft in the bottom of the 8th level. The ledge is fully 30 inches in width of ore that ought to pay at least $100 per ton.

Golden Chariot.—The shaft will be down for the 9th level by the 15th inst. The winze is down about 28 ft., the ore looking well.

Belle Peck.—Charley Peck has just struck a rich chimney, about 250 ft. north of the old shaft, and is preparing to sink a shaft thereon. The vein is 5 ft. wide, with an 18-inch pay streak.

They have struck it richer and more extensive than ever in the Mahogany.

Montana.

Bullion.—Deer Lodge *Independent*, Sept. 17: The Phillipsburg mines have produced over $65,000 worth of bullion during the past 90 days.

Cedar Creek.—About 250 men are engaged on Cedar and its tributaries. The first mining, ascending the gulch, is 10 miles from the mouth, near Kiyus. C. L. McKay & Co., are working with hydraulic on the bar, south side. Miller, Powers & Co.'s big flume in the creek opposite, is within 4 ft. of bed rock. The last clean up exceeded $800, and as the flume draws nearer the rock, increased pay is expected. Half way between this point and Lincoln, John Keneeley & Co. are working in the bar on the opposite side and are taking out big pay with ground to last for years. Donlan & Co. are working near Lincoln on the old bed of the creek, and are doing well. Osborn & Co. are working in the bar opposite Lincoln, making $10 per day to the hand.

The State Tax.—The total assessment of property in the State, as reported to the State Board of Equalization by the different County Auditors, is $604,583,799. The State Board of Equalization are required to levy for State purposes for the 24th and 25th fiscal years, each an ad valorem rate of taxation upon each $100 of taxable property of this State as will raise revenue for each of said years. First, for general fund, $1,119,000; second, for school fund, $240,000; third, for sinking and interest fund of 1857, $140,000; fourth, for sinking and interest fund of 1860, $9,000; fifth, for State Capital fund, $200,000; sixth, for military fund, $60,000; seventh, for soldiers' bounty interest and sinking fund, $43,000; eighth, for soldiers' relief, interest and sinking fund, $25,000; ninth, for Pacific Railroad fund, $105,000; tenth, for State Normal School building fund, $75,000; eleventh, for State Capitol bonds, interest and sinking fund, $35,000. Total, $2,122,000. Now to raise the required amount of $2,122,000, say they levy a tax of 37 cents on each $100 of the total assessment in the State. $604,583,799 will raise a revenue of $2,236,960,05, being $114,960.05 more than is required by the State to meet its expenses. But as there will be more or less delinquent taxes in the State, the $114,960,05 will fall short. We presume they will make the tax about 40 cents on each $100 in order to leave a margin for delinquents. Last year the tax was 86 cents, making a difference of 46 cents, or less than one-half the tax of last year. So much for the State Board of Equalization.

Interesting Lecture on Preserving Fruit and Other Articles.

By E. S. CARR, M. D., L. L. D., Prof. Agriculture and Horticulture, University of Cal.—Before the Oakland Farming, Horticultural and Industrial Club, Aug. 30th, 1872.

[Concluded from last issue.]

The Whole Process of Preserving

Depends on excluding the air, and changing the structure of the food, so that it will not decompose rapidly. This is done by heat and by the process of cooking. A great variety of arrangements are resorted to, to produce this. Let me call your attention to one or two points in this connection, more especially with regard to meats. We use materials of antiseptic or preventative decay character. The most common is common salt. If we sprinkle our meats over with it they will be preserved. Olive oil preserves in this way animal food. When a quantity of salt is sprinkled over it, it abstracts the moisture, and protects the fibre from the action of the atmosphere, and solidifies it so that it will not undergo decomposition from the action of the atmosphere. But meat is not as nutritive this way. It always becomes hardened. It will keep through the hot season but it is very hard when we come to eat it. Now the water in which it is kept, and meat consists largely of water, holds in solution the juices of the meat. Press them out and we have a nutritive substance, which we take out in making beef tea. The nutritive matter is taken away and only the solids remain. You can skim it off when you boil the liquor. This is like the white of egg, and forms the nutriment. By preserving in this way, meat is rendered less nutritious and is not so easily digested on account of being hard. A small amount of salt will preserve meat a long time, and not impair the quantity much.

Smoke and Creosote for Preserving.

It is also well known that smoke is used for preserving. There is in smoke a substance called creosote. It is that substance which makes the eyes smart when exposed to smoke. I have creosote in this bottle. It is of such a nature that when brought in contact with organic substances it hardens them. Take a piece of meat and expose it to smoke, and it penetrates through the mass of the meat, and gives it the flavor and by acting on the organized matter renders it more insoluble. I now put the white of egg in contact with creosote and the white of egg, which is liquid, will undergo changes. [Dr. experiments]. You see that the white of egg coagulates and looks as if it was boiled. The substances that exists in the juices of the meat is of like character to white of egg, and the vapor of smoke hardens it; so smoke preserves articles of food, particularly animal food, from decay. There is another substance possessing something of the nature of creosote. It is extracted from coal tar.

Carbolic Acid

Is one of the most purely preservative substances in nature. This is generally used as a disinfectant. If we use a little of it dissolved in water, it will act on the substance we wish to preserve and will prevent its decay. If I bring it in contact with the white of an egg, we shall find that it will be effected in the same manner as by creosote. (Experimenting.) Let me wet the end of a rod with it or pour a little liquid on it only. I put only a single drop on a part of the white of egg on the side, it coagulates it, and you see that nearly all the bottom part is coagulated. This then preserves it and prevents it undergoing decay. This substance remember is only sometimes used, as the flavor it gives meat is a little different from that of creosote and is offensive. But if from one to four parts of carbolic acid be put in 1,000 parts of water, meat may be exposed to its effects without any offensive resultant odor. It is sometimes used on a limited scale to preserve meat.

A Variety of Other Substances

Are also used. Alcohol is used and acts in part the same way. Suppose I put a little white of egg in a vessel. I might take brandy containing 50 per cent. of alcohol, and bringing it into contact with the white of an egg the latter would coagulate at once. Alcohol acts like carbolic acid—alcohol affects white of egg in nearly the same way. In all animal and vegetable substances there are bodies like white of egg, the nature of which is to undergo decay when brought into contact with the oxygen of the air, with water, and when exposed to a favorable temperature. Alcohol preserves not only by hardening and making substances difficult to decompose but it also prevents the growth of infusorial vegetable substances. This substance in the juices of animal and vegetable matter, like white of egg, takes oxygen from the atmosphere, and then begins decay. There is a vegetable growth found in wine formed during fermentation. This is the yeast plant. It is as much a plant as a tree. It consists of a cell. Alcohol, if it exists in any considerable quantities, will prevent the growth of this vegetable substance. This is why we never can make wine beyond a certain strength, as far as alcohol is concerned. We may have sugar enough to form from 25 to 30 per cent. of alcohol in the juice of the grape, but we never can form 20, because

Alcohol Prevents Formation of the Yeast Plant.

And so it is in the juices of meats and plants. Always in connection with the decay of animal substances there is found a little new plant. It is a little vegetable substance, but in alcohol that substance cannot be formed. You will have a substance there acting on a substance like the white of an egg, and another substance preventing the formation of the yeast plant. You can preserve fruit by having 20 per cent. or more of alcohol. Ordinary liquors have 50 per cent. of alcohol, and wines from 10 to 20 per cent.; weaker ones from 6 to 8. California wines possess from 6 to 10 or 13 per cent. This is not enough to prevent decomposition. If we have 20 per cent. it will, and the more the better. There are a variety of materials that act on animal and vegetable substances in the same way as this.

Animal and vegetable substances are much alike in the matter of decay, and the same principles are involved in their preservation. There are several other materials besides those I have mentioned that prevent decay. Some are of a poisonous nature. We cannot use them in ordinary preservation, but we can in the preservation of articles not intended to be used as food—flesh, skins, etc. We may make use of certain,

Poisonous Substances,

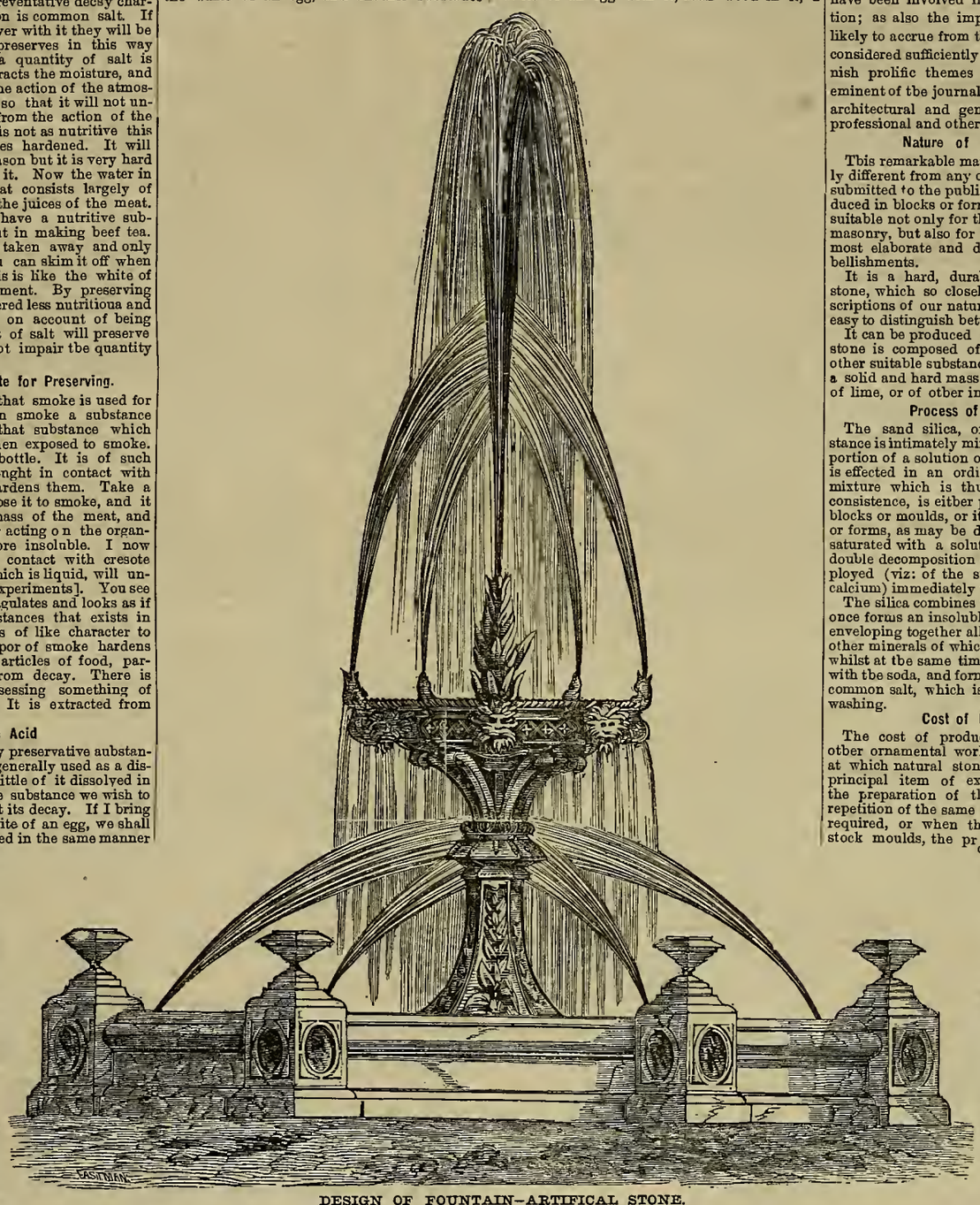
Such as arsenious acid, blue sulphate of copper, sulphate of zinc, chloride of mercury, etc. I will show you how they act on albumen, for albumen is the matter that goes to decay in plants and animals, as mentioned before. I bring corrosive sublimate dissolved in water. It consists of quicksilver and chlorine, a greenish gas, and is used for making blue glass. I put a little in contact with the white of an egg and it acts like alcohol. Now it is a very valuable preservative substance. It will preserve fruits, meats, etc., but it poisons food. It makes substances insoluble. Blue vitriol acts in the same way. I take some in a tube, bring more white of an egg and it acts in a precisely similar manner. I will pour blue vitriol on, and it will cook the white of an egg. [Experimenting.] See, it is completely cooked, as completely cooked as when I put in corrosive sublimate. Now if I wet the white of an egg with it, soak wood in it, I can prevent its decay, and so also can

We Preserve Timber,

Just as we do by creosote. If we take the vapor of coal tar, and apply it to wood, it will act in the same way also as I have shown in the experiment. It will harden the substance in the sap that is like the white of an egg—it will harden it so as not to undergo decay, and the wood will remain unaffected by ordinary decomposing influences for a long time. Blue vitriol or corrosive sublimate applied to wood accomplishes the same object. If we apply this to the lower end of a tree trunk, it will absorb it, and the entire trunk will be more or less saturated, so that it will not undergo decomposition for a long time. These substances cannot be used for preserving food, but are used when we wish to preserve for other purposes.

Preserving Meats.

By dipping fresh meats into paraffine melted at a temperature of 240° degrees the paraffine will form a coating by which the air is excluded. Meats are preserved in Australia in melted fats. We can thus preserve the meats of sheep and cattle that we formerly killed for the hides and tallow. By taking these and dipping them in melted fat at 240° degrees, we expel the moisture from the surface, then putting in casks and filling up with melted fat it will keep for a long time. And so other agencies are made use of in the same way to accomplish the same end.



DESIGN OF FOUNTAIN—ARTIFICAL STONE.

Ransome's Patent Stone.

The creation of a new branch of national industry in the production of a durable stone applicable to engineering, architectural and manufacturing uses; the toilsome and laborious thought, and the cost and perseverance which have been involved in perfecting the production; as also the important economic results likely to accrue from this invention, have been considered sufficiently important topics to furnish prolific themes for writers in the most eminent of the journals devoted to engineering, architectural and general science, as also in professional and other papers.

Nature of the Material.

This remarkable material, which is essentially different from any other which has yet been submitted to the public, and which can be produced in blocks or forms of any dimensions, is suitable not only for the construction of solid masonry, but also for the manufacture of the most elaborate and delicate architectural embellishments.

It is a hard, durable, and beautiful sandstone, which so closely resembles the best descriptions of our natural stones that it is not easy to distinguish between them.

It can be produced of various colors. The stone is composed of clean silicious sand, or other suitable substance, firmly aggregated into a solid and hard mass by the means of silicate of lime, or of other insoluble silicates.

Process of Manufacture.

The sand silica, or other mineral substance is intimately mixed with its proper proportion of a solution of silicate of soda. This is effected in an ordinary pug mill, and the mixture which is thus rendered of a plastic consistence, is either pressed or rammed into blocks or moulds, or it can be rolled into slabs or forms, as may be desired, and is afterward saturated with a solution of calcium, when a double decomposition of the two solutions employed (viz: of the silicate of soda and the calcium) immediately takes place.

The silica combines with the calcium, and at once forms an insoluble silicate of lime, firmly enveloping together all the particles of sand, or other minerals of which the stone is composed, whilst at the same time the chlorine combines with the soda, and forms chloride of sodium or common salt, which is removed by subsequent washing.

Cost of Production.

The cost of production for mouldings or other ornamental work is much less than that at which natural stone can be procured. The principal item of expense in such work is the preparation of the moulds; but when a repetition of the same articles to any extent is required, or when they are made out of our stock moulds, the proportionate cost of the mold chargeable upon such article would be inappreciable.

The Ransome Stone, while exhibiting the characteristics of the best natural free stone, is claimed to be more durable, and can be produced of any desired tone of color. It can be moulded into any form, or made in masses of any dimensions.

It requires no artificial drying or burning. The cost for moulded and ornamental work is much less than that of natural stone. The stones can be made hollow as readily as solid, thus lessening the cost of carriage, and giving great advantages in overhanging cornices and in the decoration of wooden structures and all similar purposes.

Building Purposes.

It is admirably adapted to the construction of steps, tiles and landings; cornices, balustrades, etc.; plinths and copings; string courses and water tables; brackets, trusses, and corbels; capitals, columns, and bases; window and door sills; jambs and heads; rusticated and other quoin and ashlar stones; ashlar facings to bond with brick work; chimney tops, sinks, mantlepieces and stove casings; hollow walls or blocks; and particularly for ornamental work, as fountains, vases, urns, etc.; curbs and border edging; balustrades, terrace steps; sun-dials; flower boxes for lawn or window, tree pots, gateways, copings, etc.

The accompanying engraving is a truthful illustration of one of the many beautiful designs of fountains manufactured by the Pacific Stone Company, holding the Ransome patent for the Pacific Coast. Office, No. 10, Bush street, San Francisco.

Useful Information.

New Process for the Preservation of Alimentary Substances.

In a communication recently made to the French Academy, M. Sacc described his process and submitted specimens of meat and vegetables so prepared. The food to he preserved is placed in a barrel, with layers of powdered acetate of soda, in the proportion of one-fourth hy weight. In winter, the temperature must be raised to 20° C. After twenty-four honrs, the barrels must be turned, and after fourty-eight honrs the process is complete, the salt having absorhed the water of the meat, which may then he headed up in the pickle, or dried in the air.

If the barrels are not full, they are to be filled up with hrine of one part acetate of soda in three parts water. The pickle is evaporated down to half its hulk, crystallizing and regenerating for use one half the salt employed.

The mother liquors form an excellent extract of meat, representing three per cent. of the total weight, and must be preserved and poured over the preserved meat when prepared, so as to restore the original flavor of the fresh meat, of which it is otherwise bereft hy the retention of the potassic salts in the pickle.

For cooking, the preserved meat must be steeped for from twelve to twenty-four honre, according to size, in tepid water containing ten grammes of sal ammoniac per liter. This salt decomposes the acetate of soda contained in the meat, forming salt, and also ammoniacal acetate, which causes the meat to swell, and restores to it the odor and acid reactions of fresh meat.

The bonee also yield an excellent and tasty soup. By adopting the precantion of eimply removing the intestines, animals, etc., may thus be preeerved whole. Fieh, poultry, and game have been so treated, with excellent results. Meat may be dried in a stove, losing one quarter in weight therehy, in addition to one qnarter lost in pickling; bnt, in general, fish cannot he dried at all.

Vegetahles are eimilarly prepared, loosing generally five-sixths of their weight; before salting, they shonld he heated nntil they lose their rigidity. In twenty-four hours they may he pressed and dried in the air. For use they mnst be steeped for twelve honrs in fresh water, and then hoiled as if fresh. Potatoes must be steamed hefore salting.

Finally, all food thus prepared must be kept perfectly dry, as the salt absorhs moisture from the air.

New Commercial Product—"Ceresine."

Céresine is a new product deetined to play an important part as a lighting material. It is obtained from ozokerit or fossil wax by the following process: Ozokerit is heated up to a temperature ranging fram 250° to 300° Cent. in order to separate, hy volatilization and snbseqnent condensation, tbe liquid oils. The mass being cooled down to 60°, it ie heated with from 10 to 20 per cent. of the sulphnric acid of Nordhansen. The temperature is then raised to 100°, and care is taken to msintain this heat until the precipitation of the carhon takes place and forms a viecous reeidue, which is carefully eeparated from the supernatant oile, heated, and then treated with ahout ten per cent. of diluted sulphnric acid, afterwards neutralized hy aid of an alkali. The mass is then heated to ahout 180°, poured upon plates and pressed through linen cloths in order to separate the gresey matters; this residue of wax can then he melted and filtered. The prodnct is céresine, which is employed in the manufacture of candles.

The Philosophy of Tanning.—Everyhody knows, we presume, that leather is made hy steeping hides in an infnsion of certain vegetahle substancee which contain a compound called *tannin*. The cheapest sonrce of this tanning principle is oak hark, bnt it is found in greater or less quantity in many other plante, as in the grape, the hop, coffee, tea, etc., and from these it can he dissolved out with water. The ekins of animals consiet mainly of albumen and gelatine; indeed these substances are ahundant in all animal matter. In the hlood and in milk the albumen is merely suspended, ae it were, in the water which conetitutes hy far the larger portion of these fluids. Tannin and albumen have a remarkahle affinity for each other, and unite as soon as they are hrought in contact. The result of their union is the insoluhle, tough material which gives leather its distinctive character. When the hidc ie steeped in the infusion of oak hark, the albumen of the former thus combines with the tannin of the latter, and the loose, soft tissue of the skin is converted into hard, tongh leather.

Chemical Plants.—The *Druggist Circular*, gives the following receipt for making chemical plants: Take a glaes tumhler, fill it with white or hetter, pure yellow sand to the hight of two inches, and pour on a mixture of equal parts of silicate of potash (water-glaes) and dietilled water. Then drop in smsll lumps of different metallic salts, ae eulphate of copper, eulphate of iron, eulphate of zinc, hichromate of potassa, and so ou, heing careful that no two piecee are touching. In a few houre there will grow up etems and hair-like threade, filling the whole tnmbler ae far ae the mixture goee.

To Temporarily Repair Broken Axletrees.

Whenever an axletree of a carriage or lnmher-wagon breaks down, it nsually occurs at a long distance from a ahop where it can be repaired. By the exercise of a little mechanical skill at euch a time, a teamster can make a temporary repair snfficient to enable him to reach home, or the place of destination, with but little delay. We will snppose, for exauple, that one axle-arm ie hroken entirely off. Remove the load; hlock np the axletree an inch or two higher at the hroken end than at the other; then procure a piece of tough rail or scantling, or a piece of a small tree, abont four feet long; dress off one end, tapering with an ax, for an axle-arm, so that it will fit the hole in the hub, and lash the piece to the hroken axletree with piecee of rope or wire. The rough piece may he fitted to one side or heneath the axletree. After the rope has heen drawn up as tightly ae practicahle, let two or three thin wedgee be driven nnder the rope; after which wet it thoronghly, and the rope by contracting will hold the temporary axle-arm with sufficient firmnees to enable the teamster to proceed with his load. In ease uo hit is at hand to bore a hole for a linch-pin, cnt a groove aronnd the axle-arm near the extremity, and wind pieces of rope or twine aronnd the arm nntil a ridge ie formed of sufficient eize to hold the wheel from running off. Should the axletree give way near the middle, rather thau at oue of the arms, fit a piece of scantling or stont rail heneath it, letting the piece extend from wheel to wheel, aud lash the ends to the axletree near the wheels. Iu case it were necessary to ride several miles to ohtain pieces of rope and an ax hefore one could make the necessary repairs, it might be far more satisfactory to do so than to procure another vehicle, tranefer the load, and afterwards retnrn for the broken one. In case a wheel were to break down, a man who is half a mechanic could easily fix a piece of plank beneath the hub, which would slide ou the gronnd, like a runner, for several miles.

The Gas Jet for Removing Oln Paint.—In buildings which are lighted with gas, nothing can he more economical, speedy, and free from deleterious effects for this purpose than a gas jet. All that is required is a few yards of ruhher tuhing, arranged to suit one of the gas pendants. The tuhe can be held in the left hand, and the knife or chisel in the right. The jet or flame is then made to strike the surface, and, when the paint is warmed through, the knife is need quickly in removing it. The gas jet does not give out a great amount of heat, and therefore does not injure the joints of the body, or draw out the oil from the wood to an extent that delays the after painting. In removing paint, the heat shonld never he so intenee ae to qnickly raise it np into blisters; it is only necessary to warm it through.

The English Postal Teleoraph System seems to he working better and better, as the people and officials become better acquainted and more accustomed to it. All the telegraphs there are now owned hy the Government, and short messages may he sent to any part of the kingdom for twenty-five cents. The government issnes what is called postal telegraph cards, bearing a twenty-five cent postal stamp. On this card yon write your telegraph meseage, and drop it in the lamp-poet letter-box. The letter-carrier delivers it to the telegraph department, and the message is promptly forwarded to ite destination. The English government has heen petitioned to pnrchase all the suhmarine telegraph cablee leading from England.

When to Sell Grain.—A eeriee of experiments, instituted to eet the average loss in weight hy drying, show that corn loses one-fifth, and wheat one fourteenth by the process. From this the etatement is made that farmers will make more hy eelling nnshelled corn in the fall at seventy-five cents than the following summer at one dollar a hushel; and that wheat at 1.33 in December is equal to 1.51 for the same wheat in the June following.—The estimate is made on the hasis of intereet at seven per cent.; and takes no account of loss from the depredations of vermin. These facts are worthy of consideration.

Friction.—Dr. Kane made the discovery in the Arctic regions that it wss as hard to draw a eled upon snow when the thermometer wae thirty to sixty degrees helow zero as upon sand. The same thing was long before known to teamsters in the Northern states, who often remark that their loads draw hard when the weather is so cold that the runnere "creak" or "growl" in passing over the snow.

Tea Growing in India.—The experiment of growing tea in India ie proving quite succeseful. In 1862 the crop wae estimated at 1,000,000 ponnds; in 1871, at something over 20,000,000. It is cleimed that Indie can now compete with China in producing teas of the hest qnaliiy.

How to Stop a Pinhole in a Lean Pipe. Take a ten-penny nail, place the square end upon the hole, and hit it two or three light hlows with a hammer, and the orifice is cloeed as tight ae thongh you had employed a plumher to do it at a cost of a dollar or more.

Science and Art.—Science teaches us to know; Art, to do. In Art, truth is a meane, in Soience, it ie the end.

Good Health.

Duties of an Apothecary in the Olden Times.

Dr. D. Campbell Black, in an address on the relatione of prescriher to dispenser, hefore the Glasgow Chemists' Association, qnoted from an old work the following qnaint rnles for an apothecary's life and conduct:

1. Muet fyrst serve God, foreee the end, he clenly, pity the end.
2. Must not he snborned for money to hurt mankynde.
3. Hie place of dwelling and shop to he clenly, to please the eencee withal.
4. Hie garden must be at hand, with plenty of herhs, seeds, and rootee.
5. To sow, set, plant, gather, preeerve, and keep them in due tyme.
6. To read Dioscorides to know ye nature of plants and berbes.
7. To invent medicines, to choose by eolor, taste, odoar, figure, etc.
8. To have his mortars, stilles, pottes, filtere, glasses, hoxes, cleane and sweette.
9. To have charcoal at hand to make decoctions, syrnps, etc.,
10. To keep his cleane ware close and cast away the haggage.
11. To have two places in his shop, one most cleane for the physic, and a harer place for the chirurgeric stuff.
12. That he neither increase or diminish the physician's file (i. e., preecription) and keep it for his own discharge.
13. That he neither huy nor sell rotten drugges.
14. That he peruee often his waares that they corrupt not.
15. *That he put not in quid pro quo (i. e.*, use one ingredient in plaee of another when dispensing a physicians prescription) *without advysment.*
16. That he may open well a vein for to help pleurisy.
17. That he meddle not in hie vocation.
18. That he delight to reade Nicholaus Myrepeus, Valerius Cordus, etc.
19. That he do remember his office is only to he physician's cooke.
20. That he use trus weight and measnre.
21. To remember hie end and the judgment of God; and thus do I commend him to God, if he he not covetous and crafty, setting his own lucrs hefore other msn's help, euccour, comfort, etc.

Death by the Nerves. — When a man is wounded in battle, even slightly, he is likely to he knocksd prostrate, which is in fact often the first intimation that he gete that eomething has happened. It is not the force of the blow nor the wound that brings him to the ground, for he may preeently get np and walk away, or fight again, if he is very determined; but it ie the shock upon the nervoue eystem. A similar shock may come throngh the mind, through any accident, just as would he the case through a stroke of lightning. Sometimee it may be eo violent that death will overtake the victim beyond recall by any reaction, while there is no sufficient injury to the tissues or organs, or loss of hlood to cauee a fatal result. A eudden death occurred recently in a prominent family, in this city, where the yonng man had no disease of any tissue that could cause alarm, and no one could have predicted the result. Nothing conld be eaid of it, but that some violent ehock fell upon an enfeehled nervoue syetem and took life away hefore the trouhle, whatever it was, could prononnce itself by disorganizing any part of the hody. Civilizetion and its intenee activities being a great etrain on the nervous powers; physicians have to hear this in miud and direct their counscls accordingly.

A great desideratum is to discover some remedy which will act promptly as a conuter shock. In cases of a certain kind, as in lightning-etrokes, dashes of cold water, suddenly given hy the pailful, sometimes avail. Perhape when the nervous force is hetter understood it may come within a control as decisive as that over galvanic currents in a cahle, which are charged and discharged at will. Meanwhile there should be snfficient knowledge disseminated among the people to enable them to exercise caution in avoiding whatever is destructive of nsrvoue vitality.—*Iowa School Jour.*

Dentistry in the Ancient Daye.—According to Dr. Rsid, the ancients were proficiente in the dental art. Casseliue wae a dsntist in the reign of the Roman triumvirs, and gold was ueed for the filling. As early ae 500 B. o.. gold was thns used, and gold wire wae employed to hold artificial teeth in position; and it does not seem thsn to have heen a new art. A fragment of the tenth of the Roman tables, 450 B. c., has reference to the hurial of any gold with the dead except that hound around the teeth.

Herodotus declares thet the Egyptians had a knowledge of the diseaees of the teeth and their treatment, 2,000 yeers hefore Christ. In Martial, Casselius is mentioned as ether filling or extracting teeth; hut he specified that he could not polish false teeth with tooth-powder. Luciue mentione an old maid that had bnt four teeth, and that they were faetened in with gold. These facte cover a period of 600 years.

Mysterious Influences.

Persons sometimes feel remarkably well—the appetite is vigorous, eating is a jey, digestion vigorous, sleep sound, with an alacrity of body and an exhilaration of spirits which altogether throw a charm over life that makes us pleaeed with everybody and everything. Next week, to-morrow, in an hour, a marvellous change comes over the spirit of the dream; the eunshine has gone, clouds portend, darkness covers the face of the great deep, and the whole man, hody and soul, wilts away like a flower without water in mid-summer.

When the weather is cool and clear and hracing, the atmosphere is full of electricity; when it is sultry end moist and without sunshine, it holds hut a small amount of electricity, comparatively speaking, and we have to give up what little we have, moieture heing a good conductor; thns, in giving up, instead of receiving more, as we would from the cool, pure air, the change is too great, and the whole man languishee. Many become nneasy nnder these circumstances; "they can't account for it;" they imagine that evil is impending and resort at once to tonies and stimulants. The tonics only increase the appetite, without imparting sny additional power to work up the additional food, thus giving the system more work to do, instead of less. Stimnlants seem to give more strength; they wake up the circulation, hut it is only temporarily, and unless a new snpply ie soon taken, the system rnns further down than it would have done without the stimnlant: hence it is in a worse condition than if none had been taken. The hetter course would be to rest, taking nothing but cooling fruits and berries and melons, and some acid drink when thirsty, adding, if desired, some cold hread and hutter; the very next morning will hring a welcome change.—*Hall's Journal of Health.*

How to Grow Plump.—Dio Lewis gives the following advice. Go to hed at half-past eight or nine o'clock, and don't he in a hurry ahont getting up in the morning. On going to hed and on getting up iu the morning, drink ss much cold water as you can swallow. Soon yon will learn to drink two tnmhlers; and some persons may learn to drink etill more. Drink all that your stomsch will bear. Spend a good deal of yonr time in the open air without hard exercise, hut exposed to the enn. If practicahle, ride in a carriage some honrs every day. Remain out enongh to give you a good appetite, hut do not work hard enough to produce excessive perspiration. Eat a great deal of oat meal porridge, cracked wheat, Grahem mush, baked sweet apples, roasted and broiled heef, though the vegetahle part is more fattening than the animal part. Lie down an honr in the middle of the day, just hefore you take your dinner, to reet, and if possible, take a little nap. Cultivete jolly people. "Langh and grow fat" rests npon a eound physiological basis. A pleasant flow of the eocial epirit is a great promoter of digestion. Keep your skin clean, eleep in a room where the eun shines, ksep everything eweet and clean and fresh ahont your bed, eleep nine, if possible ten hours in the twenty-four, eat as I have told you, cultivate the jolly spirit, and in six months you will he as plump as you could wish.

Celery as a Nervine.—A correspondent of the *Practical Farmer* says: "I have known as many men, and women, too, who, from various causes, had become so much affected with nervoueness thst when they stretched out their hands they ehook like aspen leaves on windy days; and by a daily moderate nse of the hlanched foot-stalks of the celery leaves as a salad they hecame ae strong and steady in limhe as other people. I have known others so very nervous that the least annoyance put them in a state of agitation, and they were in almost constant perplexity and fear, who were effectually cured hy a daily moderete nse of hlanched celery as a salad at meal times. I have known others cured hy using celery for palpitation of the heart."

Thickened Milk.—There is no better dish when diarrhea is common among old folks and children than good thickened milk. This is the way to make it the very nicest way.

Take a helf gallon of morning's milk, not skimmed, and put on to boil, stirring occasionally. Break a fresh egg into flour well salted, etir it and rnh it hetween the hands nntil all the flour thet can has heen worked into it, then just as the milk reaches the hoiling point scatter it in; stirring all the time—one minute will have cooked all the lumps, pour into a tureen and then add a good lump of hutter. This is a good and safe food at thie time of the year and all the grandpa's like it. Always let there he a half cupful of water in the kettle hefore the milk is put in, that will prevent it from burning.

Colored Spectacles. — Dr. Stearns writes: "The photographer uees orange-colored glass to exclude the actinic rays of light, and why some optician has not had the genius to see that orange ie the proper color for spectacles, instead of green or blue, for persons with weak eyes is heyond my comprehension. A room in the hospital with which I am connected ie lighted through orange-colored windowe, and ie used by patients who have certain dieeasee of the eyee requiring the exclusion of tbe actinic raye of light. It hae heen very eatiefactory. Orange is also, I helieve, the proper color for bottlee containing chemicals affected hy light."

MINING AND SCIENTIFIC PRESS.

W. 8. EWER..... .....SENIOR EDITOR

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ILLUSTRATIONS AND REPORTS OF MINING ENTERPRISES WANTED.—Drawings or photographs of mining works that are of general interest to our readers are solicited for publication in this journal. Official reports of Companies, and description of mines of importance, of special interest, are also desired. Sketches of any new method and discoveries will be very acceptable.

San Francisco:
Saturday Morning, Sept 21, 1872.

Gold and Legal Tender Rates.

SAN FRANCISCO, Thursday, Sept. 19, 1872.—Legal Tenders buying, 88¼; selling, 89. Gold in New York to-day, 113.¾

Table of Contents.

ILLUSTRATIONS.—Tin Smelting Furnace; The Goodwin Pump, 173. Ransome's Patent Stone, 178. Blake's Patent Steam Pump, 181.
EDITORIALS.—Academy of Sciences; The Coming Centennial Anniversary; University of California, 180. Utilizing Waste Heat, 181.
MINING SUMMARY from various counties in California, Nevada, Arizona, Colorado, Montana and Idaho; Mining Shareholders' Directory, 176-7. Market Reports, 184.
CORRESPONDENCE.—Notes of Travel in White Pine, Lander and Nye Counties, Nev., 174.
SCIENTIFIC PROGRESS.—Associations for the Advancement of Science; Distillation by Cold; Spectroscopic; Condensing Magnetism; Explosive Gas Generated from Coal; Hydroscopy; Freezing by Mechanical Action. 175.
MECHANICAL PROGRESS.—Terra Cotta in Architecture; Automatic Avoidance of Boiler Accidents, 175.
USEFUL INFORMATION.—New Process for the Preservation of Alimentary Substances; New Commercial Product—"Ceresine;" The Philosophy of Tanning; Chemical Plants; To Temporarily Repair Broken Axletrees; The Gas Jet for Removing Old Paint; When to Sell Grain, 179.
GOOD HEALTH.—Duties of an Apothecary in the Olden Times; Death by the Nerves; Dentistry in the Ancient Days; Mysterious Influences; How to Grow Plump; Celery as a Nervine; Thickened Milk; Colored Spectacles, 179.
DOMESTIC ECONOMY.—Cooking as a Fine Art; How to Keep Meat; To Save Washing; To Dry Pears and Grapes; Practical Receipts, 182
MISCELLANEOUS.—Decorative Painting on Tin, 175. Interesting Lecture on Preserving Fruit and Other Articles 178. Patents and Inventions; New Incorporations, 181. Mining Tunnels; Adulteration of Drugs and Chemicals; Every Mind has its Capacity, 182. Broad and Narrow Gauge Roads, 184.

JAPANESE PROGRESS.—The arrival in our waters of the Japanese vessel San Sai Mara forcibly reminds us with what avidity these people are seeking knowledge in commercial pursuits. This vessel is the second, we believe, that has ever visited our shores, the beginning of a great and mighty trade that will arise between the Occident and the Orient. Is it probable that Japan, now taking her first lessons in marine matters, is yet to prove a formidable rival to nations now considered peers on the high seas?

NEW SOAP DISH.—John Marquis, of this city, has invented a triangular soap dish, which is cast in one piece of zinc, in such form as to fit into the corner of a sink. It makes a cheap and very convenient receptacle for this household article, for which it is well to have a handy place.

FREIGHT.—During August the amount of through freight shipped over the C. P. R. R. to the East, was 2,775 tons or about 10 car loads for each working day. Among the shipments from the interior was 8,698 pounds of antimony.

BRITISH COLUMBIA.—It is said that the Placer river diggings will produce more gold this year than last, but that the treasure will now be in fewer hands.

THE attention of miners, millmen and others requiring tanks, casks, etc., is called to the advertisement of Fulda & Sons on page 184.

Academy of Sciences.

At the regular semi-monthly meeting of the Academy on the 16th inst., seven propositions for life membership were received and two new members elected. Dr. J. LeConte delivered an address upon the evidences of former glaciers which had been found in the Yosemite Valley and adjoining regions of the Sierra.

R. H. Stretch read a very interesting paper on the

New Pests Affecting Fruit Trees.

Several specimens of the various kinds have been brought before the Academy at different times.

The immunity which California has enjoyed from the insect pests which have proved so destructive to fruit trees in the Atlantic States, has passed, and fruit-growers should fight them while they are confined to a comparatively limited area, and before extermination is impossible. Mr. Stretch called attention to three varieties which have come under his observation, which are popularly known as Scale Bark-lice. They are most destructive insects to trees, multiplying rapidly, and live by sucking the sap from the limbs of the trees which they destroy. A peculiar scale covering the body protects them from the ordinary remedies, applied for their destruction. The males are small two winged flies, the females wingless grubs. Mr. Stretch gave an extended description of the transformation of the group, in general terms. The insects brought from Menlo Park, he is inclined to think, were imported from Australia, or they may be the same as are so destructive to the orange and coffee plantations on the Sandwich Islands. This species, he said, was popularly known as

"The Ribbed Bark Louse,"

A full description of which he gave. They seem to originate on the acacia latifolia, and from thence bad spread. When present, they can be detected, as the white clusters are very conspicuous. Though an enemy of two years' growth only, they have killed acacia trees fifteen or twenty feet high. Planters should examine every cutting, and ascertain that it is not affected before taking it to the orchard. Hand-picking is recommended as the most effectual remedy. They can easily be detached from the tree with a stiff brush. Old clothes, saturated in strong lye, should be placed beneath the tree to catch the young ones which may fall. The person engaged in the work should wear clothes that can be scalded afterwards, and the insects should be swept into a pan partially filled with lye. The best time to operate is early in June, before the young have been hatched, as we have then only the females to contend with.

Other Species.

Mr. Stretch alluded to another species found on pine trees in this city, which have no resemblance to an insect, a species of Lecanium. The general appearance is more like a gall They are about the size of a small pea, rounded, and of a deep chestnut-brown color. The history of this will be followed hereafter.

The third species strongly resembles the oyster-shell bark louse of the Eastern States, which has become a serious pest. How widely this insect has become scattered, he did not know, but he had found branches in this city covered with their scales. The remedy against this insect is a wash, two parts of soft soap and eight of water, with lime enough to bring to a consistency of thick whitewash. Put on trunks and limbs of trees, high as practicable, covering the whole surface, and fill all the cracks in the bark. As a substitute, a solution of two pounds of potash in seven quarts of water, or two quarts of common salt in two gallons of water. The last two species have not occurred in the State in any great numbers, but as they are closely allied to similar ones found in the Atlantic States they should not be lost sight of.

Flea Seeds.

Mr. Stretch also presented a paper on the so-called "Flea Seeds." He found on examination that they are "Gall" produced by one of the many species of "Cynips" infecting the different oak trees. These insects are allied to the great family of bees and each species produces a characteristic gall, some of them on the roots, some on the stems and others on the leaves of the plant attacked when the insect requires no further nourishment, these galls become detached from the leaf and are only a thin shell, the interior having been eaten out by the enclosed grub. It is the spasmodic contraction and expansion of the grub which produces the jumping of the gall.

A communication on this same subject was prepared for the previous meeting, by Chas. D. Gibbs, but was not read. It will be remembered that a number of the seeds were sent to the Academy from Stockton, and Mr. Gibbs while on a visit to that place took the opportunity to make some observations on them. They were found under an oak at the residence of a Mr. Brown, in the northern part of the city, and contained, as Mr. Stretch remarked, the eggs of an insect. They grow and were attached to the leaves of the oak tree and at a certain stage of maturity or from being shaken by the wind drops off. Mr. Brown had only noticed them for the last three years and said they always commenced dropping off early in August. There were other oak trees in the vicinity but this was the only one on which they were found. Dr. Holden had also noticed them on a particular oak for the past three years but had never seen the insect that produced them.

On his return from Stockton, Mr. Gibbs examined the eggs carefully. In the dirt and trash which was swept from the roof of the house, under the tree, a number of dead insects were found, some of the smallest resembling a fly or somewhat like a bee, and those of larger size shaped like a locust. Whether it was the same insect he was unable to say. Live insects were found which were the same as the small dead ones, resembling a fly. These insects were evidently the same as those in the eggs as they jumped like a flea when touched. Mr. Gibbs had seen the eggs jump as much as two inches.

The Coming Centennial Anniversary.

The Executive Committee of the United States Centennial Commission, held a meeting in Philadelphia on the 29th of August, for the purpose of consulting with various committees from the City Council of Philadelphia, the various Boards of Trade and Exchange, the Franklin Institue, etc., also newspaper editors, members of Congress, merchants and others, upon the best methods for promoting the success of the approaching Centennial Anniversary Celebration. The meeting was a large one, and much interest was manifested in the objects of the same. Several short speeches were made upon the importance of the object in view, and the necessity of a united effort to make the celebration one which shall be worthy of the day and the occasion.

By Act of Congress, approved June 1st, 1872, it is provided that books of subscription may be opened and an opportunity given for a period of 100 days therefrom for the citizens of the different States and territories to subscribe to the exhibition stock in proportion to their respective populations—the total amount of stock being fixed at $10,000,000. A blank form of certificates of stock agreed upon, provisions made for opening the books at an early day, under the direction of agents to be appointed for each of the several States and territories. Due notice of the appointment of agents, etc., will be given.

The probability is that the enthusiasm which will be connected with this event will not only make it the grandest World's Exhibition that has ever been witnessed; but that it will also be a financial success, returning to stockholders the principal which they may invest, with interest. The Commissioners have done and are doing well, and deserve the coöperation of every American citizen. It is well and fitting that the first centennial of our national anniversary should be held in the city and within the shadow of the spires whose bells first rang out the joyful peal of liberty to all the world and freedom to all mankind everywhere, irrespective of creed, color or country.

VULCAN IRON WORKS. — It will be seen by reference to our advertising columns, that the proprietors of the Vulcan Iron Works have recently refitted their shops with entire sets of new tools of the latest and most approved construction, whereby they now have increased facilities for turning out, with accuracy and despatch, all descriptions of machinery. Originally established in 1851, this is one of the oldest works in the State; and the variety and completeness of their patterns which they have accumulated, enable them to supply, promptly, every want in the way of machinery which can arise throughout any of the States or Territories of the Pacific Coast. The well-known reputation which this establishment has sustained in past years for the excellent quality of the work which it has turned out, cannot fail to be largely increased by the improved facilities which they are now enabled to bring to their assistance. Office, 135 and 137 Fremont street.

HALE & NORCROSS MINE.—A fire occurred in the Hale & Norcross pump shaft 250 feet down on the evening of the 18th inst. As soon as the fire was discovered all the miners were hoisted to the surface and several streams of water turned down the shaft. The miners in the Savage, below the second station were also hoisted out being unable to work on account of the smoke from the other mine. The fire is said to have been caused by a lighted candle which was left sticking in the timbers. As far as known little damage was done.

University of California.

A special meeting of the Board of Regents of the State University was held on the 18th inst.; after the transaction of some other business, the Hon. Edward Tompkins presented a written communication which tendered to the University the

Munificent Donation

Of 47 acres of land in Oakland, the sale of which will probably realize $50,000, for the purpose of founding a professorship, to be called the Agassiz Professorship of Oriental Languages and Literature. Mr. Tompkins takes the ground that as the business between California and Asia is now very great and is increasing, it is of the utmost importance for California that means shall be provided to instruct our young men, preparing for lives of business activity, in the languages and literature of Eastern Asia.

The property consists of about 47 acres of land, at the junction of Broadway and University Avenue, Oakland. This land is to be sold as rapidly as can be done judiciously, until the sum of $50,000 is realized, which is to be set apart as the endowment fund for the professorship of Oriental Languages and Literature. Mr. Tompkins suggests that, as the department is now organized, will not, at first be fully employed, he hopes that it may also be utilized for the education of such young men as may come here for that purpose, from Asia, upon such terms as the Regents may prescribe. He says: "As a lover of California, I feel deeply the humiliation of seeing them pass by us in almost daily procession to the other side of the continent, in search of that "intellectual hospitality" that we are not yet enlightened enough to extend to them, and yet more than that I cannot impose this as a condition of this trust, without danger of injury to the great interests that I most earnestly desire to promote."

The communication says: As a recognition of the debt of humanity to the great and good man now honoring our State with his presence, the professorship shall be called the "Agassiz Professorship of Oriental Languages and Literature." The gift of Mr. Tompkins was accepted with appropriate resolutions. With a few more men like Mr. Tompkins in our midst, our University would become of much more benefit to the community than it now is, and there might even be some hopes of assistance to our Academy of Sciences, which languishes for want of funds.

ANOTHER NEW GUN.—Beasemer, whose name has been given to the steel he manufactures, is engaged in the manufacture of a gun twenty yards long—so it is said. Nothing like it has ever heretofore been imagined or heard of. Its diameter will be forty-eight inches, and its bore thirty inches. It is expected to discharge a bolt weighing five tons. In order to give sufficient impetus to this monster projectile, the load of powder will be placed in five different chambers. The explosion of the first will start the shot, and as it flashes along the barrel, the other four will be fired successively, each of them giving it fresh force. If this gun is a success, there are few fortifications at present in existence that could resist the destructive power of its enormous projectiles.

HOME WORKMANSHIP.—We have been shown the gold medal of the Oregon State Agricultural Society, which was made in this city by Messrs. Titcomb & Williams, jewelers. The design is a very handsome one, emblematical of the agricultural resources of Oregon, and the whole work reflects credit upon our San Francisco artificers. The medal in question was awarded to V. S. W. Parkhurst, agent for Howe's U. S. Standard Scales. It is made of pure gold, 1,000 fine, and intrinsically valued at about $50.

SACRAMENTO SUGARIE. — We learn that the factory of the Sacramento Valley Beet Sugar Company is in successful operation for the season, turning out a splendid article of sugar. With beets sufficient for four or five months operations, at from 50 to 75 tons per day, the result cannot be less than 2,000 barrels of No. 1 sugar; besides a large quantity of syrup, suitable for distillation.

Let all who visit the State Fair this week and next, after noticing the sugar on exhibition, go and see the works in operation, and judge whether there is money in the business.

THE Owens River Valley has again been disturbed by sharp shocks of earthquake. No damage has been done.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[From Official Reports to DEWEY & CO., U. S. and Foreign Patent Agents, and Publishers of the Mining and Scientific Press.]

For Week Ending August 20th, 1872.*

Buckle.—William C. Bussey, S. F., Cal.

Electro-Galvanic Quicksilver and Amalgam Saving Apparatus.—Joseph Potts, Treasure Hill, Nevada.

Water-Elevator.—John A. Ball, Grass Valley, Cal.

Washing-Machine.—Joseph C. Durhin and James Montgomery, Eureka, Cal.

*The patents are not ready for delivery by the Patent Office until some days afterward.

Note.—Copies of U. S. and Foreign Patents furnished by Dewey & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co's. Mining and Scientific Press, American and Foreign Patent Agency, the following are worthy of mention:

Improvement in Slag Pots.—Robert A. Fisher, Eureka, Nevada. This invention relates to an improvement in that class of pots used about smelting furnaces which are known as slag pots. These pots are used for receiving the slag as it comes from the furnaces and are consequently subjected to an extremely high temperature, by which the iron is suddenly expended, rendering them liable to crack or break, and frequently they are broken from other causes. The expense of these pots is quite an item where large smelting works are conducted on account of this breakage.

This invention consists in constructing these slag pots in sections, and then uniting the section by proper means so that in case one of them should become cracked or broken, it can readily be replaced by a new one at a comparatively small expense. Any number of sections may be used, but ordinarily three will be sufficient, and they are united by means of lugs or projections through which a bolt or pin is passed, or they may be clamped together in any suitable manner.

Improvement in Slag Spouts.—Robert A. Fisher, Eureka, Nevada. Heretofore the slag as it runs from smelting furnaces has been allowed to pass directly over the surface of the spout, which is attached to the breast plate of the furnace. After a time, this spout becomes so much corroded or eaten away by the molten slag, as to become useless and requires to be replaced by a new one. This replacing necessitates the stoppage of the flow of slag, and this causes an accumulation in the furnace, and great inconvenience in consequence.

This invention is intended to avoid the difficulty by employing a lining of suitable material which rests upon the bottom of the spout and protects it. This lining is easily removable after it becomes corroded, and may be replaced by a new one in a very short time, and with no serious stoppage.

Tuyere Tester.—Robert A. Fisher, Eureka, Nevada. The water tuyeres employed in blast furnaces are often imperfectly constructed and commence to leak soon after being put in. This leakage reduces the temperature of the furnace and causes loss, and can only be determined by stopping the furnace and withdrawing the tuyere. This invention provides a remedy by introducing a branch discharge pipe, with suitable cocks. The upper part of the branch pipe may be made of glass, and is open. Water ordinarily passing through the tuyere will pass through the usual pipes, but when it is desired to ascertain whether there is leakage or not, the usual outlet pipe is closed until the water rises to the top of the glass tube. The inlet pipe is then closed, and if there is no leakage, the expansion of the water by heat will cause an overflow, but if the tuyere leaks, the water will gradually fall in the tube.

Bed-Bug Exterminator.—Elizabeth Hooper, Diamond Springs, Cal. In all warm climates as in the interior of this State, vermin accumulates rapidly, and are with difficulty destroyed. The invention here mentioned is a compound which is peculiarly efficacious for the destruction of bed-bugs, and is intended simply to be applied wherever they exist.

Bagatelle Table.—William Evans, San Francisco, Cal. This invention is an improved device for playing games, and consists of a table similar to an ordinary billiard table. A short cylinder or wheel is mounted on a vertical spindle at one end of the table. A series of sliding plates are so arranged around the cylinder that they will be released and allowed to spring up by causing the ball to strike a plug at the base of each end projecting from the lower periphery of the cylinder. The plates are numbered and each number released, counts for game. Holes at the sides of the table near the cylinder, admit the balls to inclined numbered troughs beneath the table, and these also count for game.

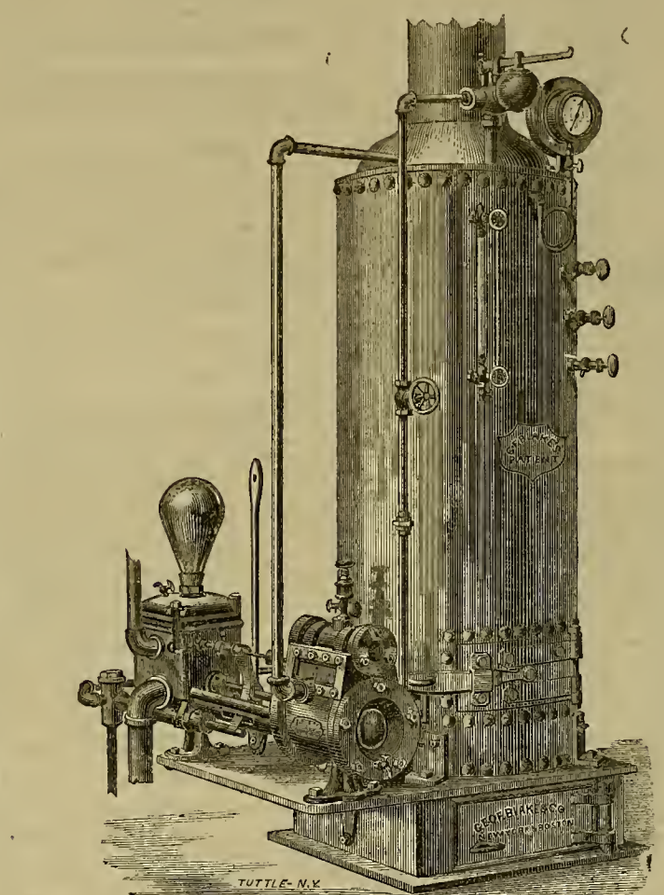
Harness Pad.—Geo. W. Dutton, Tomales, Cal.—This invention is intended to give a harness pad, which shall fit perfectly and rest in the hollow upon each side of the withers so as not to chafe the horse, and at the same time not interfere with the other portion of the harness. The saddle is so constructed that its middle comes in the usual position of the ordinary pad, and the ends extend forward upon each side of the horse's back. A T-shaped bolt passes through near each end, its outer end being flush with the outer face of the saddle and receiving the terret. The arm upon the inner end lies parallel with the back bone of the horse, and has the pad so hinged to it that there will be no unequal strain or pressure, and by rocking, it can adjust itself to the movements of the horse.

Blake's Patent Steam Pump and Boiler.

The steam pump is comparatively a new invention, and yet they are already largely used. The representation herewith given is a new style or adaptation of one of the most popular now before the public—Blake's patent steam pump. This is fitted with a boiler complete, including also, boiler base, grate bars, smoke bonnet, boiler feed attachment (a small pump to feed the boiler), gauge cocks, steam gauges, water gauge, safety valve, globe valves, blow-off cocks, steam and exhaust pipe, boiler-feed connections, valves, unions, and all necessary fittings. It is really a most perfect portable engine, boiler and pump combined, and so compactly arranged and fitted up that it can be moved from place to place, or set in almost any convenient corner, and it is complete and ready to "start up." Having no dead points, it cannot stop "on the center," so it never fails to "go" whenever steam is given it. Being simple, it requires little skill to run it. Another advantage is the hand lever attachment, by which the pump at any time, should steam not be up, and water be required, can be worked by hand, with the ease of an ordinary hand pump.

The Blake steam pumps are now well known, and are made in a variety of sizes and styles, from a small boiler-feed, to a 24 inch cylinder Mining or Tank pump. The machine shown in the accompanying cut, however, is comparatively a new style, gotten up especially for use in residences, and public institutions, ranches, breweries, mills, mines, etc., or wherever water is required to be raised for irrigating or other purposes. Many of these pumps were put in to take the place of wind-mills during the past year, in Alameda county, and other sections where water for irrigating is required daily, and where the winds fail in the fall and spring.

The pumps are manufactured by Geo F. Blake & Co., of Boston, who have built up one of the largest manufacturing enterprises in the Eastern States. The company's warehouse for the Pacific trade is at Treadwell & Co's Machinery Depot, in this city.



BLAKE'S PATENT STEAM PUMP AND BOILER.

Utilizing Waste Heat.

One of the most important problems of the day relates to the utilization of heat as applied to the steam boiler. When we reflect that not more than 14 per cent. of the heat theoretically due to the combustion of coal is utilized in the best constructed furnaces, it may well be supposed that a large field is here open for the exercise of scientific research and mechanical skill. Much time and ingenuity has been expended in this direction, but the progress has hitherto been so exceedingly slow, that the most sanguine had began to despair of ever making any material advance in the desired direction.

Quite recently, however, we have the announcement of a very novel process for the application of bisulphide of carbon—a fluid which boils at the low temperature of 110 F.—as a sort of supplement to steam. This process, to which we made some allusion several weeks since, consists merely in exhausting the steam into a second boiler within which are arranged a series of tubes filled with bisulphide of carbon, which is thus readily converted into an æriform condition, with a pressure of 65 pounds to the inch. The vapor thus formed is used instead of the vapor of water, to drive another engine. The bisulphide vapor is readily condensed, pumped back into the tubs of boiler No. 2, and thus used continuously without any material loss.

The extraordinary claim is made for this novel process that the experiments prove that the same fuel now required to produce 100 horse-power with the best engines in use, will produce 250 horse-power by the use of this supplemental engine; showing a gain of 150 per cent. in the amount of power obtained from the consumption of fuel, or a utilization of 35 instead of 14 per cent. of the total theoretical amount of heat due to the combustion of coal.

The Boston *Advertiser* says that for the purpose of making a careful test of the value of this process two new engines of the same size and construction were put up at the Atlantic Works; one of them run by steam in the usual manner, while the heat that escaped in the exhaust from this engine was used to heat a boiler and drive the second engine. A careful measurement of the power produced by each of the engines made by F. W. Bacon, Esq., the oldest and most experienced engineer in the city, showed that while the first engine, worked by steam in the usual way, produced 6.23 horse-power, the second engine, worked entirely by the waste heat escaping in the exhaust from the first, produced 9.12 horse-power, the two together producing 15.35 horse-power with the same fuel required to drive the steam engine alone.

The amount of coal required to run a steam engine of 100 horse-power of the best class in use at the present time is about 4,000 pounds per day; by means of this discovery the same engine can be run with 1,600 pounds per day, thus saving 360 tons a year for each 100 horse-power produced.

The same paper further adds that this process has been thoroughly tested, engines made on this plan having been used more than a year, and its introduction for all purposes where steam power is used having been found to be perfectly practical. The Haskins Machine Company, at Fitchburg, has been running its new workshops with engines constructed on this plan several months with perfect success, and has just completed an engine for parties in Worcester that is to be run entirely by the exhaust steam from a neighboring engine 90 ft. distant, no fire or chimney being required to run the second engine, which will do more work than the steam engine from which the exhaust is taken.

A company has been organized, with a capital of $1,000,000, for the purpose of manufacturing engines of this kind for both stationary and marine purposes in Boston under the personal superintendence of the inventor, who is a practical mechanic, and has been the manager of a large and successful business in Vermont for some years past.

Mesquite—said to be an Indian word—is a shrub or small tree growing in Texas, Mexico and Arizona, bearing large edible pods, which are greedily eaten by animals—sheep and mules preferring it to any other procurable food in those countries—and will grow on the driest soils. It is also the name of a rich, nutritious evergreen grass that obtains its name from being always found growing in company with the tree. We say evergreen, because it remains green through the whole of the dryest season of the year, when most other grasses are dried up. Kellogg, seedsmen, has imported the seeds of both tree and grass, and in answer to two of our patrons we give as price of grass seed, $1 per pound for clean seed, 75 cents per pound in the chaff. Five pounds of clean seed are required for an acre. Alfalfa seed is from 12 to 16 cents per pound, requiring 16 to 20 pounds per acre.

New Incorporations.

Nevada G. & S. M. Co.—Sept. 12. Capital stock, $4,000,000, in 40,000 shares. Trustees—Andrew Lawson, Joseph F. Atwill, Joseph Bee, Benjamin Dore and Robert Sherwood.

Hayes G. & S. M. Co.—Sept 12. Location: Robinson District, Nevada. Capital stock, $4,000,000 in 40,000 shares. Trustees—D. T. Ellmore, J. S. Lambert, J. M. Case, J. G. Hoyt and S. A. Raymond.

Trinity County Water and Mining Co.—Sept 13. Capital $10,000,000. Trustees—G. C. Potter, H. S. Brown, U. Fernhack, G. Holland, J. R. Myers, R. B. Caufield, D. L. McDonald, Alonzo Munroe and Isaac Jessup.

The Charter Oak S. M. Co.—Sept. 14. Location: Ely District, Nevada, Capital stock, $3,000,000, in 30,000 shares. Trustees—J. L. King, A. K. Grim and L. J. Lewis.

North Hill Hydraulic G. M. Co.—Sept. 16. Capital stock $1,000,000, in 20,000 shares. Trustees—M. G. Kennedy, H. S. Loveland, F. W. Utter, Henry Abbott and P. C. Learned.

Piute Consolidated S. M. Co.—Sept. 17. Location: Lincoln County, Nevada. Capital stock, $3,600,000, in shares of 100 each. Trustees—Seth H. Wetherbee, Robert Sherwood, Charles W. Rend, Charles De Lacy and Wm. S. Duvel.

Tesmenie S. M. Co.—Sept. 17. Location: Ely District, Lincoln county, Nevada. Capital stock, $3,000,000, in shares of $100 each. Trustees—H. H. Flagg, S. Bishop and A. C. Chick.

Anna Dickinson S. M. Co.—Sept. 18. Location: Ely District, Nevada. Capital, $3,000,000. Trustees—Annis Merrill, C. D. Cushman, Orlando Fuller, Wm. E. Dornett and S. D. Simonde.

Meetings and Elections. — Hayes G. & S. M. Co. Trustees: S. A. Raymond, J. S Lamber, P. McCann, Ira G. Hoyt, and D. J. Elmer; H. C. Howard, Secretary.

Insurance M. Co., Sept. 10. — Trustees: John Landers, O. Abbott, Jamee L. Bleikie, R. G. Brown, and R. F. Bunker; Edward Landere, Secretary.

Domestic Economy.

Cooking as a Fine Art.

A late nnmber of *Blackwood* contains an interesting article on "Cooking ae a Fine Art," ae practiced in France. It is rather too long to reproduce in onr columns, but there are some suggestione, partly drawn from the magazine, and partly arising from the discussion of the suject, which onght not to be overlooked. "In England," says the *Blackwood* article, "taking the people as whole, and excluding the special oases, there are but three known national ways of dreesing food—roasting, boiling, and that inconceivable horror known as hash. Roasting ie not badly done by us, and we fry fairly; but there ends our faculties; what we call boiling is one of the moet senseless acts to which human acts can descend; it is an inexcusable, unjustifiable, wanton folly."

Thie rather eweeping langnage; in fact may be considered "overdone. "But so far as it is true, it applies as well to this country as to England. The contraet as between France and the English-speaking and cooking nations is, that the French cook utilizes the water in which meats are boiled, and considers the things boiled in it as eecondary; while English cooks extract all the virtue in the process of boiling, serve up the depleted article thus misnsed, and throw away the water which holds in solution so mnch of the flavor, aroma, and a large portion of the nntriment.

A leading peculiarity of the French seems to be that their women, in every condition of life, from the poorest to the richest, if not born cooks, are educated to consider cooking and household economy honorable, and are taught make these substantial employments graceful. "In England enconomy is almost alwaye nasty; in France it frequently assumee a character so subtle and artistic that it loses its repuleive physiognomy, and, indeed, sometimes acquiree a sort of charm, in consequence of the infinite skill with which it ie administered, and of the admiration which that skill provokes. A result of the Frenoh system is that it necessitates, or, at all events, insensibly produces an almost nniversal power of home usefulness among the women. It expands their ephere of usefulnese in life, and creates for them a special duty, teaches them that wise truth which most of them eo clearly recognize and cordially practice, that no indoor detail is beneath a woman's care; it further develops in them the handiness, the adroitness, which has become dietinctive of the modern French women."

It is assumed, on pretty good evidence, though not very fully, that this cleverness of the French in cooking and other household details ia only abont a century old. The force of circumstancee and the altered condition of aociety have led the French into these habits of economy and good housekeeping. Probably just the reverse of this courae of household management is true of England and Ameriea. Honsekeeping is not, among us, in so high honor aa it was a hundred yeara ago. And perhapa from thia arises the evil which is loudly complained of in England and the United States—the unsatisfactory condition of domestic aervice.

Cooking is *not* regarded ae a "fine art," nor are heads of housea so ambitioua as their grandmothers were of being themselvea competent to attend to all the details of the household. The desire is rather to find some person to do all this sort of thing for them, at whatever price. Now the consideration for doing a despiaed routine of duty muat either be increased to compensate for the implied humiliation or persona must be found to undertake the deapised employment, to whom "hnmiliation is no object or dread. Raise cooking—not mere fancy cooking, but the furnishing of daily, wholesome food—eo that it ahall be a subject for emulation and excellence, and the employment will be in itaelf a part of the compensation.

So of all other household duties. The daily comfort of every one, man, woman, and child, dependa upon the style in which the house is kept. Upon comfort of body, domestic happiness, peace of mind, and even virtue and good conduct chiefly rest. The man is not half a man who has not a happy home; the woman more than sharesin hia deterioration; and as to the children, they are but entering upon a life of discomfort, which makes their father's and mother'a house leae attractive than almost any other place. There is no use in pooh-poohing the homely subject of preparing meat and drink aa below the attentiou of intellectual people. "Our daily bread" is regarded as worthy a distinct petition to the Giver of all good things, and the preparation of that daily food ought to be regarded aa not beneath mind and intellect, since food is not only an absolute necessity, but aa one of the things which the great Benefactor gives "richly to enjoy."

How to Keep Meat.—Meat is much better for family use when at least one week old in cold weather. The English method for keeping meat for some time has great merit. Experts say, hang up a qnarter of meat with the cut end up, being the reverse of the usual way, by the leg, and the juice will remain in the meat, and not run to the cut and dry up by evaporation. It ia worth a trial, and when made will be continued.

Miscellaneous.

Mining Tunnels.

In the largest and best regulated cities, says the *Mining and Commercial Times*, it is fonnd to be necessary to establish a joint syetem of draining; but for some strange reason it is the boast of American proprietors or companies on a mineral lode—no matter how limited tha extent of their claim—that their organizations, presidents, boards of trustees, superintendents, secretaries, etc., kept up at an enormoue expense, are all independent of each other. A contiguous row of mines on the same lode will each be worked independently and entirely regardlese of its neighbors, while one general tunnel or adit, or drain, would allow the water to run off by its natural flow to the lowest level from all the minee, through one common outlet, thereby abolishing at once all pumping machinery, giving one common railroad for the transportation of all the ore, and creating innumerable advantagee. Only one general mining administration would be required, operatious could be carried on joinily and systematically, the extraction of ore largely increased, the health of the minere secured by good ventilation, and large sums of money would be eaved, thereby making it possible to extract immense bodies of low-grade ores. Now suppose in London each house-owner were to provide his own drainage, independent of his neighbors, establish his own gas mannfactory, and dig a canal of his own from a distant spring in order to get a snpply of water, would not the world pronounce such a proceeding very unwise and foolish?

In short, instead of an unwise, short-sighted, and ruinous manner of proceeding, there should be inaugurated a rational system of mining—a system which would make it nniformly profitable, attract capital, which ie absolutely neceeary for the development of this brauch of industry, increase the production of the precious metals beyond all expectations, populate the vast extent of the nineral regions, procure traffic for the trane-coutinental railways, stimulate the commerce and industry of the whole nation, firmly establish the credit of the United States by proving the extent of their mineral wealth, and above all, relieve the burdens of taxation by increasing the value of all property.

Such are some of the advantages which, in our opinion, would be derived from the adoption of a general system of tunneliug in the great mining districts of America, and it must appear remarkable tbat such tunnele—their advantagea being so self-evident—have not already been constructed in numerous places. Inetead of thia, we find that with the exception of half a mile of the Sutro Tunnel, nothing haa so far been accomplished with respect to deep tnnneling. There are many causes, however, which prevent their construction, and we muat look for these in the manuer in which mining property is owned and accquired. The men, who undergo all sorts of privations, hardships, and dangers in the hazardous pnrsuit of prospectora, do so not for the purpose, after discovering a promising mine, of working it, eetablishing a home, and deriving a legitimate income therefrom, but the great stimulus for their exertions is the prospect of rapidly realizing a fortune by aelling the property thus discovered and accquired to some capitalista in the large citiea of the Eastern States.

Few lodes ahow much valuable ore at the surface. If such a one is discovered the croppinga of which give large assays, it generally causes much excitement among the minera, who, either ignorant of geology, or too apt to believe what they wish, imagine that the whole body of the lode, for its width, length, and to any depth, will prove of the same character. They go to work with a good will, sink shafts and inclines, but soou discover the fact, which is well known to all experienced in mining, that lodee are not continuously ore-bearing, but only contain bunches or chimneys of good ore, while great masses of barren quartz or country rock, which intervene both horizontally and perpendicularly, necessitate a protracted search for ore, which is expensive, and often proves a serious obstacle to financial auccess.

Other difficulties interfere with the miner. If he is really fortunate enough to discover a valuable body of ore near the surface, there may be no mill in the district to reduce it; or if there be a mill, the ore may be of so rebelliove a character as to defy reduction to advantage. He aoon arrives at a depth where a steam pump is required, his meana become exhausted, and the accumulating difficulties compel him either to lose all the fruits of his labors by abandoning the property, or to dispose of it to other parties who have a sufficiency of means.

Self-interest, and a desire to acquire the much-coveted fortune, notwithstanding his own failure, induce him to pursue the latter course. He starts off for New York or Boston, well provided with specimene, certificate of assay, transcript of record, and general recommendations; he there exhibits his vouchera and proofs, and proposea to dispose of the property to a joint-atock company. The plauaible reagiven for selling so valuable a mine for so small a sum, is that the means are wanting for the erection of steam pumpe, hoisting and rednction works, by the aid of which the ore and bullion to be realized would only be limited by the number of men employed, and the crushing capacity of the mill. A company is formed of men of means totally ignorant of the subject, a superintendent ie sent to the mine no better informed, a pumping engine and mill are contracted for, and not until they are erected, and work on the mine ie commenced, do they find that when the surface ore is worked out it is necessary to go deeper, and in order to go deeper it is found that a tunnel is required. A tunnel not having been taken into consideration, no further money will be advanced by the shareholders, the work stops, the mine is sold at a sacrifice, the company breaka up, and by all those who have lost a dollar mining ie pronounced a bad busineee, but we ask with what show of reason.

Adulteration of Drugs and Chemicals.

Ether is sometimes sold containing a large proportion of alcohol. This may possibly arise from the druggist dispensing photographic concentrated ether, made to contain alcohol in order to dissolve the gun cotton.

Iodoform has been noticed of a light canary color, a considerable portion being insoluble in ether; probably iodate of lime.

Acetate of lead has been in the market containing a large percentage of crystallized nitrate of lead; one lot was offered to a maker of preparations for the hair as "damaged," which proved to be damaged sulphate of zinc, in lumps.

Precipitated carbonate of lime has been offered containing efficient iron to give it a light fawn color; supposed to be ordinary chalk dressed.

Sulpbate of morphia ie frequently open to suspicion. In one case the sample did not contain any morphia; placed on a red-hot plate it did not seem to lose any weight, and wae insoluble in water. A fraud in which sulphate of quinine was put into sulphate of morphia bottles has been lately detected in New York.

Phosphorus, according to Dr. Rademaker, sometimee containe arsenic.

Bromide of potaseium has beeu observed to coutaiu a considerahle quantity of water of hydration.

Iodide of potassium is often adulterated with the bromide; some made in New York was found to contain carbonates in considerable quantity.

Sulphate of Quinine has many adulterants, among them sulphate of lime; cinchonine, sold as "sweet quinine" or as "cincho-quiuine"; muriate of cinchonine, sold as "light sulphate of quinine" and as French quinine," salicine, etc.

Rochelle Salt hae been offered for sale contaiuing at leaet 25 per ceut. of sulphate of soda.

Santonine was seen last year, in the New York market, contaminated with amall particles of mica. Thia fraud may be easily detected by placing the suspected sample on a hot plate; the aantonine will disappear and leave the mica.

Nitrate of Silver, made for the Government, was sold in Chicago, which contained five per cent. of copper. Piecea conld be picked out emerald green in color; it appearedd to have been made by simply disaolving coin or other alloy of silver in nitric acid, and crystallizing without any attempt at purification.

Every Mind has its Special Capacity.

Emerson says: "I am of the opinion that every mind that comes into the world has its own specialty—is different from every other mind; that each of you bring into the world a certain bias, a disposition to attempt something of its own—an aim a little different from that of any of your companions, and that every young person is a failure so long as each does not find his or her own bias; that just so long as you are influenced by those around you, so long as you are attempting to do those things which you see others do well, instead of doing the thing you can do well, you are so far wrong, so far failing of your right mark. Everybody sees the difference in children. They very early discover their tastes. One has a taste for going abroad, another for staying at home; one for books, another for games; one wishes to hear stories, another to see things done; one is fond of drawing, the other cannot draw at all, but he can make a machine. This difference, as you advance, becomes more pronounced. You are more distinct in your conception of what you can do—more decided in avoiding things which they cannot and do not wish to do. Now, I conceive that success is finding what it is that yon, yourself, really want, and pnrsning it—freeing yourself from all importunities of your friends to do something which they like, and insisting on that thing you like and can do."

To Enamel Copper Utensils.—Finely pulverize 12 parts white fluor spar, 12 parts unburned gypsum, and one part borax, and fuee together in a crucible. When cold, mix with water to a paate, and apply to the interior of the vessel with a paint brueh. When dry, the vessel ehould be thoroughly baked in a muffle or furnace.

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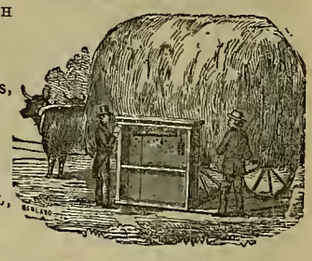

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Address, for circular and information, GEORGE H. TAY & CO., 614, 616 and 618 Battery street, San Francisco. J. A. HAUGH, Agent for Pacific Coast. se7-1m

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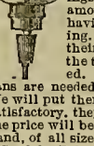

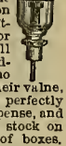

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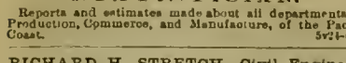
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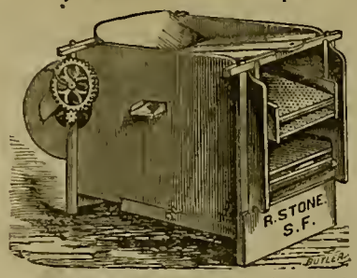

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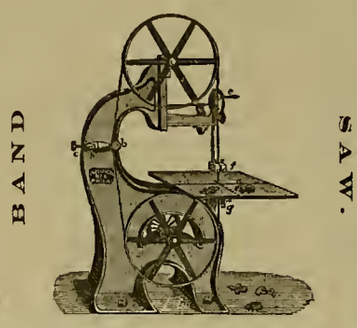

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[Concluded from last issue.]

Rails, Engines, Cars, Etc.

We have spoken of rails before, to mention that there was a wide diversity in practice with regard to their nse. In the 4.8½ gauge there is a variation in weight of rail per yard from thirty-four to eighty pounds, and similar variations with the other gauges. What is best it is impossible to say; various motives may have actuated the choice of one ahove the other, the cost, difficulty of transportation, etc.

The most popular weight in this country is fifty-six pounds to the linear yard, and it is a curious fact that of the total numher of 4.8½ gauge roads (307), 151 have this weight of rail, and of the numher of other gauge roads (204), ninety-four have the same. An increase of gange, enlarges the capacity of the cars, which, per freight car, is a great gain; the train is also shortened, which otherwise unwieldy, would he, on curves, a very material drawback. And if there is freight to the capacity of the road, with trains running as often as connections can readily he made and the husiness of this trade accomplished, to reduce the gange under these conditions the trafic could not then he provided for, hut hy lengthening the train, or increasing their number; one course would he impracticable while the other would he dangerous. If the trade was limited a like argument would he adduced in favor of reducing the grade as far as the experience now made could furnish the data. As the cars and rolling stock are increased in bulk they have more dead weight than the direct proportional increase of gauge, aud there is doubtless a limit to their size, but it is not under any gauge in use, if there is traffic enough to warrant it. The power used in moving a large heavy, hroad gauge train, that has four times the capacity of another, does not ueed but a few if any more employés to work it. Concerning the use aud power of the eugiue and the possibilities of the very narrow-gauge system for an ordinary trade and for this country in particular, can hardly as yet he decided upon until such experience has heen gaiued. The two importaut drawbacks to speed and perfect prndence in locomotion in railways is curves and grades which exist on all roads to a more or less extent, hut are reduced to a miuimum of harmlesness if the purse of the company and face of the conntry admit it. The disadvantages of curves are that the wheels pressing more on one rail than the other the friction is increased aud the train retarded; hesides from this inequality of pressure accidents are more liable to occur unless the speed is reduced. E. F. Johnson, C. E., in a report made as early as the year 1842 gives four

Principal Causes of Resislance on Curves.

"1st. The obliquity of the direction of tbe moving power—*i. e.*, the angle which the line of traction drawn from the engine to each car makes with the tangent to the curve at the middle of eacb car, in the direction of which the cars tend to move."

"2d. The pressure and consequent friction of the flanges of the wheels against the outer rail, due to the centrifugal force."

"3d. The pressure and consequent friction of tbe flangea due to the parallelism of the axles; for the direction of the taogents at the points of contact of each pair of wheels are dificrent, and, therefore, if one pair of wheels he perpendicular to its correspondent tangent, the other pair will be ohlique to its tangents."

"4th. The fastening of each pair of wheels to the same axle with which they turn."

Causes of Resistance on Gauge.

We will now see what effect these causes of resistance have upon the hroad and narrow gauge under the same conditions in other respects, the same in freight, passengers, etc.

The narrower the gauge the smaller the capacity, therefore the increased length of the train, so that cause would favor an increase of gauge.

Cause second would, with the same length of train, result in some more pressure, *i. e.* ceutrifugal force, and consequently more friction against the outer rail, for the broader gauge; but with the increased length of traiu, and for such of the narrow gauge the tangential force would he greater and consequently more preaaure and friction on the flanges of the wheels and outer rail. The outer rail is elevated to overcome the teudency of the cars to he thrown off the track, which partially answers the purpose.

The third cause would have the aame effect regardless of gauge.

The fourth cause showa the most important difference relating to the broad and narrow ganges, the other conditions heing the same. We do not think the other causes, as far as width of gauge, effects much either way; the outer wheel of the axle on a curve must go a further distance than the inner one as much as ono track is longer than the other; therefore the outer wheels must slip over this distance. If the wheels turned as in ordinary carriages, this difficulty would vanish; but this is said to he impracticahle. The only device that is in use, of which we are informed, to overcome this evil is lining the wheels, which will inadequately fulfill the purpose. As relating to this subject we may set down the following rules

Relating to Curves.

First; that with the same angle of curvature the two rails of a track (*i. e.* the arch, of the inner and outer rails) have the same difference of length for any radius, and

Secondly; that with an increase of the angle of curvature the difference of length is proportionally increased.

From the first rule we find that the distance the outer wheel has to slip over is the ssme, whatever the radius; hut in a short radius it has to overcome the *catching up*, as it were, in a less distance, one of the henefits of longer radius. Then if we find what distance of curviture and the difference of inner and outer lengtb rails in one gauge corresponds to the eame in another, it will give a comparison in this particular hetween the said ganges, which is:

	4.8½ gauge of	4°	curvature,
equal	3.0 "	" 6°16′	"
and	4.8½ "	" 6°	"
equal	3.0 "	" 9°25′	"

and tbe radius of a curve for gauge of 4.8½, multiplied by the decimal 0.638, will give the radius (nearly) that corresponds to a narrow gauge of 3.0 feet in this particular, as spoken of above; but it is not a full comparison, for while the length of a 4° curve of the 4.8½ gauge equals a 6°16′ curve, as above told, the angle of curvature subtended hy the first is 19°08′46″; the latter is 30°; so that for the 4.8½ gauge there would otherwise he the advantages that occur to a slight curvature, previously spoken of, but 10°51′14″ more of it; while for the 3.0 gauge there would he the disadvantage alluded to in causes of resistauce in curves 1st and second, but less length. This is as near as they can he compared. One example will best explsin this. A 4° curve, radius 1432.69, given for the increase of length between the inner and outer rails for 30° angle of curvature 2.46 ft., while under the same condition a 3.0 gauge only gives a difference of 1.47; an angle of curvature for 4.8½ gauge, that gives the difference 1.47 iu 19°08′46″, and this length corresponds to a 30° augle of curvature for a gauge of 3°.

Were the gauges broader than 4.8½, and narrower than 3.0 the difference would he more apparent.

The custom of railways as to curves of the 4.8½ gauge, wben of fair prosperity, is to limit them to 4 ft., except near stations, where they might he somewhat sharper, as the specd of the train at these places would he diminished. Other roads, better off financially, will not allow curves sharper than 3°, while the minimum permitted in Frauce is 2,700 feet radius, about 2°, and by the English Parliamentary standiog order of 1846 no radius of curviture can he less that one half mile—ahout 2.10.

The minimum curve on the Hudson River Railroad is 2¾. Locomotive engineere have informed me that for a 2° curve it is not necessary to slacken the ordinary speed of a train. Formerly, much sharper curves were admitted than at the present day, when the high rate of speed now practiced was not so much required. But to show what curves and grades are and can be used: a friend in Peru informs me that there are upon the railroads of that country curves of three hundred metres radius (984 ft.) on grades of 4 per cent., *i. e.* 211.2 ft. to tbe mile.

With grades, one advantage, — and all we can perceive the narrow gauge would have,— is the difference in tbe dead weights of the rolling-stock; hut with the same quantity of freight, and that of considerahle amount, this gain would be more than counterbalanced hy the increased power preaent to overcome it in the engine of the broader gauge.

Carbolic Acid on the Farm.

Joseph Harris says, in the *American Agriculturist*, that he prizes carholic acid as the cheapest and most effective preventative of foot-rot. He has no foot-rot among his aheep and no symptoms of it, hut he washea the feet of every sheep and lamh two or three times a year with this acid simply as a preventative. Sheep are frequently driven aloug our roads that have foot-rot, and the most careful farmer may get the disease into his flock. Where sheep are sent to a common resort for washing, Mr. H. would wash their feet with carholic acid hefore they were sent, and again at shearing time. With a small hrush the acid is quickly applied. He finds other uses for the same article:

"I bought a barrel of crude carholic acid for $15, and used it very freely as a disinfectant. A quart of carholic acid and a gallon of petroleum is a capital thing to use as a paint or wash for all the woodwork ahout the pig-pens, hen-houses, etc. It is death to every species of vermin, except rats and mice, and I imagine they do not love it. Last Spring I washed the trunks and large branchea of my apple, pear and cherry trees with a mixture of soap, carbolic acid and lye from wood-asbes. It killed every hit of moss, and has greatly improved the appearance of the trees. I smear the roosts in the hen-house with this, and am not tronhled with lice. It is a capital thing to wash pigs with. And for a dip for sheep there is nothing equal to it. It kills every tick, and if used strong enough and often enough, it is said to bo a certain cure for the scab—and I think there can be no sort of douht about it. It is the most penetrating substance I know anything ahout. I have used the crude acid alone mixed with water — say a quart of acid to six gallons of water—for dipping sheep, but prefer the aoap."

About Patent Roofing.

EDITORS PRESS:—Can you inform me if there are any patent roofing in San Francisco. I have seen no advertisements of aoy in the PRESS, hut there are so many in the East that I should suppose that there might he some here. The roof to my house leaks hadly in rainy weather, although I had it carefully reshingled last winter, laying the shingles four inches to the weather. Ae I wish to have a tight roof over my head tbis winter, I would be much ohliged if you could give me any information that would help me on the subject. W. L. W.

Napa City, Sept. 10, 1872.

There are some kinds of roofing used in San Francisco which are patented; hut we know of none hut what would require a practical workmau to apply it, and so not applicable to country use. If Eastern manufacturers knew the advantages of advertising in the SCIENTIFIC and RURAL PRESS, and thus introduce some of their hest and latest styles of roofing on this coast, it might awaken our local dealers, if we have any in this line, to a sense of the importance of letting the world know something of their goods and manufactures. We douht if there is any asphalt or pateut roofing equal to shingles for country use, if the roof is sufficiently steep.

Concrete Building.

EDITORS PRESS.—Noticing in your psper (of which I am a subscriher, and an interested reader) your many answers to questions, asked yon by your correspondents, it occurred to me that perhaps you would he ahle and willing to answer one or two from me, on huilding concrete houses.

First, what proportions of sand, gravel and cement to use? Whether Hydraulic cement? How thick ten feet high walls ought to be? Whether hroken bricks would do in place of gravel? The cheapest and quickest way to huild? The best way to huild and how to build?

I should like to have the concrete harden at once, so that ouly oue short hox would be required to build with. By auswering you will much oblige T. B.

Lakeport, Lake Co., Sept. 11.

Will some one of our readers who has had experience in building with concrete, favor us and our correspondent with answers to his questions.

UTAH MINES.—The Little Emma Mine shipped an average of 85 tons of ore daily duriug the past week, assaying $100 per ton.

PACIFIC COAST MERCANTILE DIRECTOR.—The second numher of this useful monthly work has come to hand, and is filled with valuahle matter. As mentioned hefore, it is published by Murray, Dewey & Co., San Francisco. The present numher contains several classifications of business and trade, and is most valuahle for reference.—*Sac. Union.*

OFFICE OF THE BALBACK SMELTING AND REFINING COMPANY, CHICAGO, July 19th, 1872.

L. P. DODGE, ESQ, Agent for Whelply & Storer.—Dear Sir:—We have for several months past heen using one of your large sized Pulverizers, and it gives us pleasure to state to you, and through you to the general puhlic, that your machine has proven to be in every respect as you recommenued, and we feel satisfied that when once used by parties for the purpose it is intended, nothing would induce them to dispense with the same, and snbstitute any of the numerous Pulverizers now known to the public. We cordially recommend you to the citizens of Illinois as a gentleman whose energy and enterprise is contributing greatly to the general welfare of our people. Yours with sentiment and esteem,

A. L. KING, Vice President,
Balback Smelting and Refining Co.

N. B. See illustrated adv. in another column.

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2,500 to 4,500 gallons, honnd with 4 hoops 2 x ⅛ and 2 hoop 2 x 3-16

4,500 to 7 500 gallons, hound with 5 hoops 2 ¼ x ⅛ and 2 hoop 2¼ x 3-16.

7.500 to 15,000 gallons, 6 hoops, 2½ x ¼ and 2 hoops 2½ x3-16.

15,000 to 20,000 gallons, hound with 8 hoops 3x¼ and 3 hoops 3x3-16.

PRICE, - - From 1 1¼ to 3 cts. per Gall.

Small tanks also made to order, also tanks of any lumber desired.

ALL WINE TANKS made of SPLIT lumber 2½ inch thick, steamed and thoroughly seasoned, from 2c. to 3½ c. per gallon.

WINE TANKS WITH DOUBLE HEAD

Manhole and with our newly invented appliance for filling and keeping them entirely full, from 3½c. to 5½c. per gallon.

REDWOOD CASKS (split lumher,) with oak middle piece and gate, from 7 to 9 c. per gallon.

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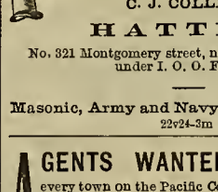

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Mining and Other Companies.

Owing to the time necessary to mail the present large edition of the M. & S. Press, we are obliged to go to press on Thursday evening—which is the very latest hour we can receive advertisements.

Auburn Gold Mining Company.—Location

of Works, Auburn, Placer County, California.

NOTICE is hereby given that at a meeting of the Trustees of said Company, held on the 13th day of September, 1872, an assessment of twenty-five cents per share was levied on the capital stock of said company, payable immediately, in gold coin of the United States, to the Secretary, at his office, No. 7 Stevenson Building, in San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Monday, October 14th, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, November 6th, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

GEO. W. DIXON, Secretary.

No. 7 Stevenson Building, corner of Montgomery and California streets, San Francisco, California. se21-4w

Beckwith Mining Company, Ely Mining

District, Lincoln County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 19th day of August, 1872, an assessment of Twenty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the Office of the Company, Room 5, No. 302 Montgomery street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Saturday, the 24th day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the 23d day of October, 1872, to pay the delinquent assessment, together with cost of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery S., San Francisco.

Cottonwood Creek Gold Mining Company.—Location of Works, Shasta and Tehama Counties, State of California.

Notice is hereby given, that at a meeting of the Trustees of said Company, held on the 19th day of August, A.D. 1872, an assessment of seven cents per share was levied upon the capital stock of said Company payable immediately, in United States Gold Coin, to the Secretary, at the office of the Company, No. 411 California street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Tuesday, the 24th day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the 15th day of October, 1872 to pay the delinquent assessment, together with costs of advertising and expenses of the sale.

JOS. L. KING, Secretary.

Office, No. 411 California street, San Francisco, Cal.

The First Annual Meeting of the Stockholders of the Golden Chariot Gravel Mining Company,

for the election of Trustees and any other business that may properly come before them, will be held at the office of the Company, No 308 Market street, San Francisco, California, the 28th day of September, 1872.

S. W. COLLINS, Secretary.

San Francisco, Aug. 31, 1872. au31-4t

Ivanhoe Silver Mining Company—Location

of works, Ely District, Lincoln County, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 10th day of August, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
E A Richardson, Trustee...	1	100	$50 00
E A Richardson, Trustee...	7	100	50 00
E A Richardson, Trustee...	8	100	50 00
E A Richardson, Trustee...	9	100	50 00
E A Richardson, Trustee...	10	100	50 00
E A Richardson, Trustee...	13	100	50 00
E A Richardson, Trustee...	32	50	25 00
G H Hunt, Trustee.....	55	10	5 00
W W Gollin, Trustee.....	58	50	25 00
Geo D Roberts.....	68	947	473 50
Thos Bennett.....	71	947	473 50
W Norris, Trustee.....	83	1000	500 00

And in accordance with law, and an order of the Board of Trustees, made on the 10th day of August, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, No. 331 Montgomery street, San Francisco, California, on the 8th day of October, 1872, at the hour of 1 o'clock P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

DANIEL BUCK, Secretary.

Office, 331 Montgomery street, San Francisco, California. se14-2w

Caution.—Louise Mining Company—Location of works, Ely Mining District, Pioche, Lincoln County, Nevada.

Notice is hereby given that the following named shares, designated by the number of their respective certificates, in the capital stock of the Louise Mining Company, by law provided, were duly advertised, and sold at public auction by John Middleton & Son, Auctioneers, on Saturday, the 7th day of September, 1872, for delinquent assessment thereon, and accruing costs of advertising and sale, and will not be transferred by said company:

Names.	No. of Certificates.	No. of Shares.	Amount Due.	Shares Sold.
A K Chase.....	111	50	$ 7 00	14
L Englander.....	298	50	7 00	14
A Fischer.....	259	100	12 50	100
A Fischer.....	260	100	12 50	100
A Fischer.....	261	100	12 50	100
A Fischer.....	262	100	12 50	100
A Fischer.....	263	100	12 50	100
J Golding.....	148	10	2 60	5
J Golding.....	149	10	2 60	5
J Golding.....	150	10	2 60	5
J Golding.....	151	10	2 60	5
A W Ingerson.....	245	50	7 00	14
S A Raymond.....	126	100	12 50	24
S A Raymond.....	130	100	12 50	24
T P Winter.....	171	10	2 60	5

WM. H. WATSON, Secretary.

Room 5, No. 302 Montgomery street, San Francisco, California. se14.2w

Marcelina Silver Mining Company—Location of works, Eureka Mining District, Lander County, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 24th day of July, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
P P Cunningham.....	23	100	$30 00
Chas F Eaton.....	71	500	150 00
Chas E Elliot, Trustee.....	60	562	168 60
O W Kellogg.....	47	521	156 30
O W Kellogg.....	64	1042	312 60
Chas S Neal, Trustee.....	67	1000	300 00
Chas S Neal, Trustee.....	70	50	15 00
J H Nelson.....	68	500	150 00

And in accordance with law, and an order of the Board of Trustees, made on the 24th day of July, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, and unless payment shall be made before, will be sold on the 30th day of September, 1872, at the hour of 3 o'clock P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

CHAS. E. ELLIOT, Secretary.

Office, room 21, No. 419 California street, San Francisco, California. se14-3w

Louise Mining Company.—Location of Works, Ely Mining District, Lincoln County, Nevada.

NOTICE is hereby given that at a meeting of the Board of Trustees of said Company, held on the 14th day of September, 1872, an assessment of fifty cents (50 cents) per share was levied upon the capital stock of said company, payable immediately, in U S gold coin, to the Secretary, at the office of the company, room 5, No. 02 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Saturday, the 19th day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 9th day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees. WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery street, San Francisco, California. se21-4w

Mina Rica Mining Company—Location of works, Auburn Mining District, Placer County, State of California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment (No. 7) levied on the sixth day of August, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Berchert, John S.....	16	375	$ 75 00
Slosson, R D.....	7	550	110 00

And in accordance with law, and an order of the Board of Trustees, made on the sixth day of August, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, No. 320 California street, room No. 5, San Francisco, California, on the 30th day of September, 1872, at the hour of two o'clock P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

GEO. H. SPINNEY, Secretary.

Office, No. 320 California street, room No. 5, San Francisco, California. se14-3w

Nevada Land and Mining Company—Location of works, Spruce Mountain Mining District, Elko County, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the eighteenth day of July, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
I Symons.....	unissued.	2199	$175 92

And in accordance with law, and an order of the Board of Trustees, made on the 18th day of July, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction on the 30th day of September, 1872, at the hour of 2 o'clock P. M., of said day, to pay said delinquent assessment thereon, together with costa of advertising and expenses of sale.

WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery street, San Francisco, California. se14 3w

Pennsylvania Mining and Milling Company.

Location of works, Scholl Creek District, White Pine County, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the ninth day of August, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Thos J Patten.....	13	500	$ 500 00
Thos J Patten, Trustee..	5	3,000	3,000 00
H Menthine.....	6	240	240 00
Rose Woodworth.....	7	200	240 00
Thos T Cook, Trustee....	18	1,000	1,200 00
J M Livingston, Trustee.	24	500	500 00

And in accordance with law, and an order of the Board of Trustees, made on the 9th day of August, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, room No. 14, No. 331 Montgomery street, San Francisco, California, on the 5th day of October, 1872, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

DANIEL BUCK, Secretary.

Office, 331 Montgomery street, San Francisco, California. se14-2w

Pocahontas Gold Mining Company—Location of Works, Mud Springs, El Dorado County, California.

NOTICE is hereby given that at a meeting of the Board of Trustees of said Company, held on the 11th day of September, 1872, an assessment of fifty (50) cents per share was levied upon the capital stock of said company, payable immediately, in United States gold coin, to the Secretary, at the office of the company, room 4, No. 401 California street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Thursday, the 24th day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before will be sold on Monday, the 28th day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

D. A. JENNINGS, Secretary.

Office—Room 4, No. 401, California street, San Francisco, California. se21-4w

Quail Hill Mining and Water Company—Location of works, Calaveras county, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 22d day of August, 1872, an assessment of five dollars per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary, at the office of the company, No. 409 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the 2d day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the 24th day of October, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. F. CRONISE, Secretary.

Office—409 California street, San Francisco, Cal. au31

Spring Mountain Tunnel Company—Location of works, Lincoln County, Nevada.

NOTICE.—There are delinquent upon the following described Stock, on account of assessment, No. 3, levied on the 9th day of July, 1872, the several amounts set opposite the names of the respective Shareholders as follows:

Names.	No. Certificate.	No Shares.	Amount.
J Buffington, balance..	6	955	286 50
David Kelly.....	132	1233	369.90
S M Keeler.....	23	666	199.80
F A Munroe.....	29	50	15.00
F A Munroe.....	31	25	7.50
F A Munroe.....	33	25	7.50
Ann O'Neill.....	93	1333	399.90
W Jeffards.....	96	20	5 00
Geo E Rogers, Trustee..	120	1333	399.90
J T Pomeroy, Trustee..	151	100	30.00
J T Pomeroy, Trustee..	152	300	90.00
J M Buffington, Trustee.	94	360	108.00
Ford H Rogers.....	124	1333	399.90

And in accordance with law and an order of the Board of Trustees, made on the 9th day of July, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction on the 9th day of September, 1872, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. M. BUFFINGTON, Secretary.

Office, room 87, Merchants' Exchange, California St., San Francisco, Cal.

SPRING MOUNTAIN TUNNEL COMPANY—POSTPONED. The above sale is postponed until Monday, the 23d day of September, 1872, at the same hour and place. By order of the Board of Trustees. J. M. BUFFINGTON, Secretary. San Francisco, Sept. 4th, 1872. sep7-3t

Silver Sprout Mining Company—Location of works and mines, Kearsarge District, Inyo county, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said company, held on the 26th day of August, 1872, an assessment of fifty cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary at the office of the company, No. 308 California street S. F.

Any stock upon which said assessment shall remain unpaid on the eighth day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the eighth day of November, 1872, to pay the delinquent assessment, together with cost of advertising and expenses of sale. By order of the Board of Trustees.

T. B. WINGARD, Secretary.

Office—Room No. 1, second floor, No. 308 California St., S. F. au31-4t

Tellurium Gold and Silver Mining Company Pine Grove District, Amador County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 3d day of September, 1872, an assessment (No 17) of one dollar ($1) per share was levied upon the capital stock of said company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, N. E. Corner Clay and Kearny streets, in the City of San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 5th day of October, 1872, shall be deemed delinquent and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 26th day of October, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office—Northeast corner Clay and Kearny streets, San Francisco, California. sep7

Victoria and Imperial Tunnel and Mining Company—Location of works, Little Cottonwood, Utah Territory.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 14th day of August, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Bidleman, J B.....	07	100	$10 00
Bidleman, J B.....	68	100	10 00
Bidleman, J B.....	59	50	5 00
Bidleman, H J.....	53	2000	200 00
Bidleman, H J.....	64	1000	100 00
Bidleman, H J.....	65	500	50 00
Bidleman, H J.....	66	250	25 00
Coburn, S A.....	8	50	500 00
Coburn, S A.....	14	50	5 00
Coburn, S A.....	15	100	10 00
Coburn, S A.....	16	100	10 00
Coburn, S A.....	17	100	10 00
Coburn, S A.....	18	100	10 00
Coburn, S A.....	19	100	10 00
Livermore, H G.....	41	2000	200 00
Raymond, Henry.....	44	250	25 00
Raymond, Henry.....	45	250	25 00
Raymond, Henry.....	46	250	25 00
Raymond, Henry.....	47	250	25 00
Raymond, Henry.....	48	250	25 00
Raymond, Henry.....	49	250	25 00
Raymond, Henry.....	50	250	25 00
Raymond, Henry.....	51	250	25 00
Tilden, Thomas.....	52	200	20 00
Tilden, Thomas.....	53	200	20 00
Tilden, Thomas.....	54	200	20 00
Tilden, Thomas.....	55	200	20 00
Tilden, Thomas.....	56	200	20 00
Tilden, Thomas.....	57	200	20 00
Tilden, Thomas.....	58	200	20 00
Tilden, Thomas.....	59	200	20 00
Tilden, Thomas.....	60	200	20 00
Tilden, Thomas.....	61	200	20 00
Washburn, C A.....	20	500	50 00
Washburn, C A.....	21	500	50 00
Washburn, C A.....	22	500	50 00
Washburn, C A.....	23	100	10 00
Washburn, C A.....	25	50	5 00
Washburn, C A.....	27	50	5 00
Washburn, C A.....	28	50	5 00
Washburn, C A.....	29	25	2 50
Washburn, C A.....	30	25	2 50
Washburn, C A.....	31	25	2 50
Washburn, C A.....	32	25	2 50
Virgin, B J (unissued)....		3050	457 50

In accordance with law, and an order of the Board of Trustees, made on the 14th day of August, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the company, Room 5, No. 302 Montgomery street, San Francisco, Cal., on Saturday, the 12th day of October, 1872, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

WM. H. WATSON, Secretary.

Office—Room 5, No. 302 Montgomery street, San Francisco, Cal. se21-3t

Winnemucca Chief Silver Mining Company—Location of Works, Humboldt County, State of Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessement levied on the 19th day of June, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
John Robins.....	150	100	$15 00
John Robins.....	160	100	15 00
John Robins.....	151	100	15 00
John Rubine.....	152	100	15 00
John Rohins.....	163	100	15 00
John Rohins.....	154	100	15 00
John Robins.....	155	100	15 00
John Rohins.....	156	100	15 00
John Robine.....	167	100	15 00
John Rohins.....	168	100	15 00
John Rohins.....	176	100	15 00
John Robins.....	177	100	15 00
John Rohins.....	178	100	15 00
John Robins.....	179	50	7 50
John Robine.....	209	500	75 00
John Rohins, Trustee....	9	500	75 00
John Rohine, Trustee....	19	500	75 00
John Robins, Trustee....	20	500	75 00
John Robins, Trustee....	21	100	15 00
John Robins, Trustee....	22	100	15 00
John Robins, Trustee....	23	100	15 00
John Robins, Trustee....	24	100	15 00
John Robine, Trustee....	25	50	7 50
John Rohins, Trustee....	26	50	7 50
John Rohins, Trustee....	27	50	7 50
T F Cronise, Trustee.....	111	500	75 00
T F Cronise, Trustee.....	112	500	75 00
T F Cronise, Trustee.....	113	200	30 00
T F Cronise, Trustee.....	114	200	30 00
T F Cronise, Trustee.....	115	200	30 00
T F Cronise, Trustee.....	116	200	30 00
T F Cronise, Trustee.....	117	200	30 00
T F Cronise, Trustee.....	118	100	15 00
T F Cronise, Trustee.....	119	100	15 00
T F Cronise, Trustee.....	120	100	15 00
T F Cronise, Trustee.....	121	100	15 00
T F Cronise, Trustee.....	122	100	15 00
T F Cronise, Trustee.....	123	100	15 00
T F Cronise, Trustee.....	124	100	15 00
T F Cronise, Trustee.....	125	100	15 00
T F Cronise, Trustee.....	126	100	15 00
T F Cronise, Trustee.....	127	100	15 00
T F Cronise, Trustee.....	128	100	15 00
T F Cronise, Trustee.....	129	100	15 00
T F Cronise, Trustee.....	130	100	15 00
T F Cronise, Trustee.....	131	100	15 00
T F Cronise, Trustee.....	132	100	15 00
T F Cronise, Trustee.....	133	100	15 00
T F Cronise, Trustee.....	134	100	15 00
T F Cronise, Trustee.....	135	100	15 00
T F Cronise, Trustee.....	136	100	15 00
T F Cronise, Trustee.....	137	100	15 00
T F Cronise, Trustee.....	138	50	7 50
T F Cronise, Trustee.....	139	50	7 50
T F Cronise, Trustee.....	140	50	7 50
T F Cronise, Trustee.....	141	50	7 50
T F Cronise, Trustee.....	142	50	7 50
T F Cronise, Trustee.....	143	50	7 50
T F Cronise, Trustee.....	144	50	7 50
T F Cronise, Trustee.....	145	50	7 50
T F Cronise, Trustee.....	146	50	7 50
T F Cronise, Trustee.....	147	50	7 50
T F Cronise, Trustee.....	148	50	7 50
T F Cronise, Trustee.....	149	50	7 50
T F Cronise, Trustee.....	150	50	7 50
T F Cronise, Trustee.....	151	50	7 50
T F Cronise, Trustee.....	152	50	7 50
T F Cronise, Trustee.....	153	50	7 50
T F Cronise, Trustee.....	154	50	7 50
T F Cronise, Trustee.....	155	50	7 50
T F Cronise, Trustee.....	156	50	7 50
T F Cronise, Trustee.....	157	50	7 50
T F Cronise, Trustee.....	172	100	15 00
T F Cronise, Trustee.....	173	100	15 00
A C Peachy.....	52	3000	450 00
A C Peachy.....	53	1000	150 00
J H Crossman.....	74	200	30 00
J D Minor.....	11	100	15 00
M S Thompson.....	12	100	15 00
J J Lynn.....	13	100	15 00
G W Carter.....	14	100	15 00
M S Bonnifield.....	16	50	7 50
M S Bonnifield.....	17	50	7 50
T J Poulterer, Trustee....	28	500	75 00
T J Poulterer, Trustee....	29	500	75 00
T J Poulterer, Trustee....	30	500	75 00
T J Poulterer, Trustee....	32	500	75 00
T J Poulterer, Trustee....	33	500	75 00
T J Poulterer, Trustee....	34	500	75 00
T J Poulterer, Trustee....	35	500	75 00
T J Poulterer, Trustee....	36	500	75 00
T J Poulterer, Trustee....	37	500	75 00
T J Poulterer, Trustee....	38	500	75 00
T J Poulterer, Trustee....	39	500	75 00
T J Poulterer, Trustee....	40	500	75 00
T J Poulterer, Trustee....	41	500	75 00
T J Poulterer, Trustee....	42	500	75 00
T J Poulterer, Trustee....	43	500	75 00
T J Poulterer, Trustee....	44	500	75 00
T J Poulterer, Trustee....	46	500	75 00
T J Poulterer, Trustee....	47	500	75 00
T J Poulterer, Trustee....	48	500	75 00
T J Poulterer, Trustee....	49	500	75 00
T J Poulterer, Trustee....	50	500	75 00
T J Poulterer, Trustee....	51	500	75 00
T J Poulterer, Trustee....	75	500	75 00
T J Poulterer, Trustee....	76	200	30 00
T J Poulterer, Trustee....	77	200	30 00
T J Poulterer, Trustee....	78	100	15 00
T J Poulterer, Trustee....	79	100	15 00
T J Poulterer, Trustee....	80	100	15 00
T J Poulterer, Trustee....	81	100	15 00
T J Poulterer, Trustee....	82	100	15 00
T J Poulterer, Trustee....	83	100	15 00
T J Poulterer, Trustee....	84	50	7 50
T J Poulterer, Trustee....	85	50	7 50
T J Poulterer, Trustee....	87	50	7 50
T J Poulterer, Trustee....	88	50	7 50
T J Poulterer, Trustee....	89	50	7 50
T J Poulterer, Trustee....	91	50	7 50
T J Poulterer, Trustee....	93	35	5 25
T J Poulterer, Trustee....	95	25	3 75
T J Poulterer, Trustee....	96	25	3 75
T J Poulterer, Trustee....	109	25	3 75
T J Poulterer, Trustee....	110	25	3 75
T J Poulterer, Trustee....	169	100	15 00
T J Poulterer, Trustee....	170	100	15 00
T J Poulterer, Trustee....	171	100	15 00
Washburn, C A.....	54	500	75 00
Washburn, C A.....	56	500	75 00
J Clem Uhler, Trustee....	57	500	75 00
J Clem Uhler, Trustee....	58	500	75 00
J Clem Uhler, Trustee....	59	200	30 00
J Clem Uhler, Trustee....	50	100	15 00
J Clem Uhler, Trustee....	51	100	15 00
J Clem Uhler, Trustee....	52	100	15 00
J Clem Uhler, Trustee....	63	100	15 00
J Clem Uhler, Trustee....	64	100	15 00
J Clem Uhler, Trustee....	65	100	15 00
J Clem Uhler, Trustee....	66	100	15 00
J Clem Uhler, Trustee....	67	100	15 00
J Clem Uhler, Trustee....	68	50	7 50
J Clem Uhler, Trustee....	69	50	7 50
J Clem Uhler, Trustee....	70	50	7 50
J Clem Uhler, Trustee....	71	50	7 50
J Clem Uhler, Trustee....	72	50	7 50
J Clem Uhler, Trustee....	73	50	7 50
J Clem Uhler, Trustee....	180	500	75 00
J Clem Uhler, Trustee....	181	500	75 00
J Clem Uhler, Trustee....	182	500	75 00
J Clem Uhler, Trustee....	183	500	75 00
J Clem Uhler, Trustee....	184	100	15 00
J Clem Uhler, Trustee....	185	100	15 00
J Clem Uhler, Trustee....	186	100	15 00
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J Clem Uhler, Trustee....	196	100	15 00
J Clem Uhler, Trustee....	197	100	15 00
J Clem Uhler, Trustee....	198	100	15 00
J Clem Uhler, Trustee....	199	50	7 50
J Clem Uhler, Trustee....	200	50	7 50
J Clem Uhler, Trustee....	201	50	7 50
J Clem Uhler, Trustee....	202	50	7 50
J Clem Uhler, Trustee....	203	50	7 50
J Clem Uhler, Trustee....	204	50	7 50
J Clem Uhler, Trustee....	205	50	7 50
J Clem Uhler, Trustee....	206	50	7 50
J Clem Uhler, Trustee....	207	50	7 50
J Clem Uhler, Trustee....	208	50	7 50
L L Robinson.....	210	500	75 00

And in accordance with law, and an order of the Board of Trustees, made on the 19th day of June, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, No. 409 California street, San Francisco, California, on the 20th day of August, 1872, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale. T. F. CRONISE, Secretary.

Office, 409 California Street, San Francisco, California.

At a meeting of the Board of Trustees held this day, the above sale was postponed to Monday, the 16th day of September, 1872, at the same place and hour.

T. F. CRONISE, Secretary.

San Francisco, Cal., August 19, 1872.

POSTPONEMENT.—At a meeting of the Trustees, held this day, the above sale was postponed to Wednesday, the 16th day of October, 1872, at the same hour and place. T. F. CRONISE, Secretary.

San Francisco, Cal., Sept. 15, 1872.

Rubber and Oak-Tanned Leather **Belting**

New Stock, just in; Pawtucket manufacture; standard quality—warranted *the best*. Come and see and get prices, or give it a trial. Sold low by

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And all other classes of work generally done at first-class establishments, manufactured by us at the lowest prices, and of the best quality.

☞ Particular attention paid to Jobbing Work and Repairs.

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MANUFACTURERS OF

STEAM ENGINES,

Quartz, Flour and Saw Mills,

ayes' Improved Steam Pump, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

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STEAM ENGINES,

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AND MACHINERY MADE OF EVERY DESCRIPTION.

Improved Safety Store Hoists,

Fitted with Cutting's Patent Cams, unequaled for safety, convenience and cheapness. This Hoist can be built for about half the price of any other in use. To be seen at HAWLEY & CO.'S.

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TURNING LATHES, Etc., constantly on hand.

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And all kinds of Mining Machinery.

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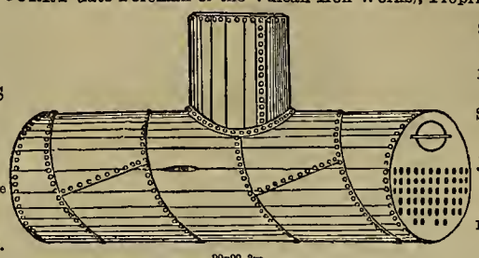

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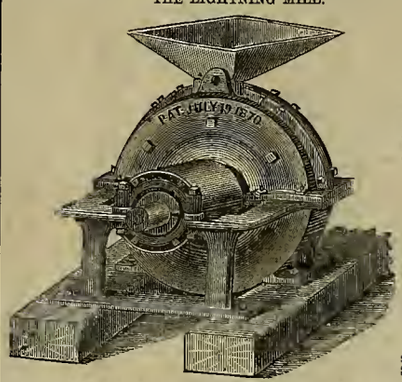

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Patent Bone Mills and Crushers.

For Grinding Bones, Rock, Quartz, and all hard substances; also, Corn, Wheat, Oats, Barley, Coffee, Spices, etc.

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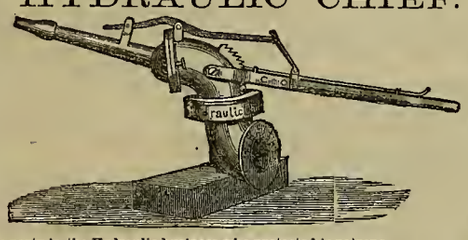

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The only reliable party in the Hydraulic business who protects his patrons.

9v23-tf Address F. H. FISHER, Nevada, Cal.

HYDRAULIC MINERS, TAKE NOTICE—I hereby caution Miners and Manufacturers against making, buying, selling or using a Hydraulic Machine or Joint known as the Little Giant, manufactured and sold by R. R. & J. Craig and Richard Hoskin, as the same is an infringement upon the invention of the machine known as FISHER'S HYDRAULIC CHIEF, secured by Letters Patent, No. 110,222, dated Dec. 20, 1870. All parties participating in such infringements will be rigorously prosecuted. Nevada, Jan. 13th. F. H. FISHER.

PORTABLE
DRILLING MACHINES,

THORNE & DE HAVEN,

Twenty-third and Cherry Streets, Philadelphia.

These machines can be placed with as much facility as a ratchet brace, and can be used in any position, at any distance, and in any direction from the power.

The No. 1 is capable of drilling up to 1¼ inches in diameter; the No. 2 up to 1¾ inches; and the No. 3 up to 2½ inches, and boring up to 4 inches.

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Machinery and Castings of all kinds.

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SCREW BOLT WORKS,

PHELPS BROTHERS, Proprietors,

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Improved Stop Governor,

Manufactured at the CYCLOPS MACHINE WORKS, 113 and 115 Beale street, San Francisco.

3v24-3m WM. CALDWELL.

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Marine, Locomotive and Stationary Engines Quartz Crushing and Amalgamating Machines, Mill Irons and Brass and Iron Castings, of every description, made to order.

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4v24-1ysIamr

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Iron and Locomotive Works.

INCORPORATED.....APRIL 30, 1868.
CAPITAL.....$1,000,000.

LOCATION OF WORKS:
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Manufacturers of Steam Engines, Quartz and Flour Mill Machinery, Steam Boilers (Marine, Locomotive and Stationary), Marine Engines (High and Low Pressure). All kinds of light and heavy Castings at lowest prices. Cams and Tappets, with chilled faces, guaranteed 40 per cent. more durable than ordinary iron.

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SAW AND GRIST MILLS,

Hydraulic Machinery,

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Of every description, constantly on hand.

Plans and estimates furnished upon application. Repairs upon all kinds of Machinery promptly made, and at moderate charges.

Having unrivalled facilities, we are prepared to make to order, at short notice, anything required in our line. Specimens of our work may be seen in all the mining regions on this coast.

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IRON CASTINGS of all descriptions at short notice.

NOTICE.—Particular attention paid to the making Superior Shoes and Dies. 3v24-3m

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ALL KINDS of Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Brace, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch

☞ PRICES MODERATE. ☜

J. H. WEED V. KINGWELL.

Notice is hereby given, that the copartnership heretofore existing between A. J. Severance, Charles W. Randall and J. Gus. Burt, under the firm name of "Severance, Holt & Co.," is this day dissolved by mutual consent. A. J. Severance, having purchased all the interest of his late partners, will continue the business of manufacturing and selling Diamond Drills, as before, under the style of A. J. Severance & Co.

Dated San Francisco, Nov. 24, 1871.

Office, 315 California street. A. J. SEVERANCE,
CHAS. H. RANDALL.
22-v23-tf J. GUS. BURT.

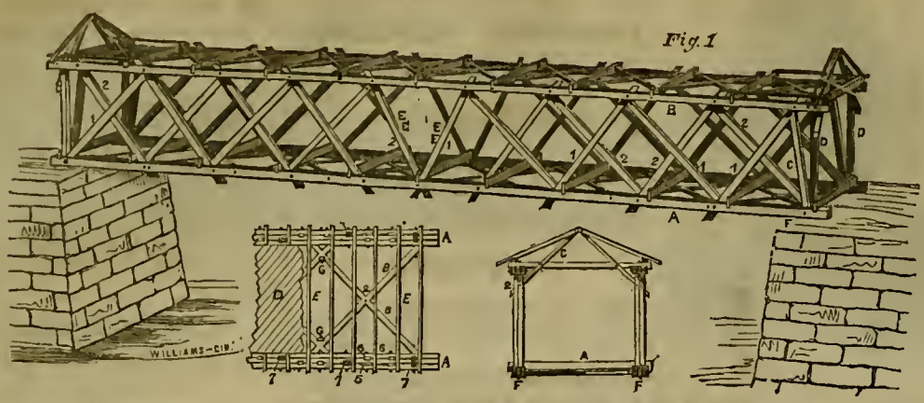
THEODORE KALLENBERG,
MACHINIST,

and Maker of Models for Inventors. All kinds of Dies Stamps and Punches made. Also, all kinds of Small Gears Cut.

Repairing done on very Reasonable Terms and in the best manner. No. 32 Fremont street, S. F. 19v23-3m

PACIFIC BRIDGE COMPANY,

Fig. 1



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Are Prepared, with Superior Machinery, to Manufacture and Build all kinds of Bridges on Smith's, Howe's, and other Improved Plans. Framing of all kinds done by Machinery.

The Smith Bridges have been thoroughly tested in the East for Three Years, and wherever tried have proved superior to any other Bridge in the following points:

Being built of wood entirely, they are not affected by change of temperature.

The timber used is placed so directly in the line of strain, that less material is required to support the same load.

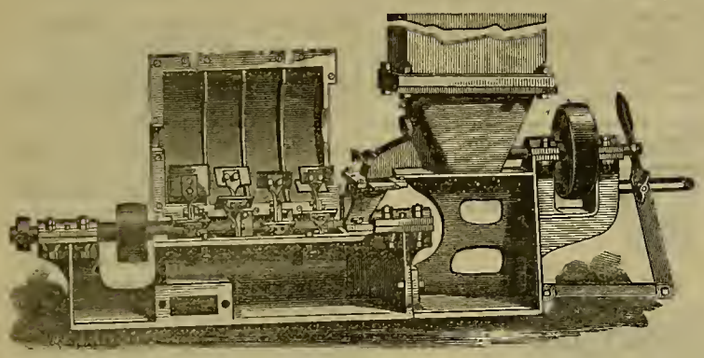
It is not perceptibly affected by shrinkage. It is the most Economical Bridge built. It is adapted to any practicable LENGTH OF SPAN.

Plans, Specifications and Terms will be sent to any County, Township or Person wishing to build a Bridge, and no charge made unless the Plan is used. For all Public Bridges the Plan will always be open to competition.

Smith's celebrated CAST IRON PIER, economical, and adapted to heavy currents, built at low rates.

C. H. GORRILL, Secretary. **W. H. GORRILL, President.**

WHELPLEY & STORER'S ORE PULVERIZER,



For Reducing Ores to Fine Powder.

OFFICE OF SWANSEA MELTING AND REFINING COMPANY OF CHICAGO.
CHICAGO, July 15, 1872.

L. P. DODGE, ESQ., Agent for Messrs. WHELPLEY & STORER—Dear Sir: Your communication of the 10th instant is at hand. In reply would say that we have been running a Whelpley & Storer Pulverizer for the last six months, grinding ores of different kinds, some of them exceedingly hard. The operation of the Pulverizer has been, in every respect, a complete success, grinding very fine, with but little power required to drive it, and but slight expense for wearing parts. We cordially recommend them to all parties requiring a Pulverizer for mining or other operations. Respectfully, J. W. JONES, Superintendent, etc.

May be seen in practical operation on Main street, between Howard and Folsom, San Francisco.

This Machinery has been adopted by nearly all the Eastern reduction works for reducing ores.

Parties purchasing machinery will find it for their interest to examine this before purchasing elsewhere.

9v25-3m GEO. D. WYMAN, Agent Pacific Coast.

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The Hesse Grinder and Amalgamator.

BEST IN USE!

Especially well adapted for the Reduction of Sulphuret Ores.

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☞ BUY BARBER'S BIT BRACE.

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Old Files re-cut and warranted equal to new.

REAPER AND MOWER SECTIONS, BARS AND KNIVES COMPLETE,

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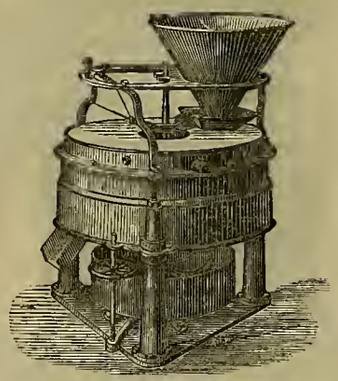
☞ Woodworth Planers a Specialty. 4v25-3m

MILL STONES.



Portable Mills, Eureka Smut Machines
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Varney's Patent Amalgamator.

These Machines Stand Unrivaled.

For rapidity pulverizing and amalgamating ores, they have no equal. No effort has been, or will be spared, to have them constructed in the most perfect manner and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the apperture and between the grinding surfaces.—Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Setlers made on the same principle excel all others. They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill-men are invited to examine these pans and setlers for themselves, at the office, 229 Fremont Street, San Francisco.

FOR SALE.

A half interest in a valuable patent for an improved Circular Saw Head Block. The invention is now in use in a large number of mills on this coast, and can be profitably handled by an energetic man. Parties wishing to purchase County, State or mill rights, can do so by addressing SAMUEL FORSYTHE, San Francisco, California. se14-4w

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ADVANCES MADE

On all kinds of Ores, and particular attention PAID TO

CONSIGNMENTS OF GOODS.

4v16-3m

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Particular attention given to the Analysis of Ores, Minerals, Metallurgical Products, Mineral Waters, Soils, Commercial Articles, Etc.

One or two pupils can receive theoretical and practical instruction in Assaying, Analysis, or any particular branch of Chemistry at the laboratory. 11v21-3m

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We purchase Ores, Bullion, etc. Ores worked Tests made with care. Also, Assays of Gold, Silver Copper, Lead, Tin and other Metals. 23v22tf

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☞ Analysis of Ores, Mineral Waters, etc. 10v20

Richardson & Co., Copper Ore Wharves, SWANSEA.

RICHARDSON & Co. have been for thirty years established in Swansea as Agents for the preparation, Sampling, Assaying, and Sale of Copper, Silver, Gold, Lead, Zinc, and all other Ores and Metals, for which they have extensive Warehouses and Wharves under cover, 1,000 feet of Quay Frontage within the Floating Dock, and the most complete Machinery and Appliances. They are also prepared to make advances against Ores in anticipation of realization, and to guarantee all payments when required. 11v24-1y

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For all Laboratory and Manufacturing Purposes
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Having been engaged in furnishing these supplies since the first discovery of mines on the Pacific Coast.

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Silver-Plated Copper Amalgamating Plates, for Saving Gold.

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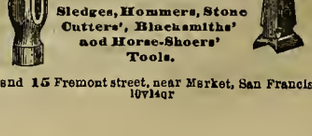

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16 and 15 Fremont street, near Market, San Francisco.
10v14qr

Can't Get Along Without It.

A gentleman writing to our Patent Agency from Ophir City, U. T., August 20th, closes with the following: "I have been a subscriber to your valuable MINING AND SCIENTIFIC PRESS for many years, and I can't see how any miner or millman can get along without it."

ARRIVAL.—L. P. McCarty, Esq., traveling correspondent of the MINING AND SCIENTIFIC PRESS, arrived in our town to-day. He was met on the outskirts by Capt Wm. Boyle, of the O. H. Treasure Co., and resched the town with him. We understand it is the intention of Mr. McCarty to make an extended examination of our mines, and have no doubt he will be fully satisfied with the result.—*White Pine News.*

EVERY farmer in California should be a reader of the PACIFIC RURAL PRESS. It is an agricultural paper of grest excellence. The subscription price is $4 a year, but we have made arrangements with the publishers whereby we can furnish the RURAL PRESS and the *Flag* together for $6 a year.—*Healdsburg Flag.*

The United Statee Mining Laws.

The MINING AND SCIENTIFIC PRESS publishes in neat, convenient form, and on good paper, the "United States Mioing Laws and Regulations Thereunder," from official copy. Of conrse, to all in any way interested in mining, it is a great convenience to be able to refer to these laws whenever the necessity presents itself. Sold at the office of the MINING AND SCIENTIFIC PRESS for twenty-five cents. —*S. F. Daily Chronicle.*

SHAREHOLDERS,
TRUSTEES, and
SECRETARIES of
ALL MINING COMPANIES,

Should see that their advertisements are advertised legally in the **MINING AND SCIENTIFIC PRESS,** at less thsn one-half the cost of daily publications. Every person interested in the prosperity of legitimate mining enterprises should favor such practical economy. Send for circular of dates for weekly advertising, frss hlanks, and a copy of the Corporation Assessment Law.

The Mining and Scientific Press for 1872 is Still Marching Onward!

Started in 1860, is one of the oldest weekly journals now published in San Francisco. It has been conducted by its present proprietors for nine years, during which period it has been repestedly enlarged and constantly improved. The active and steadfast efforts of its publishers have gained for its conduct an amount of practical experience greater than any other puolishers have accumulated on this coast, of a weekly journal.

The sum paid by us for the best editorial talent obtainable for our special class journal; for engravings, for interesting news and correspondence, and for printing a large-sized, handsome sheet, is unequalled by that of any other American weekly west of the Mississippi.

As a PRACTICAL MINING JOURNAL it has no rivalou this Continent.

It is the only MECHANICAL, and the only SCIENTIFIC journal of the Pacific States.

Every Miner, Assayer, Millman, and Metallurgist in the United States should take it.

Every Pacific Coast Mechanic, Engineer, Inventor, Manufacturer, Professional Man, and Progressive and Industrial Student should patronize its columns of fresh and valuable information.

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Every intelligent thinker in the land, in high or humble situation, who would avoid literary trash for genuine information, should SUBSCRIBE AT ONCE.

DEWEY & Co.,

Publishers, Patent Agents and Engravers, No 338 Montgomery street, S. E. corner California, S. F.

C. P. R. R.

COMMENCING

Monday, September 16th, 1872.

And until further notice, Trains and Boats will

LEAVE SAN FRANCISCO.

7.00 A. M. Atlantic Express Train (via Oakland) for Sacramento, Marysville, Redding and Portland, O. Co.fax, Reno, Ogden and Omaha.

7.15 A. M. Oal. P.R.R. Steamer (from Broadway Wharf) —Connecting at Vallejo with Trains for Calistoga, Knight's Landing and Sacramento.

8.00 A. M. Excursion Boat (Sundays only) from Broadway Wharf, connecting with Special Train of S. F. & N. P. R. R. for Cloverdale and intermediate points, returning to San Francisco by 7 P. M.

2.00 P. M.* Stockton Steamer (from Broadway Wharf), touching at Vallejo, Benicia, and Landings on the San Joaquin river.

2.00 P. M.* Steamer Antelope, from Broadway Wharf, connecting at Donahue with Trains for Cloverdale.

3.00 P. M. San Jose Passenger Train, stopping at all way Stations.

4.00 P. M.* Passenger Train for Lathrop, Merced, Visalia, Tipton and Los Angeles, Stookton and Sacramento.

4.00 P. M.* Cal. P. R. R. Steamer (rom Broadway Wharf) connecting at Vallejo with Trains for Calistoga, Knight's Landing and Sacramento.

4.00 P. M.* Sacramento Steamer (from Broadway Wharf). Touching at Benicia, and Landings on the Sacramento river.

6.30 P. M. Overland Emigrant Train, Through Freight and Accommodation.

OAKLAND BRANCH.—LEAVE SAN FRANCISCO, 7 00 8 10, 9 2 , 10 10 and 11 20 a. m., 12 10, 1 50, 3 00, 4 00, 5 15, 6 30, 8 15 9.20 and *11 30 p. m. (9 20, 11 20 and 3 00 to Oakland only).

LEAVE BROOKLYN (for San Francisco), *5 30, 6 40, 7 50, 9 00 and 11 00 a. m., 1 30, 2 40, 4 55, 5 10, 7.55 and 10 10 p. m.

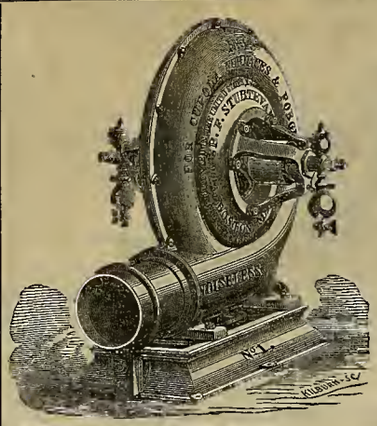
LEAVE OAKLAND, *5 40, 6 50, 8 00, 9 10, 10 00, and 11 10 a. m., 12 00, 1 40, 2 50, 3 50, 5 05, 6 20, 8.03 and 10 20 p. m.

ALAMEDA BRANCH.—LEAVE SAN FRANCISCO, 7 20, 9 00, and 11 15 a. m., 1 30, 4 00, 5 30, and 7 00 p. m. (7 20, 11 15, and 5 30 to Fruit Vale only).

LEAVE HAYWARDS (for San Francisco), *3 45, 7 00 and 10 45 a. m., and 3 30 p. m.

LEAVE FRUIT VALE, *4 40, 7 35, 9 00 and 11 20 a. m., 1 30, 4 05 and 5 30 p. m. * Except Sundays.

T. H. GOODMAN, Gen'l Pass'gr and Ticket Agt.
A. N. TOWNE, Gen'l Supt.



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For Cupola, Furnaces, Forges, Etc.

Ventilating Mines, Carrying off Dirt, Etc.

Send for Circular Price List.

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Selling Agents,

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25v24eow SAN FRANCISCO.

BLAKE'S PATENT STEAM PUMP.

BELMONT, Cal., Fshruary 6th, 1872.

MESSRS. TREADWELL & CO.—Gentlemen: In reply to your inquiry concerning the large Blaks Steam Pump, purchssed of you by Mr. Ralston, I will say that it gives ENTIRE SATISFACTION, even working as it now is, where no other Pump could; for it is at present SIX FEET UNDER WATER, yet it does its work PERFECTLY.

Yours, etc., J. E. BUTLER,
Supt. Water Works and Engineer at W. C. Ralston's.

TREADWELL & CO., San Francisco, Selling Agents for Pacific States.

☞ Machinery Depot for Miners, Millmen, and Engineers' supplies. Iron and Wood Machinery; Portable Engines; Mills; Machinists' and Mechanics', Miners' and Farmers' Tools; Sturtevant's Blowers, Turbins Water Wheels, Gardner Governors, Hardware, Rops, Nails, Wire, Hose, Mining Goods, Belting, Packing, Felting, and g neral Mill and Mining Supplies. 8v25eowbp

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Are now manufacturing besides the famous regular

GIANT POWDER, A NO. 2 GIANT POWDER,

Somewhat slower in its Explosion, which we recommend for

BANK BLASTING, COAL MINES,

AND FOR ALL SUCH WORK WHERE THE ROCK IS NOT VERY HARD

It is fully as safe as the other and evolves neither smoke nor noxious fumes when exploded.

Price. 50 Cents per Pound.

The sales of both grades increase very fast, which is the best proof of their superiority over other explosives.

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Send for our 52-page illustrated PATENT CIRCULAR, mailed free on receipt of stamp. Also the U. S. Patent Law of 1870.

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— FOR THE —
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Mercantile Director.

This is a new 16-page monthly newspaper, of special information for wholesale and retail tradesmen. It will also contain reading of interest and importance to all business and professional men on the coast.

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Our first issue for May consists of 24 pages, embracing FORTY-FIVE COLUMNS of important reading matter—mostly original and by first-class writers. Sample copies, post paid, 10 cts. Yearly subscription, in advance, $1. Subscribers to the MINING AND SCIENTIFIC PRESS or the PACIFIC RURAL PRESS will be supplied at half price.

Published by **MURRAY, DEWEY & CO.,**
At the Publishing Office of the Mining and Scientific Press and Pacific Rural Press, San Francisco.

SAN BUENAVENTURA, Aug. 17, 1872.

MESSRS. DEWEY & Co., San Francisco—Gentlemen: I received the patent specifications, drawings, etc., forwarded by you, and am much obliged for the prompt attendance you have given to all my business.

I remain, very truly youre, E. A. EDWARDS.

NOTICE.

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VULCAN IRON WORKS

HAVING RECENTLY REFITTED THEIR Shops with New Toole of late and modern improvements, have facilitiee unequalled by any establishment in San Francieco, for tnrning out with dispatch all classes of machinery used on the Pacific Coaet.

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Proprietors.

WM. H. BIRCH, Superintendent.
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English and American **Hardware!**

A Large, Fresh Stock just received. The old friends of the house especially, as well as our later patrons, are invited to send in their orders. We are prepared to fill such satisfactorily and promotly.

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Steam, Liquor, Soda, Oil, Water and Flange Cocks, and Valves of all descriptions, made and repaired. Hose and all other Joints, Spelter, Solder and Copper Rivets, etc. Gauge Cocks, Cylinder Cocks, Oil Globes, Steam Whistles. HYDRAULIC PIPES AND NOZZLES for mining purposes. Iron Steam Pipe furnished with Fittings, etc. Coupling Joints of all sizes. Particular attention paid to Distillery Work. Manufacturer of "Garratt's Patent Improved Journal Metal."

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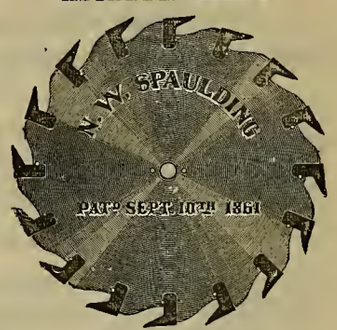
N. W. SPAULDING,
Saw Smithing and Repairing
ESTABLISHMENT.



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They have proved to be the most dursble and economical Saws in the World.

Each Saw is Warranted in every respect:

Particular attention paid to construction of
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At the lowest Market Prices.

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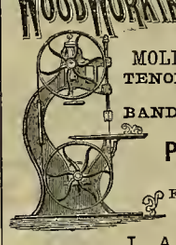

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Steam on Canals.

One of the well-known national characteristics of the American people is an abhorrance of everything "slow," and conseqnently express trains and fast packets are plenty. Ona thing has thus far, however, been altogether too slow to snit onr notions, and that is, transportation on canals. With the object in view of indncing the inventive faculty of the people to tnrn their attention towards remedying the present system, the State of New York offered a reward for the practical and profitable introduction on canals of any other motor than animal power for the propnlsion of hoats. Since that time nnmerous devices have been brought before the pnblic, but the idea seems to have been entertained by most of the inventors that the prime object to be attained was snch a motor as would cause the least "wash" to the hanks of the canal. Under this suppositon most of the "improvements have been in that direction, while the object of a cheap and efficient motor, as compared with animal power, has been more or less ignored.

David M. Greene, the engineer of the Commission which was appointed to practically test and examine the inventions bronght before them for the purposes above mentioned, has mada such investigations as the questions rerequired, and expresses the opinion that the objects of the law may be attained in a canal of the depth and width that our canals are, by law, supposed to he. One important point however, has probably been overlooked by most inventors, which is, that the Commissioners determined at their first meeting, that boats in actual service, and not drawings or models, will he considered aa competing for the money offered by the State. Mr. Green comes to the following conclusions :

First. That the washing of the banks was an *imaginary* difficnlty, which had been anticipted from the fact that the old packets, when towed at high speeds, prodnced injurious swells ; or that if these swells and the resulting injury to the banks, existed as a matter of fact, being produced by the steam-propelled freight-hoats, drawing six feet of water, they must have been prodnced by an attempt to attain a rata of speed by far too great for economy. The obvious remedy was to reduce the speed.

Second. That an average rate of speed of about three miles per honr could, probably, be economically maintained ; and,

Third. That it was quita probahle that the machinery which had been used was not properly adapted to the duty required of it; that it was not properly designed and proportioned to develop power economically; and that, to insure success, it was ahsolutely necessary that the machinery should be specially designed for the particular duty in question ; the special requisites being simplicity, strength, compactness, durahility and a proper relation between its several elements.

Mr. Green then gives a computation to show how gronndless are the fears that injurious waves, or washing of the banks will result from the attainment of the desired spaed : This we have not, unfortunately, the space to give; but the concluaion is that twice the amount of freight could be transported at an aggregate cost less than that now incurrad with animal power as a motor. Thesa conclusiona indicata that a apeed of three miles par hour can be atattainad aconomically, on our canals, by the introduction of properly-designed and constructed machiney. It may be stated, too, in thia connection, that the time required for loading and discharging many kinds of freight will be considarably shortened by tbe use of suitahle steam-power for that purpose. The fulfillment of the condition that a depth of seven feet of water he maintained, Mr. Green considers essential to the success of the schema.

In regard to the third conclusion it may ba said, that the proper proportions of boilers do not appear to have received that attention which their importance demands. The secret of success in steam machinery, lies in the boiler where steam is generated, rather than in the engine which is simply tha madinm through which such power is transmitted and applied. In order to insnre success, therefore, it is of the utmost importance that the relations betwsen the various elements of the boiler shall be such that it will generate the largest practicable amount of steam with a given consumption of fuel; a condition of thiugs only to be realized by those acquainted with the actual performance of boilers of the various types and proportions now and haretofore in use.

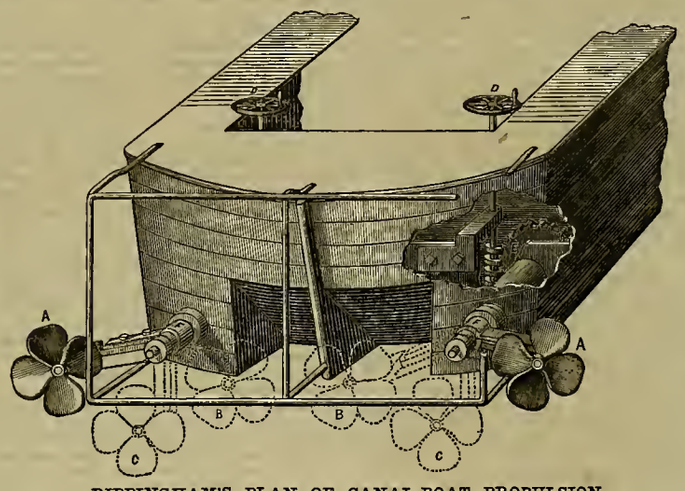
The angine mnst he large enough and yet not so large as, with its boiler, to occupy too much space and nnnecessarily reduce the space available for cargo. If the engine and boiler are too large and be worked np to their full capacity, a rate of speed may be attained, at which the cost of power would reach, and probably axceed, tha cost of horsa towage. The carrying capacity would also be reduced.

Another difficnlty snggests itself, says Mr. Greene, and that is the fact that, when light, the propelling instrument, particularly the screw, will be to a large extent out of water, the difference in draught when light and loaded, in canal boats being very great. Tha diameter of the screw for a boat drawing six feet of water when loaded, would ba from four feet and six inches to five feet. If five feet, and six inches below the surface at the top and aix inches above the bottom of the boat, when the boat is light, and draws from 16 to 18 inches, tha immersion of the propeller bladea will only be from 10 to 12 inches. This difficulty would ba remediad by placing the machinery well astern so as to increase tha draft there abova the average or by admitting a sufficient quantity of water to iucrease the draft.

Mr. Graaue thinks that one difficulty in the way of success has been that a large majority of those who have turned their attantion to tha subject hava andeavored to invent some new propelling instrument instead of directing their inventiva powers to a judicions application of well known and successful modes of propnlsion, in fact, going overt he old ground of axperiments which resnlted in the adoption of paddle wheels and scraws to the exclusion of all other devices.

With the object in view of overcoming the difficulties set forth in Mr. Greene's report and with no claim of any new principle of propnlsion other than its novel application, Mr. P. Rippingham, of Virginia, Nevada, has devised the plan shown in the accompanying cnt. This improvement consists in the employment of two towing propellers which are placed at the bow of tha boat and are so mounted that they can be raised or lowered in a circle about a center as occasion reqnires.

In the bow of the boat ara two parallel chan-



RIPPINGHAM'S PLAN OF CANAL-BOAT PROPULSION.

uels, or recesses which extend a short distance under the bottom. At each side of the bow and outside of tha channels a hollow shaft passes horizontally through a stuffing box so as to extend outsida as shown. Upon the extremity of this hollow shaft outside of the vessel a strong arm, *F F*, is attached at right angles to it. This arm haa a strong head at its extremity which stands at right angles to it in the manner of a crank. This head is bored out horizontally, and has a transverse recess mada at or near its middle which cuts the bore in the head. The propellors, *A A*, are constructed in the ordinary manner and have a fixed shaft extending at right angles on one side. This shaft passes through the bore in the head and has in the recess a pulley fixed upon it. A spindle or small shaft passes from inside of the boat through the hollow shaft and has a pulley fixed to its outside extremity.

A chain belt then passes around the pulleys so that by revolving the shaft or spindle the wheel will be revolved. Inside the boat is a worm wheel secured to the hollow shaft. A vartical shaft haa a worm at its lower and which engages with tha wheel, *E*, and a hand wheel, *D D*, at its npper end serves as a means of turning tha shaft. By meana of thia hand wheal the propeller can ba revolved about the canter to any part of a circle desired. The railing ia arranged as a protection to tha propellers to guard them from injury. In passing through locks or when tha boat is empty the propellers will be revolved toward each other in front and below the bottom of the boat. The dotted lines show the different positions in which the wheels may ba placed. A patent on this device has been applied for through the Scientific Press Patent Agency.

The Mining Situation.

The local papers in most of the mining districts of the coast are very sanguine with regard to the energy with which work is being pushed in their respective localities, and the developments that are being made. At Grass Valley everything seems to he bright, and mines thst have been for a long time paying institutions are increasing their dividends. Among the prominent mines there are the Idaho which is getting richer; the Empire, doing well; tha Eureka paying $11,000 for a two weeks' run, and the North Star. Plenty of work for miners and no idlers in town. At Ruby Hill the Tambien, Monitor, Birch and Comet, are all looking well and at Rubyville the mill is crushing ore from the Birch. The McMahon, Jupiter and Woodburn, are all turniug out ore. From Centerville and Silver Cañon reports are good and work on the mines progressing.

At Ely District everything is abont as usual, which means in excellent condition. This camp bids fair to be, if it is not now, the most important one on the coast and by its assistance this year the bullion product of Nevada will probably be donble that of last. The shipments of bullion from Piocha aggregate more than $100,000 per waak now and are steadily increasing. The peopla are all satisfied with their prospects and it wonld be stranga if they were not. The Raymond & Ely, the most prominent of the district, turns out its bullion from 960 to 995 fine. Tha Meadow Valley mine is doing well and ships from twelve to fifteen thousand dollars worth of bullion every other day. The 20-stamp mill of the Floral M. & M. Co. will shortly be up much to the joy of the miners who hava good claims hut no mills.

The Carson *Register* has been shown an abstract statement from the quarterly assessment rolls of the proceeds of the mines of the State of Nevada for the year ending December 31st 1871. We extract as follows, omitting the fractions of tons:

COUNTY.	TONS.	VALUE.
Storey	395,600	$10,095,360.
Elko	6,702	613,621
Esmeralda	3,028	138,079
Lander	25,995	2,099,013
White Pine	38,604	1,187,121
Nye	3,687	464,770
Lincoln	22,842	3,684,616
Humboldt	20.168	499.458

In adddition to this there was worked 221,238 tons of tailings, valued at $1,345,643, making a total of $20,026,585. The report shows tha gross yield for 1870 to have been but little over half that of 1871. The average value of ore produced in Storey county is $25 per ton while that of Lincoln county is a little over $156 per ton, so she stands at the head of the list for richness of ora. New miues are heiug opened and old ones started up again. In fact tha news from all points of the Coast is encouraging, and mining as an industry was never in so flourishing a condition as it is at prasent.

Asbestos.—James W. Marshall, the discoverer of gold in California, has found an extensive deposit of asbastos about ten milas from Folaom, Cal.

Agassiz. — It is understood that Professor Agassiz will leave for the East on Tuesday next.

Notes on the Reduction of Gold Ores.

By H. A. Thompson, M. E. of Melbourne.

In considering the methods in use for the extraction of gold from the minerale with which it ie usnally associated, it should he borne in mind that the treatment mnst vary both with the peculiar conditions of the gold itself, and aleo with the charactsr of the other metallic bodies aggregated with it in the qnartz. To enter into all the modifications that would be required in each part of the treatment to meet the different descriptions of gold-bearing quartz, would extend thess notes to too great a length, without adding much to their nsefulness,—the mineral character of the great majority of our qnartz mines being nearly the same, and only varying in degree. The following notes are, thsrefore, only intended to point out the principlee on which our reduction processes should he baeed, as regards the greater part of our qnartz mines, without referencs to the exceptional casss, where the presencs of rarer minerale reqnires a change, or modification of the system pursued. The snbject may, for conveniencs, be divided into three parts—first, the reducing machinery; second, the extraction of the free gold; and third the means best calenlated to savs the pyritone gold, now passing away with the waste tailings.

Reducing Machinery.

The reducing machinery may bs divided into two classes,—first, machines depending on impact for their crushing power, such as stamping mills,—and inveutions on a similar priuciple to Balfour's crushere;—second, grinding machines, such as the Chilien mill, arrastra, etc. Two other mills are aleo used for crueh-ing ores. One the roller mill, where the ore pasees between two revolving horizontal rollers, kept in close contact by a weighted lever. This mill ie employed for the coarse crushing given to lead ores, but it is uselees where fine crushing ie required. The other is the common flour-mill, or modifications of it, only applicable to further reducing the tailings to any required degree of fineness.

The force gained by impact will be readily understood when we consider the simple action of driving a nail into a heam. If we place the hammer on the head of the nail, and endeavor to thruet it in hy preseure alone, an enormons amount of power is required to effect the purpose. But uee the hammer in the ordinary way, and the nail ie driven home with great ease. This is what is meant hy the force of impact, and ite degree is ascertained hy multiplying the velocity with which the hlow ie given, into the weight of the hammer. A etamp might rest on a piece of qnartz, and he loaded with many tone of weight without crushing it; hut let the eame etamp acquire the force of impact by falling only a few inches, and the piece of quartz will he crushed to a powder. In the ordinary stemping mill, the velocity ie that of a body falling under the well-know law of gravitation, and is, therefore, only capahle of increase hy increasing the weight of the etamp on the lift,—that is, the distance the stamper has to fall. It has been proposed to nse etampers working on the principle of the steam hammer, and the increase of the velocity would no douht give increased crushing power; bnt whether this plan would not be attended hy inconveniencee more than connterhalancing the advantagee gained can only he settled hy actual trials, and those hitherto made have not been successfnl.

Balfour's Crusher.

Balfour's Crnsher is simply a strongly-made fan, similar to those ueed for the fan hlast, the arms heing faced with flat hammers, and driven at from fifteen hundred to two thousand revolutions per minute. The great velocity is necessary to compensate for the want of resistance—this being only the inertia of the pieces of qnartz. A number of machinee on thie principle have been patented in the United States, but the epeed at which they have to he driven causee euch an amount of wear and tear, aud liability to accident, that after repeated trials they have been abandoned. Another fatal defect in these machines is the action on the gold, which is broken up into infinitesimally small particles, reudering it very difficult to collect without paseing all the sand through an expensive process. In a trial made at Clunes of one of these machines, where the crushed material wae carried hy the hlast into a chamher fifteen feet in length, and there allowed to eettle on the floor,—it wae fonnd that the sand at the far end of the chamber contained as much gold as that close to the machine,—thue indicating that the gold had been hroken into particlee so emall as to allow of its floating fifteen feet in the atmosphere of the chamher.

Grinding Machines.

The action of the grinding machine will be hest illnstrated by considering the effect of a pestle pressing on a piece of etone. So long as thie preesure is downward only, it will reqnire great force to hreak the stooe; hut if, while the downward preesure is continued, a lateral twist ie given to the pestle, the disintegration of the stone is effected at once. This is the principle of the Chilian mill, where the rollers make one complete revolntion on the vertical line of their diameter, for each revolution in the basin, thus ohtaining the twist which really gives the grinding power, and hut for which the action and effect would be eimilar to that of a garden roller on a gravel walk. The arrastra partakee in a miuor degree of the sam principle, the crushing power being mainly derived from the grinding action caused hy ths stones dregging over the quartz; but it must bs evident that the grinding action in this machins is less than in the Chilian mill, and its disintegrating effect is in proportion. In consequence, the arraetra is seldom used, except for reducing sand to a fine powder, and evsn for this purpose machines on a similar principle to the flour mill are more effective.

The disintegrating power of a crnshing mill mnst then depend either on the grinding action or the force gained hy impact; and if thie principle had been kept in view, inventors would have saved mnch time and money, which have heen thrown away in the mannfactnrs of machines the educatsd engineer could at once see were uselees.

The Chilian Mill.

Ths Chilian mill was much nsed in the early days of quartz mining in this colony, when the rich surface deposits of gold were opened; hut when the poorer quartz had to be treated, it was fonnd too slow and costly for operating on the large qnantities of material reqnired to make the mines pay. As the qnartz was raised from a greater depth, another ohjection was found to attend ths uss of this mill. The grinding of the undecomposed sulphides in mercury with heavy rollers, hae great tendency to promote a combination of these sulphidee with the mercury, forming what is know to crushers as black amalgam, and causing a great loss, both of time, mercury, and gold.

Ths Chilian mill is now seldom used, except as a second process after ths stamps, or for grinding and amalgamating rich concentrated sand after the latter has been roasted. For ordinary quartz crushing and amalgamating, even when worked with great care, it does not save a larger percentage of gold than well-arranged stamping machinery will do, and ie far inferior in other respects.

Stamp Batteries.

The etamping mill is the machine now ueed almost universally for the reduction of gold ores, and is so well known that a description of it would he superfluous for those to whom theee notes are addressed. Meny modifications of the details of construction are in use, and it will only he necessary to consider the principlee on which the more important of these are based. The old Cornieh stamps have rectangular heads, the provision for raising the stamper being by means of a tongue projecting from the lifter, which tongue is caught by a cam keyed into a large cam harrel, and the openings for the escape of the crushed material are of small area. The faults of this arrangement are, that the stamper heing lifted from a point eome six or seven inches in front of the center of gravity, a strain ie brought on the lower front hrace, and the back top brace, which greatly adds to the wear and tear; while the center of the cam barrel being a long distance from the lifter, the leverage is increased in proportion, aud a considerahle amount of driving power is thns wasted. The introduction of round heads has remedied many of the defects of the old Cornish stamps. A disc on the lifter snpercedee the projecting tongue, and the cam barrel is replaced with a shaft set close up to the lifters. On this ehaft are keyed the wipers, which catch the disce at the side of the lifters. By this means the lifting point is hrought much nearer the center of gravity, and the leverage is reduced to a nininiun, while a partial revolution of the stamp occurs at each blow, so as to equalize the wear of the head. The screw disc, a plan introduced by Mr. John Martin, to whom the mining interest is indehted for many improvements in the details of mining machinery, is a great advance on the old plan of keying the disc to the lifter, as it allows of exact adjustment without stopping the stamps. Douhts have heen expressed as to whether round heads would crush so well as square heads, hut an effectual trial made, where the conditions were exactly the same, proved that there was little, if any, difference between them in crushing power.

Round stamps are nsually worked at a lower rate of speed than square ones. This has arisen from a desire to make the lift with ae little jar as is possible, and for this purpose using long cnrved wipers. It wonld, however, be more economical to use shorter wipere, even at the coet of a little extra power and jar, for the purpose of allowing more speed. With from eight to nine inches lift, stamps shonld be driven at the rate of eigthy hlows per minute.

The advantege attending increased speed is not that derived from the extra number of blows per minute alone, for the water in the stamp coffere heing kept in a greater state of agitation, the sand is cleared away more rapidly through the escapes, thus preventing that choking of the coffers which impedes the effective action of the stamps, and the increase of quartz crushed will he fonnd to be greater than the extra number of blows per minute will account for. With a similar view of getting the sand out of the coffers ae soon as it is crushed small enough to pass through the gratings, it is always advisable to have the escapes cut as large as they conveniently can be, occnpying the whole front and back of the coffers. The quantity of water used may be from five to eight gallons per head per minute, the exact amount heing regulated by the character of the material to be crushed and the weight of the stamps.

(To be continued.)

Suggestive.—England paid the United Statee laat year for cotton $184,000,000, and making thia into fahrics she cleared $188,000,000 of net profit, more than donbling her money.

The Big Outcrop of Parley's Park.

We copy the following editorial correepondence from the *Engineering and Mining Journal*, concerning this interesting section of country:

"I havs made a trip to Parley's Park, to see the monumental ontcrop of the nineteenth century, the nswest sensation of this most sensational camp, in short, the McHenry ledge, concerning which the Associated Press has been telegraphically eloqnent, and the Gentile world of Utah has heen hy turns insanely enthusiastic and dismally cynical. One naturally grows a little *blase* after many yeare of enforced practice in looking at wonderful, inexhaustible iucalculahly rich deposite; and if I do not gush ae ahundantly over this one as might be expected, it is perhaps hecause the fountaius of youthful admiration are hsginning to run dry. Certainly the McMenry mine promises to hs a most valuable one, as you shall hear.

The route to Parley's Park from Salt Lake City follows for a considerahle way the old ovsrland stage road, passing Camp Douglass in the distance, and winding through the pictnresque Parley'e cañon. The Park itself is a small, nearly level plain, snrrounded on all sides hy the mountains, and the principal mines are near its southern end—on the weet, near the summits in which head the famoue Cattonwood cañone over the rangs, are the Flagstaff (not the Cottonwood Flagstaff, hnt an emulons namesake) Walksr and Webster, and Piñon—all in limestone. More nsarly south of the Park, on a mountain which, heing much covered with boulders, soil and pine timher, hae heretofors been avoided by prospectors, is the McHenry, with its extension each way, and beyond these, on the northeast, the Boulder, and on the eouthwest, a eecond extension, the Clara, the Wasatch, and the Red, White and Blue, all of which are vehemently declared to he daughters in true lineal connection of the eame mother lode, to-wit, the McHenry aforeeaid. From the McHenry mine to Salt Lake it is 29 miles; and the road near the mine ie abominably eteep and difficult. But to Echo City on the U. P. R. R., it is only 24 miles via. Provo valley, and a new narrow-gange railroad said to be constructing from Echo to Heber City hy the Mormons, would pass the foot of the mountain, ahout three miles from the mine.

The monntain is quartzite and granite, mostly hidden from sight hy the superincumhent earth and vegetation. Boulders are plenty, and in the small steep cañon on the west they have heen carried down for a considerahle distance. It was in this cañon that the rich float rock was found which led, after much lahorious prospecting to the discovery of the ledge. Not that it was eo very hard to eee; the discoverer eat on it a dozen times to wonder where it was, never euspecting that the large rock-mase beneath him was the outcrop of a vein.

This outcrop consists of a cliff, about ninety feet high, two hundred and fifty feet long, and perhape fifteen feet wide on the top, from the edge to the line where it disappears under eoil, roots and boulders. Thie cliff is believed to he, with the exception of a sheathing of qnartzite, which adheres in placee to the face, entirely composed of silver-hearing quartz. The evidence consists of numerous assays of samples chipped from all accessible points. The average of sixty-five assays ie said to have been a little over $200 per ton, the minimum heing $22. Some assays have yielded less; hnt these are declared to have been made upon samplee of quartzite, outside of the vein. Perhape fifty tons have heen blasted from one corner of the mass, and form the beginning of a dump. A dump, you must understand, is the correct thing for a miue to possess in this qnarter of the world; and though there is no talk at present of selling the McHenry, yet if it should hereafter he put on the market, doubtless it would need a dump. As the rock above ground amounte to 16,000 tons, it will be seen that the formation of a dump is an easy matter. So far as the excavation has gone, it shows the mass of quartz to be more or less charged with "mineral" in hluish and hlack spots, and ochreous or light yellow stains, as well as copper stains. It looks like a fair milling ore, and an experiment tried with 75 pounds in San Francisco ie said to have proved it to yield its silver readily by raw amalgamation.

It is impossible to say at present with positive certainty what is the form of the deposit. At firet it was naturally believed to be an immense houlder, hut the discovery of more or less ore in the located extensions givee ground for believing that it is really an outcrop in place; and the question then arises as to the true dip and real width of the deposit. Its course is N. E. and S. W. If it dips S. E., that is, into the mountaiu, then the ninety feet of vertical exposure represents an ohliqne section across a vein of say sixty-five feet thickness. If it dips steeply N. W., that is, with the hillside, then the cliff is a portion of a vein, say twelve feet thick, and stripped on the hanging wall. In the former case, the assaye takeu all over the surface might be presnmed to represent the character of the vein throughont ite whole sectional area. In the latter case the larger numher of the assays would represent the character of a zone along the hanging wall. There are both arguments and indications in favor of the eupposition that the ledge is intercalated hetween layers of quartzite, and dips into the monntain. A tunnel now constructing, about 150 feet below the topmost outcrop will probahly decide the qnestion of form, thickness and value. It hae already, at 90 feet from the tunnel mouth, struck hard bluish qnartzite, dipping S. E., about 30 degrses, and it ie expected within the next ninety feet to cut the vein.

The McHenry is owned by Messrs. Whitaker & Templston. The former, Mr. James T. Whitaker, is a New Yorksr, well known to the msmbers of the Union Club. It is popularly reported that he and his partner paid a handsome eum—eay one hundred thonsand or two hundred thoueand dollars—for the property; hnt they keep their own connsel, and nohody really knowe the terms of the purchase except the parties immediately concsrned. At present, they are engaged in developing the nature and valns of the mine. If it sustains the high anticipatione inspired by ite superficial appearance, they will probably erect a etamp mill of large capacity, and commence extensivs operations. It is understood that heavy sums have been offered for ths mine as it stands; but every lucky mine-owner in Utah wants a million or nothing; and these gentlemsn have faith enough in their property to helieve that it will improve upon acquaintance, and he worth more when developed than in its present vagusly vast and imposing uncertainty.

Ruby Consolidated Works.

The magnificent works of this company are fast approaching completion. A brief description may not be without intsrest to our readers. The main building is 34 hy 100 feet, which is to contain ths three furnaces, and the machinsry. The second floor is 67 by 32 feet which containe the feed floor. There are behind the main bnilding two othere on different grades which conetitute the ore dumpe. One ie 21 by 32 feet, the other 24 hy 32 feet, and they together make a capacity of 2,000 tone. The ore falle from the wagon npon the first-floor, and thence to the rockhreaker npon the second floor. Each building ie hacked by a eolid three-foot wall. The firet is 14 feet high hy 100 feet in length, the eecoud ie 10 hy 67 feet, and the third 10 by 32 feet. The three furnaces are 5 hy 6 feet each, 14 feet from tweers to feed. Each hae tin tweere. These furnacee instead of discharging into the open air ae other furnaces here do, through smoke stacks, empty into an iron flue 57 feet long, terminating in a closed iron tank 12 feet square aud 7 feet high. On the opposite side of this tank auother flue opene, and rune up the hill 150 feet to a brick stack 45 feet in hight. The exhanst steam from the engine will discharge into the iron tank. In the flue from the tank to the stack are three reeervoirs or sumps, which, ae well as the tank, have doore from which auy sediment may be removed. From the tweers to the top of the smokestack the attitude ie 125 feet.

It seems ae thongh it would he impossible for any precious metale to get beyond the emokestack, passing, as the smoke and cinders have to, through the tank and fluee. The foundations of the furnaces are now heing laid. For 9 feet from the ground the furnacee will be huilt and lined with fire-rock, with a tamping of compoeition between the outer and inner walle to guard the furnace against expansion. The machinery, together with iron for the roof, and galvanized iron to line the reservoirs, which are to hold 10,000 gallons of water, wae all purchased in Council Bluffs. The engine is of forty-horee power capacity, to be driven by two tuhular boilere. The hlast will be supplied hy two No. 4 Root blowers.

The coal chutee were on each side of the ore house, and are arranged so as not in any way to interfere with the receiving or handling of the ore. The work thns far ie a credit to Eureka, and—without depreciating othere—hids fair to he one of the most complete institutions of its kind erected anywhere. The furnaces are intended to be of the capacity of forty-five tons per day each hnt will probahly reach fifty. The contract wae let on the 19th of Jnly last, and four months was allowed in which to complete it, hut Mr. Jamee Montgomery, the supervising architect, thinks he will have the furnaces all in full blast by Novemher 1st.—*Eureka Sentinel.*

Steam Plowing in England.

Is eteam-plowing in England as mythical and rare as in this country? Are the statements made concerning the amount of steam-plowing done there eimply false? Do they corrspond in practical accnracy with those made concerning the exploits of American plows? Have we been deceived? Fawkes, with hie plow in the West, was at first reported as doing, and then as just going to do, wonders with it. He did plow a good many acres of ground, and at such cost that it did not pay to use it. In one or two places—one in Louisiana, one in New Jersey or Delaware, and, we helieve, on one farm in Minnesota—steam-plowing is reported as practiced. But we have seen no figures that prove its economy in American hushandry.

Now comee the etatement hy a correspondent of the *Country Gentleman*, that he looked over England recently with especial reference to the use of the steam plow there, made diligent inquiry but obtained bnt very little definite information ahout it. He could only learn that it wae *believed* to be in use on some of the larger farms in the south of England, hut this correepondent concludes "that the old fashioned way of plowing is the only one in practice in England." At least he did not eee the puff of a single engine propelling a plow, and he kept hie eyes open.—*Rural New Yorker.*

SCIENTIFIC PROGRESS.

The Locomotion of Animals.

Microscopic animals move rapidly through the water by means of little oars or *cilia*. There are creatnres which are destitute of shape, and yet can form any part of themselvea into stomach and digestive organs, or can temporarily assume forms which give them means of locomotion. Others throw out arms and seize their food, but yet have no specific shape when at rest.

Belonging to a higher order are the jelly-fish. These strange creatnres which, while in the water, are perhaps as large as a wash-tub, if dried scarcely weigh an ounce. They do not move hy means of muscles, but hy cells independent of each other, which, by contraction and expansion, answer the purpose of paddles.

The star-fish is among the most curious of ocean forms, having his month in the center of his body, his eyes at the end of his arms, and a acries of suckers, constituting locomotive appendages, thrown out from beneath the animal in the water. If the star-fish wishes to travel, he attaches these suckers to whatever is ahead on the ocean bed beforo him and pulls himself forward. The common fresh-water muscle has large muscles, whick give motion to a long foot which it wedges into the sand, and then, by contractiug the foot, draws the shell after it. There is another fresh-water shell-fish which darts out its foot with great rapidity, and as suddenly contracts it, and by this propulsion swims through the water. The scollop is an animal which swims by opening and closing its shells, forcing the water ont from between them. The cuttle-fish has two broad fins behind and a series of long arms in front. It draws in water as most shell-fish do, bnt, unlike others, pumps it out in front so that it swims backward, though it has also, by other means, the power of swimming forward.

Worms move by means of little bristles, which stick ont from the sides of the body, and are used to hold part of the body while the rest expands, or while part expands the rest contracts, and thus the worm is drawn forward in sections. This is the caee with the common angle worm. Among the crustaceans, the lobster either crawls forward with his legs or jnmps backward by strokes with his tail. The eyes, monnted on the end of long feelers, can look over the shouldera of the animal while he is jumping backward.

With birds, if the wings are small, they move rapidly; if large, slowly. The grasshopper hss a variety of modes of locomotion, and the cheese-mite or "skipper" hops by coiling his head and tail together in a ring and pulling them suddenly apart with a snap. The locomotion of the snake is obtainod by means of ecales, which are thrust against the ground by motions of the ribs, actuated by powerful mnscles. It results that if a snake, though capahle of the most rapid movement on the ground, be put on a smooth surface, like that of glass or varnished wood, he will wriggle with great efforts, but make no forward progress.

The variety of functions performed by the muscles of the birds and the singular shapes of their hills, adapted to their varions modes of feeding, are really wonderful. The arms become the organs of flight, and the bones are bridged, and trussed, and modified so as to give the requisite power. The tendons naturally close the toes when the weight of the body rests so as to bend the leg; thus the bird rests securely on its perch. Hence, also, the fowl always shuts its toes as it lifts them, because bending the leg draws the tendons. The modification of the arm of the bat still leaves it an organ of flight.

In the lower vertebrates we have simply fins; going up step by step the functions of the arm escape the need of use for locomotion. The higher the grade of animals, the greater the power of the arm for other purposes than that of locomotion. The monkey uses the arm and hand for a great variety of other purposes,such as for feeding itself, and the female monkey holds its young to its breast by means of its arms. At last with man the arm becomes a cephalic appendage, and is no longer used for purposes of locomotion, unless, indeed, he drive a hand car. Step by step among the lower animals we may trace the improvement of organ and of function until we reach its highest development in a species where only the lower limbs are employed to carry the body, and the upper become exclusively the servants of the hrain.

POSITIONS FOR ASTRONOMICAL OBSERVATIONS. Astronomical observations should be made from high elevations. Professor Young reports the whole number of lines in the chromosphere seen from Sherman, a lofty station on the Rocky Mountains, as 150, which is three times as great a number as have been observed from near the sea level. In these localities the atmosphere is clearer, steadier, and it is owing to this fact that a star has been recognized at these high altitudes as having a companion or heing a double star, uot previously known as such. An observer on the Pacific Coast reports to Professor Pierce that he can see the companion of the star Polaris from a high point on the Sierra Nevada. It is well known that this is a test of great uicety, requiring the utmost purity of atmosphere. Teleecopes will hereafter be placed higher than ever before—in Europe, probably on the Alps.

Remarkable Cases of the Disintegration of Tin.

We find in the *American Artisan*, of August 31st, a paper rccently read before the Royal Academy of the Netherlands, which annonnced a singular caso of disintegration of tin nnder the combined influence of cold and continned vibration. The facta are espccially worth noticing, for circnmstances may arise in the arts when these facts may serve to explain certain phenomena, the cause of which may not be understood. Moreover, everything that pertains to the moleeular modification of metals is of importance, and deserves special attentiou. The facts are given as follows :

A commercial house of Rotterdam had dispatched, the previous winter, a certain quaatity of tin in the ordinary form of ingots. The metal, transported by railroad in extremely cold weather, arrived at its destination in the form of a powder, the grains of which were coarse and crystalline. The appearance of the mass was so little like that of a good quality of tin, and the transformation of snch a solid mass of metal into such a form was a thing so nnheard of in the commercial world, that at Moscow, the place of destination, it was thought to be a fraud, and so mnch the more when an attempt to unite the finely-divided metal by fusing, resulted in the formation of a large qnantity of oxyd of tin, and the whole yielded nothing but a gray powder. It was of a gray color, entirely different from that of ordinary tin, and which could not be better compared than to sulphate of molybdinum. Chemical analysis showcd that the metal was almost absolutely pure, containing at the most but three per cent. of foreign metals— a little lead and iron.

The author gave it as his opinion that the molecular modification supervening in this case, conld only have resulted from vibration and intense cold, or, perhaps, though not probably, one of these causes alone.

Another Case.

The publication of the above called forth the following letter in the subsequent number of the *Artisan:* In your issue of Aug. 31, I notice the translation of an article "On a Remarkable Case of the Disintegration of Tin," and this indnces me to communicate an exactly similar case which occurred in this city aboont a year ago. At that time I was requested by the United States Ordnance Bureau of this city to look at two pigs of metal which had been bonght by the Government several years before as "Banca tin." They had lain since that time quietly and undisturbed in the storehonse, and had only recently been opened again. One of the pigs had crumbled almost eutirely to a gray granular powder, and what waa left, seemingly intact, could be rubbed to powder by mere rubbing with the fingers. In the other pig, the process of disintegration had already commenced, but was as yet confined to the edges, and I obtained a pretty good cross-section, which I send you herewith for inspection. The phenomenon was so entirely new to the officers and myself that a fraud was suspected; but, on analysis, I found that it was really pure Banca tin. I endeavored to learn something of the previous history of these pigs, but, owing to the length of time which had elapsed, I was nnsuccessful. I helieve that the case you quoted and the present one are the only two that have thus far been observed of the granular condition of tin.

I. WALZ, Ph. D.

[The portiou of the pig of tin sent to us for inspection answers in all respects to Dr. Walz's description, and is certainly a remarkable specimen. No doubt, the invcstigation of the phenomenon might lead to important discoveries in the physical properties of metals—a field, by the way, not yet half explored, notwithstauding the rich crop of results likely to be harvested.—*Ed. Artisan.*]

The Colors of Gems.

Can science explain the coloring of gems ? Everybody knows that the white light which reaches us from the sun and other heavenly bodies can be decomposed into a number of colored rays, by passing it through a triangular prism. A child blowing a soap-bubble produces colors as splendid. In fact, a thin plate of any transparent substance whatever, becomes colored under white light. Striated surfaces also offer effects uot less brilliant; so that, to clothe certain insects more vividly, nature has grooved the tissue that envelops them. The rainbow, which the sun paints in a thousand colors in the drops of the falling shower, is the transcendant effect of decomposed light. Nature, with a palette, so to speak, charged only with white, knows the art of spreading over all her pictures the msgic and glow of the most brilliant coloring. But we have not exhansted all the resources of this coloriug, the secret of which is the light itself. Here science is at fault; and we must still say what Huyghens said at the end of the seventeenth century : "In spite of the labors of Newton, no one has yet fully discovered the cause of the color of bodies." We must, then, admire, without penetrating this secret, the peerless red of the oriental ruby, the pure yellow of the topaz, the uumingled green of the emerald, the soft blue of the sapphire and the rich violet of the amethyst. This is not the only thing the discovery of which we shall leave to posterity.

PARASITE IN THE BLACK CRICKET.—A correspondent writes the *Scientific American* as follows: "I recently crushed a common black cricket, about three-fourths of an inch in length, and there came out of the body of the insect a brownish-colored water-snake more than nine inches long, about one-sixteenth of an inch at the largest diameter or center, and about one-thirty second of an inch at the smallest, or uock, with some appearance of head. It has lived now forty-eight honrs in water, and there is no diminntion of vigor. It is very active. The cricket was very lively with its strange burden, which was packed into the body between the soft parts and the externai shell. Can yon tell me what the phenomenon means ? Did the cricket swallow the snake, or did the snake originate there?"

MIXING COLORS.—When two or more colors are mixed together, the hue produced does not result from the loss of the particles of either of the colors by absorption or chemical changes of any kind. The microscope reveals the fact that minute particles of each color remain entirely separate.

HEAT OF THE SUN.—According to the *American Gas Light Journal*, an area of ten square feet on the surface of the sun emits heat enough to run an engine of 45,984 horse-power.

MECHANICAL PROGRESS.

Transmitting Power from Motors.

Light vs. Heavy Shafting.

The following article from the *Journal of the Franklin Institute*, furnishes some valnable facts and suggestions with reference to the transmission of power by belts, with light shafting running at high speed, and also illustrates, very forcibly, the advantages of light shafting. We trust all onr readers will peruse the article, as it is of more than ordinary interest and value, especially in regard to the location of water-powers in rough mountainous regions, as among the mines on this coast. The *Scientific American*, which also copies the article,says in reference to it: "It may be set down as a rule that, within reasonable limits, the lighter the shafting and the larger the pulleys employed to transmit the power of prime motors to machines, the greater will be the economy in transmission. Not only is the reduction of first cost, but there is a great reduction in friction, with less strain, and consequently less wear on the belts, and less expenditure of oil on the bearings."

In the location of mills ou water-courses, it has commonly been deemed necessary to place the main building directly over the spots where the wheel-pits are unavoidably located, on some steep hillside or rocky precipice, however unfavorable the site may be for grading and for costly foundations, with dark and damp basement-rooms, unsuitable for occupancy by workmen.

One of the most important advantages derivable from the new system of transmitting power economically to a distance from water-wheels as motors is practically available in selecting a good level site for the location of a manufactory.

In carrying out the system at Georgiaville, the power has been transmitted several hundred feet from a bluff, where a fall of water of 36 feet descent was available by two successive falls of 20 and 16 feet each. To accomplish this task with the massive shafts and couplings then in use (1852) appeared to be too costly, and difficult of execution with satisfactory results.

Encouraged by previous experiments for practically transmitting power hy swiftly revolving shafts and belts, the attempt was boldly made to carry the power to the manufactory instead of carrying the manufactory to the power; which was necessarily located on a hillside, where the wheel-pits were to be excavated.

The motors were a pair of water-wheels, 24 feet diameter and 18 feet long, with a fall of water 20 feet, and a second pair of water-wheels fifty yards above them, 18 feet diameter and 19 feet long, under a fall of 16 feet.

A small shaft, only three inches diameter, if revolving with 200 revolutions per minute, was deemed sufficient to transmit all the power of the upper pair of wheels; and by transmitting this power to another lower line of shafting of the same size, but with the velocity doubled to 400 revolutions per minute, it was also deemed sufficient to receive the additional power of one of the lower pair of 24 feet wheels. A driving pulley of 10 feet diameter on the upper line of shafting, transmitted to power by a belt 12 inches wide to a five feet pulley on the lower shaft, to its double speed.

This idea was more readily conceived than executed. The movement of a pulley of the dimensions of 10 feet diameter, with a surface velocity of over 6,000 feet per minute, had never been attempted practically. Doubts were suggested of the safety of using belts with this velocity in mills. But after having trusted my own body to travel with the speed of a mile a minute, over English railways, with numerous other passengers, drawn by a ponderous locomotive engine of 35 tons weight, whirled around curves, over precipitous embankments, snd uncertainly fsstened rails, it eeemed very rational to trnst a leather belt to travel with the same speed. Thns reassured, the doubter might smile at the snggestion of danger of risking a light belt to journey at the same rate. But there had been no light pulleys made suitable for this use. Those previonsly in uae, made of two iron rims, covered with wooden lags bolted thereto, were rejected as unfit.

Although the superior convenience of belts over wheel-work and shafting for transmitting power had induced many attempts to use them thirty years ago, yet the experimenters had commonly failed of successfully operating them with the low rate of speed then used. Pulleys had not been made sufficiently light and well balanced for any one to veuture to uso them with the high speed required for leather belts to operate advantageously. With the slow speed, it was necessary to strain the belts ao tightly on the pulleys, to produce sufficient adhesion, without slipping around on the smooth surfaces, that the lacings and the texture of the leather yielded; and so frequent repairs were required that the superintendente of mills nearly all abandoned the nse of them for transmitting the power from the motors to the mill shafting. They fell back on the old system of slowly revolving heavy shafting and wheels.

To carry ont the proposed system, new patters of pulleys were therefore made. The first pulley, 10 feet diameter, proved to be imperfect, and, when tested with a velocity of about 8,500 ft. per minute, the rim soon made ite exit throngh the roof of the wheel-house, and continued its course in a parabolic curve through the air several hundred yards, nntil it finally transmitted its motive power to plow a furrow in a meadow. A remodeled pulley, made to take the place of the wandering one, stood the test, and has continued faithful, without deserting ita post, to perform the dnty assigned to it ever since, during a period of sixteen years. The same belt has also remained in nse, in good order, after traveling about a quarter of a million miles every year in its daily circnits, with a velocity of 6,000 feet per minute.

As a test of the efficacy of this small three-inch shaft to transmit the power from three water-wheels, it may be stated that not a single shaft or coupling has required renewal or repairs, and they appear still capable of a much longer service. This same three inch shaft has also served to transmit all the power of the steam-engiue used in times of dronght.

The contrast hetween the two systems of high and low rates of speed of shafts and belts, for transmitting power from motors to manufactories, is instructively exhibited in these two narrated instances of the practical application of each of them, with conclusive results of the failure of the latter.

Condensing Liquid Steel.

The process of hammering large ingots or heavy masses of cast steel, when their interior part is still in a semi-fluid State, has been carried out effectnally by Krnpp, of Essen, for more than 25 years, and Mr. Bessemer patented the operation of condensing semi-fluid cast-steel by means of the hydraulic press as long ago as 1856; but the importance of the process and its merits are not so appreciated that it would seem superfluous to attract the attention of metallurgical engineers toward some practical investigations which have recently been made in that direction.

It very often happens that a seemingly commonplace inventiou merits the preference for its general usefulness before a more ingeniously conceived but unpractical idea, and the same may be said with referencec to Krupp's and Bessemer's modes of proceeding, if compared with numerous other suggestions. The Bessemer has even the great advantage over the steam hammer, that an apparatus of much less weight and cost will effect the solidification of a block of cast steel equally well also, and reduce the so-called "honey-comb" to its possible minimum.

At the Austrian Steel Works, of Neuberg, in Styria, Chevalier Stummer, has carried out an extensive series of experiments in order to ascertain the best mode for welding the interior particles of cast-steel to each other as intimately as possible, and thereby prevent the occurrence of the "honey-comb," which is an accumulation of fine pores, filled with elastic gases inclosed in the cooling metal. The principal result of these experiments has proven that it is quite possihle, hy exposing the aemi-fluid metal to a great pressure, to unite all the particles except those within a very limited spsce in the center of the steel hlock.

Thie fact is of the utmost importance in the manufacture of heavy steel ordnance, which ia intended to bear the strain of very great charges, as in that case it is just the *central* part of the barrel which is bored out, while the perfectly sound part of it is left to form the wall of the gun. Thus, a pressure of from 6 to 9 tona on the square inch will be sufficient to compress a red-hot steel ingot before its solidification, and give it an even structure throughout the whole mass, while the impact, even of a very heavy steam hammer, like Krupp's 50-ton hammer, is principally spent on the *outer part* of the block, the result being the absorption of the power before it reaches the center; in a measure the exterior of the mass is elongated and separated or torn asunder from the the central part. Only very heavy hammers or rams will effectually overcome the *vis inertiæ* which a very heavy casting opposes to it.

OUR MINING SHAREHOLDERS' DIRECTORY

ASSESSMENTS.

Name of Co.	Location.	Secretary.	S.F.Office.	Asm't.	Levied.	Deling't.	Sale.
Adams Hill C. M. Co.	Eureka Dist.	W. W. Traylor.	419 Cal. St.	25.	Aug. 8.	Sept.12.	Oct. 2.
Alaska Con. M. Co.	Lyon Co., Nev.	G. R. Spinney.	320 Cal. St.	25.	Sept. 2.	Oct. 7.	Oct. 28.
American Flag M. Co.	Ely District.	Geo. R. Spinney.	320 Cal. St.	$2 00.	Aug. 14.	Sept. 17.	Nov. 1.
Arizona & Utah M. Co.*	Washoe.	D. H. Fish.	419 Cal. St.	$1 00.	Sept. 11.	Oct. 7.	Oct. 7.
Atlantic & Pacific Con. M. Co.	El Dorado Co.	A. Neel.	419 Cal. St.	20.	Sept. 13.	Oct. 15.	Nov. 2.
AUBURN G. M. CO.	Placer Co., Cal.	Geo. W. Dixon.	Cr. Mont. & Cal.	25.	Aug. 6.	Oct. 14.	Nov. 6.
Beach & Paxton.	Storey Co., Nev.	Ed. Landers.	507 Mont'g'y St.	50.	Aug. 19.	Sept. 20.	Oct. 23*
BECKWITH M. CO.	Ely District.	Wm. H. Watson.	302 Mont'g'y St.	20.	Sept. 17.	Oct. 24.	Nov. 10.
Bowery Cons. M. & M. Co.	Ely Dist.	C. E. Elliott.	419 Cal. St.	$1.	Aug. 26.	Oct. 1.	Oct. 22.
Calaveras G. M. C.	Calaveras Co.	T. B. Wingard.	318 Cal. St.	50.	Sept. 11.	Oct. 16.	Nov. 6.
Caledonia S. M. Co.	Storey Co., Nev.	R. Wegener.	414 Cal. St.	$2 00.	Sept. 9.	Oct. 14.	Nov. 2.
Cederburg 1st N. Ex. Co.†	California.	J. N. Webster.	306 Montg'ry St.	10.	Sept. 16.	Oct. 24.	Nov. 15.
Chapman M. and M. Co.	Butte Co., Cal.	F. Swift.	415 Mont. St.	50.	Sept. 6.	Oct. 11.	Oct. 24.
Cherokee Flat Blue G. Co.	Ely District.	H. Picholr.	403 Wash'n St.	$1 00.	Sept. 12.	Oct. 23.	Nov. 13.
Condor M. Co.	Ely District.	H. C. Kibbe.	419 Cal. St.	$1 00.	Aug. 8.	Sept. 24.	Oct. 16.
Con. Anrini M. Co.	California.	H. Yeaman.	411 Cal. St.	$5 00.	Sept. 4.	Oct. 8.	Oct. 28.
Cook & Geyer M. Co.	Storey Co. Nev.	C. H. Fish.	419 Cal. St.	50.	Aug. 19.	Sept 28.	Oct. 15*
COTTON W'D CR'K M. CO.	California.	Jos. L. King.	411 Cal. St.	7.	Aug 29.	Oct. 2.	Oct. 23.
Daney M. Co.	Lyon Co., Nev.	Geo. R. Spinney.	320 Cal. St.	$1 00.	Sept. 16.	Oct. 18.	Nov. 7.
Deseret Con. M. Co.	Utah T.	J. L. King.	411 Cal. St.	20.	Sept. 6.	Oct. 12.	Oct. 29.
Empire M. Co.	Grass Valley.	S. S. Pinkham.	401 Cal. St.	$5 00.	Aug. 5.	Sept 6.	Sept. 30.
Empire M. Co.	T. T.	C. F Balcom.	426 Mont'gry St.	50.	Aug. 26.	Oct. 2.	Oct. 22.
Fallis S. M. Co.	Ely District.	A. Treadwell.	Merchants' Ex.	25.	Aug. 20.	Sept. 10.	Oct. 15.
Francis M. Co.	Mariposa Co.	T. F. Cronise.	409 Cal. St.	75.	Sept. 4.	Oct. 7.	Oct. 25.
Globe M. Co.	Gold Hill.	W. E. Dean.	419 Cal. St.	$1 00.	Sept. 12.	Oct. 18.	Nov. 8.
Golden Chariot M. Co.	Idaho.	L. Kaplan.	Merchants' Ex.	$1 00.	Aug. 8.	Sept. 12.	Oct. 2.
Gould & Curry S. M. Co.	Washoe.	A. K. Durbrow.	Merchants' Ex.	$15	Aug. 9.	Sept. 11.	Sept. 30.
Greenhorn G. M. Co.	Grass Valley.	J. F Lightner.	438 Cal. St.	$1 50	Aug. 22.	Sept. 26.	Oct. 16.
Hale & Norcross S. M. Co.	Washoe.	J. F. Lightner.	438 Cal. St.	$5 00.	Aug. 20.	Oct. 4.	Oct. 25.
Huhn & Hunt M. Co.	Ely District.	L. Kaplan.	Merchants' Ex.	$1 00.	Aug. 12.	Sept.18.	Oct. 10.
Ingomar S. M. Co.	Ely Dist.	C. S. Neal.	419 Cal. St.	50.	Aug 10.	Sept. 10.	Oct. 8.
Ivanhoe S. M. Co.	Ely Dist.	Daniel Buck.	331 Mont. St.	50.	Aug. 26.	Oct. 1.	Oct. 21.
Kinston M. Co.	Ely District.	L. Kaplan.	Merchants' Ex.	50.	Aug. 14.	Sept. 17.	Oct. 21.
Lemon M. & M. Co.	Eureka Dist.	I. T. Milliklin.	608 Merchants'	$1 50.	Sept. 14.	Oct. 18.	Nov. 9.
LOUISE M. CO.	Lincoln Co., Nev.	Wm. H. Watson.	302 Montg'ry St.	50.	Sept. 2.	Oct. 4.	Oct. 21.
Lyons & Wheeler M. Co.	Arizona.	T. W. Colburn.	409 Cal. St.	10.	July 24.	Sept. 9.	Sept. 30*
MARCELINA S. M. CO.	Eureka Dist.	Chas. E. Elliot.	419 Cal. St.	30.	Sept. 4.	Oct. 7.	Nov. 2.
Minnesota G. & S. M. Co.	Idaho.	Wm. Willis.	419 Cal. St.	50.	Aug. 20.	Sept. 23.	Oct. 14.
Monitor Belmont M. Co.	Nye Co., Nev.	B. B. Minor.	411½ Cal. St.	$1 00.	Aug. 6.	Sept. 10.	Sept. 30.*
MINA RICA M. CO.	Placer Co.	Geo. R. Spinney.	320 Cal. St.	20.	Aug. 21.	Sept. 23.	Oct. 14.
National M. Co.	Nye Co., Nev.	B, B. Minor.	411½ Cal. St.	50.	July 18.	Sept. 10.	Sept. 30
Nevada L. and M. Co.	Elko Co., Nev.	Wm. H. Watson.	302 Montgomery.	8.	Sept. 24.	Oct. 30.	Nov. 23.
Newark S. M. Co.	Ely District.	D. T. Bagley.	401 Cal. St.	75.	Sept. 5.	Oct. 7.	Oct. 21.
Newton Booth Con. M. Co.	Ely Dist.	R. Scott.	314 Cal. St.	25.	Aug. 22.	Sept. 28.	Oct. 19.
North Ore Pimo.	Idaho.	C. F. Balcom.	426 Mont'g'y St.	50.	Sept. 24.	Nov. 2.	Nov. 23.*
OHIO CONS. G. M. CO.	Calaveras Co.	W. A. Knapp.	432 Montg'ry St.	10.	Aug. 9.	Sept. 16.	Oct. 8.
D. H. Treasure M. Co.	White Pine.	D. A. Jennings.	401 Cal. St.	$1 50.	Sept. 2.	Oct. 7.	Oct. 31.
Pacific Borax Co.	Esmeralda Co.	E. Leuba.	507 Mont'g'y St.	20.	Aug. 14.	Sept. 19.	Oct. 11.
Page & Panaca S.M. Co.	Ely Dist.	L. Kaplan.	Merchants' Ex.	$5 00.	Aug. 9.	Sept. 9.	Oct. 5.
Pennsylvania	White Pine.	Daniel Buck.	331 Mont'ry.	$1 20.	Sept. 16.	Oct. 22	Nov. 8.
Placer G. M. Co.	Placer Co., Cal.	G. W. R. King.	411 Cal. St.	15.	Sept. 17.	Oct. 24.	Nov. 16.
POCAHONTAS G. M. Co.	El Dorado Co.	D. A. Jennings.	401 Cal. St.	50.	Aug. 26.	Sept. 30.	Oct. 21.
Pride of Mountain M. Co.	Winnemucca.	T. W. Colburn.	409 Cal. St.	75.	Aug. 22.	Oct. 2.	Oct. 24.
QUAIL HILL M. & W. Co.	Calaveras Co.	T. F. Oronise.	331 Mont'g'y St.	$5 00.	Aug. 24.	Sept. 24.	Oct. 16.*
Red Cloud S. M. Co.	Ely District.	E. F. Clark.	419 Cal. St.	25.	Aug. 10.	Sept. 13.	Oct. 4.
Rising Star M. C o	Idaho.	Wm. Willis.	401 Cal. St.	$1 00.	Sept. 10.	Oct. 15.	Nov. 2.
Savage M. Co.	Washoe.	E. B. Holmes.	Kearsarge Dist.	$10 00.	Aug. 26.	Oct. 8.	Nov. 8.*
SILVER SPROUT M. Co.	Kearsarge Dist.	T. B. Wingard.	318 Cal. St.	50.	Sept 21.	Oct. 26.	Nov. 25.*
SILVER WAVE M. CO.	White Pine.	J. W. Clark.	418 Cal. St.	$1 00.	Sept. 2.	Oct. 5.	Oct. 30.
Silver West Con. M. Co.	Eureka District.	F. R. Bunker.	Montg'ry Block.	50.	Sept. 6.	Sept. 12.	Nov. 4.
South Chariot M. Co.	Idaho.	J. L. King.	411 Cal. St.	50.	Sept. 16.	Oct. 24.	Nov. 16.
Stickle M. Co.	Calaveras Co.	T. B. Wingard.	318 Cal. St.	$1 00.	Sept. 20.	Oct. 11.	Nov. 21.
Succor M. & M. Co.	Washoe.	W. H. Watson.	302 Montg'ry St.	$1 00.	Aug. 26.	Sept. 24.	Oct. 15.
Talulah M. Co.	Humboldt, Nev.	Geo. A. Hill.	18 Montg'ry St.	$3 00.	Aug. 9.	Sept. 12.	Oct. 7.
Tecumseh G. S. & M. Co.	Calaveras Co.	F. J. Hermann.	634 Wash'n St.	15.	Sept. 3.	Oct. 7.	Oct. 26*
TELLURIUM G. & S. M. CO.	Amador Co., Cal.	Wm. H. Soery.	Cr. Clay & Kearny.	$1 00.	Aug. 2.	Oct. 1.	Oct. 19.
Tehama Cons.	Shasta Co.	W. W. Stetson.	414 Cal. St.	$2 00.	Aug. 7.	Sept. 10.	Sept. 30.
Union Cons. S. M. Co.	Virginia, Nev.	R. M. Gunn.	Merchants' Ex.	50.	Aug. 14.	Sept. 18.	Oct. 12*
VICTORIA & IMP. M. CO.	Utah T.	Wm. H. Watson.	302 Montg'ry St.	10.	Sept. 19.	Oct. 19.	Nov. 11.
Washington & Creole M. Co.	Ely District.	F. D. Cleary.	Merchants' Ex.	50.	Sept. 17.	Oct. 21.	Nov. 11.
Ynba Gravel M. Co.	Nevada Co., Cal.	J. S. Gridon.	108 Battery St.	25.			

MEETINGS TO BE HELD.

Name of Co.	Location.	Secretary.	Office in S. F.	An'l or Sp'l.	Date.
Baltimore American.	Washoe.	J. L. King.	411 Cal St.	Annual.	Oct.7.
Baltimore Cons. M. Co.		D. S. Bayley.	401 Cal. St.	Annual.	Oct. 3.
Cook & Geyer.	Storey Co., Nev.	C. H. Fish.	419 Cal. St.	Annual.	Oct. 14.
Emma Hill Cons. M. Co.	Utah.	L. C. Fowler.	302 Montg'ry st.	Annual.	Oct. 7.
Eureka M. Co.		H. O. Howard.	523 Montg'ry St.	Special.	Oct. 7.
Exchequer M. Co.	Washoe.	D. T. Bagley.	401 Cal. St.	Annual.	Oct. 21.
Esta Buena Cons. M. Co.		C. D. Montanye.	533 Kearny St.	Annual.	Sept. 30.
Floral Springs W. Co.	Pioche District.	E. McFaddin.	Express Bldg.	Annual.	Oct. 2.
Golden Chariot G. M. Co.	Idaho.	S. W. Collins.	306 Market St.	Annual.	Sept. 28.*
Grace M. Co.		W. H. Knight.	331 Montg'ry St.	Annual.	Oct. 2.
Indus G. and S. M. Co.		John Fowler.	Merchants' Ex.	Andual.	Oct. 19.
Segregated Belcher M. Co.	Washoe.	F. F. Stone.	Merchants' Ex.	Annual.	Oct. 1.
Silver West Cons.	Eureka Dist., Nev.	F. R. Bunker.	Montg'ry Block.	Annual.	Oct. 2.

LATEST DIVIDENDS—Within Three Months.

Name of Co.	Location.	Secretary.	Office in S. F.	Amount.	Payable.
Belcher M. Co.	Washoe.	B. C. Kibbe.	419 California St.	$3.00	Sept. 10.
Black Diamond Coal Co.	California.			½ per cent,	June 28.
Crown Point G. & S. M. Co.	Washoe.	C. E. Elliot.	419 California St.	$2 00.	July 5.
Eastport Coos Bay Coal.	Oregon.	I. L. Pool.	Merchants' Ex.	$5 00.	Sept. 14.
Keystone Quartz M. Co.	California.	L. Vesaria.		50.	July 10.
Mahogany G. & S. M. Co.	Idaho.	T. J. Owens.	402 Mont'gry St.	$1 50.	Aug. 7.
Meadow Valley M. Co.	Ely Dist., Nev.	T. W. Collumn.	419 California St.	$1 00.	June 20.
Raymond & Ely M. Co.	Ely Dist., Nev.	A. J. Moulder.	419 California St.	$7 00.	Sept. 10.
Pioche S. M. Co.	Ely Dist., Nev.	O. E. Illiot.	419 California St.	$31 00.	Aug. 10.

—* Advertised in this journal.

Stock Sales for Week ending Sept. 26—S. F. Stock & Ex. Board.

NAMES OF COMPANIES.	Post.	Shs. in ft.	FRIDAY. Shs	Prices.	SATURDAY. Shs	Prices.	MONDAY. Shs	Prices.	TUESDAY. Shs	Prices.	WEDNESD'Y Shs	Prices.	THURSDAY. Shs	Prices.	Tot'l Sh's Sold.	Deling Advnc.
Adams Hill	*	300	20	162	2¼					195	2½@ 2¼	100	2	50	2	507	¼
Alpha	*	6400	8			10	40			50	38 @38½			80	36 @37	170	
Alps	§	800	37½	50	4½			120	4 @ 4¼	220	4	190	4¼	100	4½	680	⅛
American Flag	§	2600	11¾			200	12	10	16¾	75	16	20	16¾	95	14½@15	400	
Arizona & Utah	*	1800	19½	50	1 80	100	1 80	100	1 80	100	1¾			150	1½@ 1¾	500	
Belcher		1010	10	185	100 @102	465	100 @101	285	97 @100	595	90 @95	1410	90 @92½	217	90 @92	3357	10
Baltimore	*	1200	20	80	2½	89	2⅝			170	2½	250	2⅜@ 2⅝			589	
Baltimore Am.	*	1200	20	35	2⅝									200	2⅜@ 2½	235	
Bowery	§	1000	30	75	1⅜	80	1⅜@ 1½	100	1⅜	50	1½	100	1½	70	1⅜@ 1½	475	⅛
Bacon	*			20	42½											20	
Buckeye								125	2¾	200	2¾			20	2¾	345	
Best & Belcher		224	100	30	6¾@ 7											30	
Bellevue	*	8000	2½									20	2½			20	
Belmont	§			200	7	775	7 @ 7¾	800	6¾@ 7	65	6¾@ 7	980	6 @ 6½	75	6¼	2895	
Chollar	§	2800	10	175	61½@65	60	65 @66½	160	63½@65	220	62 @62½	217	62 @63	340	60 @62	1172	½
Caledonia	§	5000	4	785	34⅜@36	1110	37 @39	270	36¾@37½	435	33½@36	355	33½@34	165	33½@34	3110	2
Cons. Virginia	§	1160	20⅜	700	46 @50	245	43 @47	480	46 @47	815	46 @49	420	48 @45	980	58 @61	3640	11
Confidence	*	130	192	100	83½@ 87½					55	83¾	130	77½@ 78	263	73 @ 77½	348	1¾
Crown Point	*	600	166⅔	156	125 @130	230	122 @126	150	120 @121	405	115 @119	20	115	263	113 @118	1226	12
Central	*	70	357	20	2½					215	7½@ 9	15	9	10	10	260	½
Calaveras		3200	6¾														
Condor	§			200	2			125	1¾@ 1⅞	50	1⅝	50	1¾			425	
Chapman	§		12	50	1½			20	1½	700	1½@ 1¾	200	1½	1063	1½	2020	
Chief of the Hill		1000	30	1255	10¼@11	1610	12 @13⅜	1605	10½@11	630	10½@11	990	10¼@11	370	10 @10¼	6460	¾
Cederburg	*	1200	20	60	7 @ 7⅜	120	6 @ 7¾	120	6¾@ 7	141	7					441	
Daney	*	5000	12	135	1 @ 1⅜					50	1					185	
Eureka Cons	*	1000	30	150	20¾@21¼	310	20½@21¼	880	20¼@20¾	245	20 @20¼	915	19½@20½	250	19½@21	2650	¾
Eureka	*	1650	12	70	10		20 16		20 16					80	15 @15½	190	¼
Exchequer	*	400	20					30	15½	45	15					75	
Eclipse	*	70	357	35	11½@11⅝	20	10½									55	
Empire Mill	*	75	16	110	8½@ 8¾	90	8¼@ 8¾	150	8¾	630	7½@ 8	100	7¾	510	6¾@ 6¾	1590	2
Exce'sior	*	4500	2⅝														
Gould & Curry	*	1200	4	93	195 @205	68	190 @192	55	181 @192	50	170 @180	87	172 @180	120	180 @189	463	16
Golden Chariot	*	750	10½			10	10	40	10	30	9¾@10	55	9¾@10	50	10½	185	
Globe	*	1600	12½	20	1			50	1			50	¾			70	
Gen. Quill Q																	
Hale & Norcross	*	400	4		40 76	80	@77½	10	80	255	78 @80		55 76	@79	10 78	635	2
Huhn & Hunt	§	3600	8½	480	5 @ 5⅜	320	5 @ 5⅝	330	5	610	5 @ 5⅜	200	5½@ 5½			1940	
Hermes	§		17⅜	120	11½@13							200	11½@12			320	
Ida Elmore	*	1300				390	13 @14			100	12			50	11	540	
Imperial	§	184	543⅜	295	8¾@ 8⅞	280	8¾@ 9	360	8¾@ 9	100	8 @ 8¾	310	7¾@ 8¼	450	7¾@ 7⅞	2395	1
Ingomar	§	1000	40	460	2¼	800	2 @ 2¼	275	2	270	1⅞@ 2	50	1⅞			1850	
Independent	§	1800	14						¾								
Ivanhoe	§			50	2½	100	2¼									150	
Julia	*	3000	7	380	5½@ 5¾	500	5½@ 6	42	5¾@ 6	130	5¾@ 5¾	170	5¾	200	5¼	1800	½
Justice	*	95	21			300	10 @11	70	10	85	9¾@10	60	9¾@10	350	8 @ 9½	865	
Kentuck	*	1800	14											10	230	10	
Knickerbucker	*	1200	20	50	6¼	110	6 @ 6¾	20	6¼	240	6¾@ 6	60	6¾@ 5¾	100	5¾	1080	
Mammoth	§	1800	20											100	35c	100	
Meadow Valley	*		12½	815	26½@27½	635	27 @27½	1810	24 @25	2630	21½@21½	1195	24 @25	2525	22¾@24	8810	6½
Mahogany	§	720	13⅞	170	9 @10			50	9							220	
Mocking Bird						50	1⅜									50	
McMahon																	
Newark	§		1025	6¼@ 6¾	630	5⅞@ 6¼	335	5½@ 5¾	650	5 @ 5½	530	4¾@ 5	190	5	3360	1¾
Dphir	*	1400	12	115	70¼@73	535	65 @67	110	65½@70	265	59 @62	315	62 @68	140	67 @68	1481	4
O. H. Treasure	§	800	126⅔	320	6 @ 6¾	575	6 @ 6⅝	60	5¾@ 6	130	5¼@ 5½	100	5 @ 5¾	600	5 @ 5½	1785	⅞
Overman	§	1200	10⅝	30	64 @64½	175	64 @66	50	62½@63	220	60 @62			20	60 @61	595	3½
Occidental	*	800	12½														
Pioche	§	1000	20	290	23 @23½	510	21 @22	475	20 @20¾	955	19 @20	570	19 @20	480	17¾@19	2880	4¾
Page & Panaca	§	2400	16⅔	1585	3½@ 3¾	1110	2⅞@ 3⅛	550	2¾@ 3	100	2½@ 2¾	300	2½	300	2½@ 2⅝	3955	1¼
Pea Vine	§	1000	30	720	95c	550	95c	50	1	100	75c					1370	
Phœnix	*	4000	7¼	875	4¼@ 4⅜	275	4¼@ 4⅜	100	4¼@ 4½	510	4 @ 4¼	1150	3⅞@ 4	40	4	2970	⅜
Pioche West				100	*	125	1¾@ 4½	235	*	1185	4	330	4	25	4	2000	
Raymond & Ely	§	800	20	150	168 @170	110	168 @169	70	168 @172	110	168 @169	75	165 @164	115	165 @110	731	7
Savage	*	1000	30	120	114 @117	145	112 @116	210	114 @117	70	105 @106	70	104 @106	115	105 @110	731	7
Seg. Belcher	*	160	40	60	90 @91	90	85 @90	55	76 @79	45	68 @75					250	
Sierra Nevada	*	2000	7½	75	16 @16⅜	20	16	85	15¾@16	350	15 @15½	220	15½@16¼	385	16 @16¾	1135	½
Succor	*	7600	3	50	4¼	175	4							25	2¾	375	1¼
Silver Hill				80	7¼	110	7¾@ 7¾	60	7½			70	7¾@ 7½	260	7¾@ 7¾	580	¾
St. Patrick	§	1800	12¾														
South Chariot	§	660	30⅝														
Seg. Caledonia	*																
Trench			20 250														
Wash. & Creole	§	200	180	480	37½@ 4½	540	4¾@ 4⅝	370	4½@ 4¾			250	4¾@ 4¾	540	4¾@ 4¼	2280	
Woodville		1400	20	350	2¾@ 3¼	100	3¼	250	3¼			2220	3 @ 3¼	200	3¼@ 3¼	1120	
War Eagle										250	6¾@ 6¾	200	2¾@ 7			450	
Utah				10	3	20	3									30	
Yellow Jacket	*	1200	25	10	106	160	108 @110	65	108 @110	40	100 @103	325	87 @100	495	87 @90	1094	16
Yule Gravel		400	25														

NOTES.—†—California. *—Washoe. ‡White Pine. §—Ely District. ¶Eureka District. ‖—Idaho. ¡—Nearly. ? —Over.

S. F. Stock and Exchange Board.

THURSDAY, Sept. 26th, 1872.

The Sales at the Board for the week ending on the 18th inst. amounted to $2,344,000. Meadow Valley, Chief of the Hill and Coneolidated Virginia were the chief centers of attraction. Dividende from mining companies thie month were less than they have been for the past five months, while the assements have heen unusually numerous. Assessments delinquent this month amount to $337,900 and the dividends to $522,000, leaving a difference in favor of stockholders of $184,100. This is quite a falling off from May when the assesements were $351,750 and the dividends $1,067,-000 leaving in favor of stockholders $715,250. This favorable halance has decreased gradually since May; in June it was $661,150; in July $573,300; in August $322,140; and this month only $184,100. The total amount of assessments since the first of May is $1,424,060, and the total paid in dividends ie $3,880,000 showing a net profit to stockholders of $2,455,-940. The Belcher paid this month $312,000 and the Raymond & Ely paid $210,000. In the total dividende for past three monthe of $3,-880,000 Belcher dishursed, $1,560,000; Crown Point, $1,080,000; Saymond & Ely, $1,050,000; Meadow Valley, $120,000; Pioche, $40,000; Mahogany, $15,000; Keystone Quartz, $10,000; and Yule Gravel $5,000.

The following assessmeuts have been levied this month: Alaska Cons. Co., Nevada, 25 cents; American, Flag M. Co., Ely District, $2; Atlantic & Pacific Cons. Co., El Dorado Co., 20 cents; Auburn G. M. Co., Placer Co., 25 cents; Bowery Cons. M. Co., Ely District, $1; Caledonia S. M. Co., Storey Co., Nev., $2; Chapmau M. and M. Co., Ely District, 50 cents; Cherokee Flat Blue Gravel, Butte Co., Cal., $1; Condor M. Co., Ely District, $1; Cook & Geyer M. Co., Washoe, 50 cente; Deseret Cons. M. Co., Utah, 20 cents; Empire M. Co., Grase Valley, $5; Globe M. Co., Washoe, $1; Golden Chariot M. Co., Idaho, $10; Herculee M. Co., Nye Co., Nevada, 20 cents; Hermiguera M. Co., Lower California, $3; Louise M. Co., Lincoln Co., Nev.,50 cents; Lyons & Wheeler M. Co., Arizona, 10 cents; Minnesota M. Co., Idaho, 50 cente; Newton Booth Cone. M. Co., Ely District, 25 cents; Pacific Borax Co., Esmeralda Co., Nev., 20 cents; Placer G. M. Co., Cal., 15 cents; Pocahontas M. Co., El Dorado Co., Cal., 50 cents; Savage M. Co., Washoe, $10; South Chariot M. Co., Idaho, 50 ceute; Stickle M. Co., Calaveras Co., Cal., $1; Tellurium M. Co., Amador Co., Cal., $1; Yuha Gravel M. Co., Nevada Co., Cal., 25 cents; Newark S. M. Co., Ely District, 75 cents; Succor M. & M. Co., Washoe, $1; Washington & Creole M. Co., Ely District, 50 cents; Cederburg First Northerly Ex. Co., Cal., 10 cents; Mahogany G. & S. M. Co., Idaho, $2; Ohio Cons. M. Co., Calaveras Co., Cal., 10 cents; and Silver Wave M. Co., White Pine, $1.

Stocks generally have heen pretty dull during the week and sales have heen light. On Friday they were dull aud weak, tho "bear" element prevailing. Chollar fell $1; Cons. Virginia, $6; Gould & Curry, $2; Hale & Norcross, $3; Ophir, $3; and Yellow Jacket, $2.50.

On Saturday stocks were in fair demand but at irregular prices. From highestrates on Friday Caledonia and Yellow Jacket each rose to $2; Chollar-Potosi, Crown Point, Hale & Norcroes and Overman, each $1; Gould & Curry declined $5.50; Ophir, $4; Raymond & Ely, $3; Segregated Bel., $2; Pioche, $1.50, and Savage, $1.

Monday the market was dull, and prices were generally lower; orders were few, and the bear preesure was again evident. Tuesday the market was still weak at decliuing prices. At the afternoou session the husiness was very light. Belcher fell, $14.50; Crown Point, $6; Chollar, $4; Caledonia, $3; Gould & Curry, $6; Hale & Norcross, $2; Imperial, 50 ceuts; Ophir, $4; Overman, $2; Savage 8; Jacket, $8; Meadow Valley, $1; Pioche, $1.50; Raymond & Ely, $1.

Wednesday the market contiruod very dull, with a downward tendency, and very few eales. Iu the afternoon Board, however, some slight improvement manifested itself, and the Ely stocks were all stronger. Cons. Virginia advaced $8; Chollar and Hale & Norcross, each $1; Gould & Curry, $4; Ophir, $2; Savage declined $3; and Yellow Jacket, $10.

To-day, stocks were moderately active in the morning, and no afternoon session was held on account of the anniversary of the organization of the Board. Consolidated Virginia and Gould & Curry were the features of the Board, hoth advancing $11; Ophir advanced $3; Hale & Norcross and Savage, each $2. The sale of Kentuck was $20 lower than the last previous sale on the 17th inst. By referring to our stock tables our readers will see the general decline from pricee of last week, which in most instances is quite marked.

Below is news from the prominent mines later than that to be found in our Mining Summary.

BELCHER.—All the outside improvemente are rapidly approaching completion. They do not expect to hoist any ore through the shaft for three weeks. The ore-breaste in the stopes on the 1,000 and 1,100 foot levels all look well.

RAYMOND & ELY.—On the 20th $30,232 was shipped; on the 23d $33,222; and on the 26th inst. $33,453; previous shipments amounted to $235,165 making a total for 24 days of $268,618 or $11,192 per day.

CHOLLAR POTOSI.—During week ending Sept. 21st, 2,026 tons of ore were extracted and sent to mills of an average assay of $38.05. Bullion shipped $14,658.

HALE & NORCROSS.—During week ending Sept. 21st, 477 tons were extracted; 648 tons sent to mill, and 675 tons remain on dump.

SAVAGE.—For week ending Sept. 21st 1,422 tons were extracted averaging hy aesay $25.14; delivered at mills 1,362 tons; on hand at mine 465 tons.

From the CEDERBERG mine $6,000 was received on the 23d, proceeds of eleven days' run of the new mill. The average assay from the ore of the CHIEF OF THE HILL is $239. EMPIRE-IDAHO sent on the 20th one har valued at $4,-511. The ore in the McMahon mine is improving The average assay of ore in the first level of the PIOCHE mine is $150, from eecond level $185, from drift in eecond level $207; WAR EAGLE shipped on the 18th $3,030.

MINING SUMMARY.

THE following is mostly condensed from journals pnblished in the interior, in proximity to the mines mentioned.

California.

ALPINE COUNTY.

EXCHEQUER.—Alpine *Chronicle*, Sept. 14: The quartz mill of the Exchequer Co. will be ready for crushing ore in 60 days.

M. & N. W.—Monitor *Miner*, Sept. 14: The average car samples, 4 in numher, taken from the shaft Thursday assayed $192.42. Sample from Drift No. 6, south face, went $54.60. The shaft will be down 50 ft. to-day, and it is intended to eink 10 ft. more for a "sump," and then drift on the vein south.

AMADOR COUNTY.

MINING.—Jackson *Dispatch*. Sept. 21: Work has been resumed, during the past week, on the Pioneer, and Old Boh mines, and, nearly every other mine on this quartz helt from the Kennedy mill to Butte City, except the Coney and one or two othere.

FLATTERING.—Rock ehowing free gold has been struck at the new ehaft started on Capt. Little's ranch near this place, and the "gouge," and other indications are equally flattering.

SUTTER CREEK.—Cor. same: The Amador mill will he started up in a few daye. The North Amador main shaft is down about 400 ft. drifting north and south from the ehaft; they will be crushing soon.

The Lincoln is doing hetter than eyer. They have finished erecting new hoisting worke at the new shaft.

SUMMIT.—Jackson *Ledger*, Sept. 21: Work is progreesing finely, and the main shaft hae been put down 360 ft.

CALAVERAS.

GWIN.—Calaveras *Chronicle*, Sept. 21: Ten additional stamps have heen put in motion making 26 in all. The ceutral shaft has reached 200 ft. and a level hae heen commenced to connect with the lower mine. The south ehaft is down 550 ft., dieclosing a magnificent ledge, fully 6 ft. thick, composed of a better quality of quartz than

The Jupiter has its hoisting works in good order and is getting out a fine quality of rock.

NAPA COUNTY.

Quicksilver.—Vallejo *Chronicle*, Sept 21: In Summit dist. 4 mines are being worked and all are doing well.

NEVADA COUNTY.

Eureka.—Grass Valley *Union*, Sept. 19: A crushing of the last 2 weeks, with 15 stamps, resulted yesterday in a bar of gold, valued at $11,000.

Empire Strike.—The rock from the 700-ft. level continues to prove singularly rich. Over $10,000 in specimens alone have been taken out, and the ledge as it is being stripped shows equally rich.

Green Mountain.—Some week or so since 52 loads of rock were crushed and proved rich in gold. The sulphurets amounted to 3,600 lbs. which yielded $377, or $209.44 to the ton.

Miners' Flat.—Nevada *Transcript*, Sept. 19: The Illinois made a big clean up on Saturday. The Eagle will make a clean up next week. They are preparing to put in a big blast for loosening the bank for another run.

Eureka.—The Erie 3d level is complete. In sinking an air shaft 200 ft. north of main shaft a splendid ledge was discovered, the principal part of the rock being lined with pure gold.

They have struck the ledge at the Ancho. It is about 6 ft. wide.

Big Mining.—The hydraulic claims at Moore's and Woolsey's Flats are yielding splendidly.

The Boston claims, at Woolsey's, have yielded $30,000 this season, and it is expected $7,000 will be added by the clean up this week.

The last run of the Eagle Co. gave $8,000.

The Illinois at Moore's paid $8.000 for their run which ended last week.

The Blue Banks Co., at Woolsey's, is paying well, and the Oriental Co. at the same place, in their last run took out $6,000 at an expense of $2,000.

SAN DIEGO COUNTY.

Bullion.—San Diego *Union*, Sept. 12: Bullion amounting to $2,770 was shipped on Sunday to S. F. from the San Diego mines.

Stonewall.—The mill will start up this week and the 10 stamps will be kept at work until a large lot of ore, already taken out is crushed. The prop. intend opening a new lead in about a month.

Discoveries.—From the Julian mines we learn that several new leads have been discovered within the past few days. One, the Tom Scott, in the San Felipe cañon is prospecting finely. The Good Hope No. 2, discovered and abandoned is now regarded as a fine claim and will be developed.

SIERRA COUNTY.

New Mill.—Downieville *Messenger*, Sept. 14: The Buttes Co. are erecting a new mill.

SISKIYOU COUNTY.

Happy Camp and Bunker Hill.—Yreka *Union*, Sept. 14: The Northern Co., Bunker Hill, have commenced piping. They have about 200 acres of gravel, prospecting well from top to bedrock, distant from 40 to 100 ft. The gold is coarse and sells for $18 per oz. The Richardson claim is paying well, as also that of Mr. Reese's. McCrary & Co. have got to work in their deep claim, Humbug Bar, and it pays well.

TRINITY COUNTY.

Nugget.—Weaverville *Journal*, Sept. 12: Thursday evening of last week two Italians, in West Weaver creek, found a nugget of quartz and gold weighing 16 oz. in the rough and yielding $197 after being melted.

TUOLUMNE COUNTY.

Soulsby—Sonora *Democrat*, Sept, 21: A good number of men are at work getting the tunnels ready for regular mining. The mill and machinery is being put in thorough order.

Nevada.

Lemon Mill.—Eureka *Sentinel*, Sept. 19: This mill undergoing repairs for several weeks is at last in perfect order.

ELY DIST.

Bullion.—Pioche *Record*, Sept. 15: Within the last week W., F. & Co. shipped $153,378.02 in bullion.

Chief Easterly Ex.—The Extension has reached a depth of 60 ft., with a splendid showing, the lodge coming in rich in appearance and of the same character as the Chief of the Hill. Three shifts are being worked, and it is believed rich developments will be made within 30 days.

Comet.—The shaft is down 56 ft. with very fair ore in sight.

Louise.—The work of this Co. is concentrated on the Anna Dickinson. At 85 ft. drifts are being run east and west on the ledge. The east drift has been run in about 30 ft., and shows first-class ore. The west drift is beginning to look well.

Ivanhoe.—Depth of shaft 275 ft., vertical. It is expected that in 25 ft. more the ledge will be struck. The new working shaft is down 135 ft., and within the past week fine ore has been struck.

Peavine has improved greatly within the last 2 weeks. The drift at first level carries ore the entire distance, assaying as high as $450 to the ton. The drift at the 2d level (125 ft. from the surface) begins to look well, and in a few ft. more will no doubt strike the ledge that shows in the upper drift. Over 100 tons of good ore is on the dump.

Pacific Tunnel.—This tunnel is in 985 ft. in length.

Arkansas.—The ore in the east and west drifts, at the 250-ft. level, continues the same. The Supt. is sinking the incline on the ledge, which improves in appearance daily.

Aztec.—The shaft has reached 150 ft., and the prospects are favorable.

Pioche Phenix.—The whim is in fine working order. Still sinking on the ledge, which continues to improve. The new working shaft is down 35 ft.

Marion.—The work is being done principally in the drift at the 45-ft. level, from which fine ore is being taken in large quantities. Next week the sinking of the shaft will be resumed and continued.

Pioche Champion.—This Co. has been busily engaged all the week timbering the main shaft, fencing in ground, altering shaft house, cleaning up shafts, etc. All will be ready to commence sinking to-day.

Kentucky Rifleman.—Sinking is going on rapidly, the main shaft being down about 60 ft. The ledge has widened out to 4 ft., and is improving rapidly.

Mocking Bird.—Quite an important strike was made during the past week at 113 ft. The pay streak is about one foot wide and assays $193.12 per ton.

Maogie.—Depth of shaft 160 ft. Drifting on the ledge with good ore in sight.

Washington & Creole.—The hoisting works are in position and will be covered in by Monday night.

Condor.—North drift is being rushed very rapidly and is looking well with good ore across the face.

WASHOE.

Review.—Virginia *Chronicle*, Sept. 21: Is putting up new machinery, and will be ready to start up again in a short time.

Knickerbocker.—The shaft is down 450 ft. The drift on the 400-ft. level is progressing finely.

Justice—Will start up the new machinery on the Waller's defeat shaft to-morrow. Mine looking well.

Baltimore.—The shaft is down 250 ft. They will open a new station at the 400, when the shaft is down sufficient depth.

Phil. Sheridan—Is raising the air-shaft, and expect to get through in a few days, when work will be resumed on the tunnel, shaft and incline.

Senator.—New hoisting-works up, and machinery in good running order. Engaged in taking the water out of the shaft, preparatory to resuming sinking and prospecting.

Bullion.—Prospecting on the 800-ft. level. The drift is in a mixture of quartz and porphyry, with favorable indications for finding ore.

Utah.—The shaft is 150 ft. deep, and is in good working rock; sinking is progressing rapidly.

Woodville. — The machinery for the new works is on the ground, and will be put up and ready for starting on 10th Oct. They are taking out about 10 tons per day, which assays $40 per ton.

Red Jacket.—The new shaft is down 203 ft., and work is actively progressing.

Ophir.—This Co. are making good progress with sinking. The raise is in good-looking quartz, and the west drift from first station is looking well, with good indications of ore.

Sierra Nevada.—The Co. are running their mill on quartz vein, near the surface of which there appears to be an abundance.

Kentuck—Is taking out about 35 tons of good milling ore per day from the 600-ft. level. They have made the connection for air with the Yellow Jacket, and will cross-cut for the ledge on the 1,300-ft. level.

Savage—Is not taking out much ore now; 40 men were discharged yesterday. Incline 100 ft. below the 1,500-ft. level. Cross-cutting for the ledge in 260-ft. level.

Gould & Curry.—The 1,600-ft. station is opened and drift started south, which shows some quartz. Prospecting on the 1,200 and 1,400 stations. The incline engine is in good-working order again.

Imperial—Is working six men on a shift in the incline, which is 60 ft. below the last station. On the surface they are building a new blacksmith shop. The new pump is on the ground, and they are preparing to put up a new pumping engine. The dump tunnel from the railroad is in 100 ft.

Crown Point—Is taking out about 40 tons of ore per day. East winze from 1,200 is down to the 1,300, and is in good ore. The south winze is not yet through, but shows good ore. The 1,300-ft. level has developed a good body of ore. The 1,100 and 1,200 are looking well.

Chollar—Is taking out 100 tons of good milling-ore per day from the old mine. At the shaft they have the new engines nearly set up, and the pumps ready to put down. The work is progressing rapidly. Ore shipments for the week ending Sept. 14th foot up to 1,824 tons; assay value, $32 per ton.

Belcher.—Daily yield, 250 tons; drifting northeast on the 850-ft. level has been opened. A station has been opened on the 1,100-ft. level. The main incline is down some 160 ft. The drift north from the incline is in 105 ft. The 1,000 and 1,100-ft. levels are on good ore. The improvements on surface are nearly completed. The ore-dump is finished.

Jacob Little.—The ore is improving, and shows more sulphurets. They have started a new tunnel, which will cut the ledge 400 ft. below. The assay made yesterday was $116.30 silver, and $32.80 gold. The ledge covers the full face of the drift. There is 200 tons of ore on the dump.

Buckeye.—Gold Hill *News*, Sept. 21: On the first station the ore-stope is 70 ft. in hight, the vein averaging from 4 to 8 ft. in width, of good milling ore. The main drift is 45 ft. further in, still in good ore, and 30 ft. beyond the stope a raise of 20 ft. in height has been made through the same ore body. The north drift on the second station has struck the same body of ore, proving its extent downward. The incline is down 20 ft. below the fourth station (379-ft. level), in good sinking, and it will be continued 10 ft. deeper for a sump.

Cons. Virginia.—Excavation for the foundation of the new machinery is progressing rapidly.

Yellow Jacket.—Daily yield about 20 tons. The new pump machinery is being put into working position as fast as possible.

Julia.—Water is drained from the shaft and work resumed in the drift, which is in 145 ft. The hoisting works building is fast approaching completion.

HUMBOLDT.

Bullion.—Unionville *Silver State*, Sept. 21: Amount shipped from the Arizona since our last issue, was $5,463.

Blue Ledge.—The owners of the Blue Ledge, near Golconda ranch, are selecting ore for shipment. A tunnel 150 ft. in length has been run on the ledge, from which a considerable quantity of fine milling ore has been extracted. The ledge averages 2 ft. in width, and select specimens of the ore assay from $60 to $500 per ton.

Galena.—About 100 miners are employed in the dist. at present. A shaft has been sunk on the Shiloh 135 ft. The ledge is well defined. The ore is argentiferous galena, extremely rich, wires of native silver being perceptible in many of the specimens on the dump. Drifts are being opened on the ledge from the bottom of the shaft. The White is developed by a shaft to about the same depth as the Shiloh. A drift has been run from the bottom of shaft 175 ft., rich ore being visible the entire distance. Since the consolidation of the Cos., a drift is being run for the purpose of opening the ledge between the shafts. The ore shipped up to the present time, has averaged $400 per ton. The Co. has on the dump, assorted and ready for shipment, 50 tons of superior ore, which, it is estimated, will average $600 per ton. Work is prosecuted steadily on the Battle Mountain ledge. A tunnel has been run several hundred feet on the ledge, and at present a shaft is being sunk from the tunnel. The Trenton is bonded for $80,000. The Little Giant Co. are working 6 men; at present engaged in opening a communication between the upper end lower works. The Kelseed copper mine is yielding very rich ore.

REESE RIVER.

Crown.—Reese River *Reveille*, Sept. 14: Beattie & Co. are erecting steam hoisting works without doing any more dead work. They are prepared to raise 50 tons of $200 ore per month.

Stonewall.—The E. M. & M. Co. have 8 men employed, running levels preparatory to stoping. Are taking out about 1½ tons of $100 ore per day.

Mammoth.—Esta Bueno.—The Co. are driving a third level at a depth of 210 ft. with good ore; are stoping out about 2 tons per day of $200 ore from the second level.

Ella Florence.—The owners are sinking on an incline down about 20 ft., have a vein 4¼ ft. wide, one foot of which is $250 ore.

Belmont.—Monitor Co.—Are increasing their force daily; are pushing forward their lower tunnel; in over 350 ft.; taking out some fine ore from the upper levels. Their new mill is expected to start in about six weeks.

El Dorado Co.—Are stoping out from the big ore chimney in the 340 ft. level, south of the main incline. This body of ore is over 7 ft. thick and shows already over 100 ft. in length.

Arizona.—Drifting north in the large body of chloride. Pay streak 5 ft. thick.

Belmont Co.—Have just let contracts for running new levels in the Canfield mine.

Combination Co.—The lessees are taking out splendid ore; working 20 men.

Jefferson Canon.—Some very rich horn silver ore was brought in from this dist. a few days since.

San Antonio.—J. P. Courter & Co. are shipping some 60 tons of fine ore from the Potomic and Liberty mines.

Silver Zone Dist.—Assays of rock from some of Mr. Woodruff's claim gave as follows: Delmonico, $785 44; Delmonico Ex., $430 40; Woodruff, $344 01; Prince Albert, $67 54; W. Richmond, $274 27; Young America, $251 33; Silver Top, $461 63.

WHITE PINE.

Bullion.—White Pine *News*, Sept. 14: The shipment from White Pine, during the past week, was $15,654.25.

Treasure Hill Mines.—Eberhardt & Aurora Co.'s Mines.—Considerable dead work is being done by contract, which will be prosecuted until the necessary arrangements have been made for a mill in which to work the ore.

Beecher Cons.—Considerable work is being done in the Blesdel works, where there is a large body of good ore.

Noonday.—The ore in the new shaft holds good in quality, and is being assorted preparatory to sending to mill.

East Sheybogan.—A force of men is employed in drifting from the air shaft to make a connection with the south drift.

Copper Glance.—North shaft is being pushed ahead fast in ore of good grade. Breasting out in north drift forward toward the north, to make connection with the north shaft.

Silver Wave.—Working by contract in the Boswell works. The Perkins' shaft is now down 183 ft., and drifting with fair indications of striking ore.

Sunbeam.—Working in the Moscow shaft, and have good ore with a ledge 6 ft. wide.

Outside Dists.—Schell Creek.—The mines are improving in richness. Putting up of the Tehama Co's. mill has commenced, and expect to have it in running order in about 30 days.

Robinson.—The Canton Co's. furnace is expected to start up in a few days.

Mills.—Big Smoky.—Shut down to make some necessary repairs.

Manhattan.—Running steadily on ore from the Beecher Cons. Co.'s mines.

Schell Creek.—Schell Creek *Prospect*, Sept. 14: McMahon.—During the week work was prosecuted, extracting ore of fine quality; sinking shaft which is down 20 ft.; drifting into the mountain in good looking quartz.

Jupiter.—The owners constantly at work, sinking shaft and running tunnel; the former is down 40 ft. in quartz; the latter is in between 30 and 40 ft. in ore.

Tehama.—Work is going along smoothly. There being 30 or 40 men employed extracting ore. The main tunnel is in 265 ft. and in decomposed quartz.

Ruby Hill Dist.—Birch.—Working every day; ore of fine quality is being taken out, of which there is about 300 tons on the dump.

Cow and Calf.—Not being worked. We understand the owners are about to sell the mine.

Tambien.—Working a small force of men constantly. There is a shaft down 47 ft. in quartz.

Monitor.—Shaft down 37 feet in quartz, indications of striking the ledge when sunk deeper. There are several tons of ore on the dump.

Phenix.—Working every day taking out ore of fine quality.

Granite Mt. Dist.—The Emerald is 180 ft. wide; the formation on one side is granite, and on the other limestone; it carries from 25 to 60 per cent. copper, and assays $100 in silver, several shafts have been sunk on the ledge to a depth of 30 ft. showing ore all the way. The same district has a large amount of carbonate lead ore, assaying from $30 to $300 in silver. Adjoining the Emerald are the Emma and Horace Greeley, which are equally as rich.

Arizona.

Mines and Mining.—Prescott *Miner*, Sept. 7: Mohave Co.—Hardy's Mill is running steadily. The last clean up was a big one. The furnaces will soon be in full blast.

Mines and sawmill in Wellepei Mountains are being worked.

Rich strikes have recently been made in the old San Francisco dist. in Wellepai and further south towards Yuma Co.

Yuma Co.—Work will soon be started on the gold, silver and copper mines near the Gila and Coloredo Rivers.

Placer miners have lately taken out a great deal of gold.

Pima Co.—The diamond excitement has broken out among the population of Pime, and they talk of nothing but stones, carats, etc.

Maricopa Co.—The mines near Forence are attracting attention, and so are the diamond mines.

Yavapai Co.—Placer miners are busy working the gravel of several creeks and quartz miners are busy delving in the mines of Wickenburg, Weaver, Walnut Grove, Bradshaw and other Districts.

Jackson, Shoup & Co., are running the Del Pasco mill; Noyes & Curtis will soon move their quartz mill from the Hassayampa to Groom Creek, to work ores from the "Heathen Chinee," Benjamin, Canadian, and other mines.

Colorado.

Mt. Lincoln.—Denver *Tribune*, Sept. 18: About 500 tons of ore have already been taken out. The Morse is the principal mine worked.

There are about 400 men employed in the district. Among the important new discoveries are the Stranger, Deer and Pawnee.

Russell.—Central *Herald*, Sept. 11: Much damage was done to the works on the various gulch claims on Russell and North Clear Creeks. On the latter stream 9 different firms were engaged in gulch mining within a space of 2 miles below Black Hawk, employing altogether, with the proprietors, something like 55 men, nearly one-half of the number being at work on the property of A. Cameron. Their flumes and works were almost entirely carried away, and in some instances their grounds buried by immense masses of sand, rocks, etc.

Montana.

Coal.—Deer Lodge *Independent*, Sept. 14: We were shown this week a specimen of coal from a ledge discovered last week, a few miles below the mouth of Gold Creek. The coal is of superior quality and is pronounced by competent judges to be equal to the best found in Pennsylvania.

Lyon's mill at Phillipsburg is being put in repair and will be in running order in a couple of weeks.

Moose Creek.—Loping & Marceen have an incline down 100 ft. on the Canada ledge, which is three feet in width on an average. The rock pays from $30 to $35 per ton. They run 3 arastras and have plenty of ore in sight to keep them running until winter. Dickey & Perks are working the Dixie ledge in a vigorous manner. They are taking out a large quantity of first-class ore and are crushing about 3 tons per day.

The Industrial Interests of the Golden City.

Furniture Manufacture.

The aetonishing development of this busineee within the last two or three years, nay within the laet year, when it hae doubled in value, ie one of the hest evidences tbat could be afforded of our constantly accnmulating weelth and proeperity. For a long period in the history of onr city and State, all the furniture nsed had to be imported from the Eest by way of Cape Horn or Panama, and it wae eome time before we became alive to the fact that as good furniture could be made here as in any part of the world, and thet we poseeesed ahundence of exoellent lumber for all purposes connected with the manufacture.

The Number of Men Employed

Will exceed one thousand, nearly half of them by one house. The amount manufactured will approximate two millione of dollars, more than half of which has been of a euperior quelity.

It hae been found upon trial tbet meny of our woods are much better edapted to cahinet work than was previously supposed. With the exception of black walnut, which is now being brougbt from the Weetern States by rail, we bave many of the finest cabinet woods in tbe world.

Every yeer some new material ie diecovered and utilized, and it is entirely unnecessary now to import any hut a few of the hard dark woods for the manufacture of our finest furniture, and meny of them are at onr very doors. Centrel America, with which we are in easy communication, can furnish ns an unlimited quantity of the most appropriate and beautiful. Besides we have Oregon and Wasbington Territory to draw from in addition to our own great forests. So that we not only can snpply oureelves, but send abroad large quantities of the raw

Material.

Bedding, which has been considered one branch of the furniture husiness has undergoue great changes within three years, a great deal of our materiel having been imported tbat is now produced at bome. The stock of curled hair hes until recently been shipped out of the country to be prepared and returned to us in the rope. Now it is manufactured quite extenoively here.

Eureka heir as it ie oelled, manufactured from the common *soap root*, is becoming qnite an important article of merchandise. It is nsed extensively in upholstering, common bedding, etc. It has heen recently discovered that the inner berk of the redwood tree containe a soft elastic fiber that ie destined to take the place of pulu, which has been extensively ueed during the last fifteeu years. It is considered equal to the pulu and will not coet one quarter as much. The thoueands of wild geese that are killed annually and the universal high price of feethers euggests that some proper metbod be devised for curing the immense qnantities that are wasted yearly.

One feature of the furniture businees for the laet year has heen the steadily increasing trade with foreign countries, and especially with adjacent States and Territories, which is a gratifying fact for the dealers and for the community at large.

All our furniture manufacturing honsee are large and important, and we intend noticing them all from time to time. The principal is

The California Manufacturing Co.,

Snccessors in business to N. P. Cole & Co., 226 Bush street, which now possesses tbree large establisbments, one on Bush etreet and two on Pine street. The first is the old establishment of N. P. Cole & Co., the eecond wes formerly that of Whitney & Co., which has been coneolidated with the previoue one for the formation of the preeent company; and the third occupies the location of Goodwin & Co's old factory. The first one covering a twenty-vara lot, and coneieting of four etories and a basement, huilt expreesly for the furniture manufacture. The basement, which ie very large and oommodions, ie used for the storage of heavy goode and thoee imported from the East. The firet floor ie occupied hy the offices and for packing and ehipping purposes, in which 20 men are conetantly employed. The eecond floor hee a ceiling of eolid white cedar, eupported by iron columne, and aewell as the third, ie ueed entirely for the purposee of a show-room. Here oan he eeen some of the moet heantiful, megnificent and costly furniture to be found in the United States—from which might be fitted out at ebort notice, the moet gorgeous maneions to be fonnd within the bounds of the Union. The fourth floor forme an immense workehop, where the furniture ie put together and the upholstering done. The material nsed in the upholstering is of the richest and moet coetly character, imported from Eugland and France. Plushes, Repps, Terrys, Brocatellee and Courteleinee of the most beautiful patterne and the most eplendid colore are need np weekly hy hundrede of yards. The most of the fnrniture in the rough ie menufactured at the Statee Prieon, where 250 convicte work under the superintendence of 40 free foremen. The whole numher of workmen employed hy thie firm is ahout 400, and the monthly eeles average $125,000.

The Factory of L. & E. Emanuel

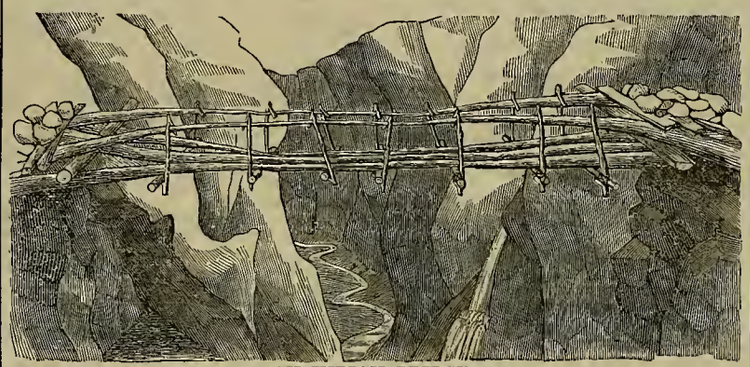
Is located on Berry etreet, hetween Fourth end Fifth. There are three buildinge devoted to the purpoeee of manufacture; one, the principel, 120 feet long hy 100 feet broad end two stories in hight; one on the opposite eide of the street, 30 by 120 feet, used for polishing and finishing, and a third, 25 by 120 feet, used also for the eame pnrposes. Tbis firm has been estahlished twelve yeare, and their epecielity lies in the mennfecture of chamher furniture. The number and variety of the machines nsed here is surprising. Tbe most curious ie the band saw, a thin flat circle of steel, which will almost fold up like a rihhon, and which will cut lumber to any conceiveble pettern or ehape. Tbere are two here, one 32 feet long for resawing from planks into hoards, end one 16 feef long for cutting curves. No one outside the business has the faiutest idea of the quickness with which furniture is manufactured here. A cbamber eet can be manufectured from the plank and perfected in every way, save in polishing, in 20 minutes. There are here employed 94 men, who average $3.00 per dey. Tbere is used from 4,000 to 5,000 feet of lumber per day, and the annual manufacture reaches a value of upwards of $200,000, one-third of which finds a market beyoud the limits of the State.

San Francisco Glass Works.

Amongst the variouе industries of our city, that of glass making is one of the first importance. Commencing a few yeers ago it has advanced with rapid etrides, and owing to our constant production of wine and preserved bottle goods, has now assnmed a place in the front rank of our local industriee.

Of the two factories existing in our city, the San Francisco gless works was established by Mesers. Newman & Brennen, on Townsend St., in 1865. Here the factory wes totally destroyed by fire in 1868, and its re-establishment was not again undertaken till 1870, wben the proprietors sterted to work on King street near Fourtb, where the worke now owned solely by Mr. C. Newmau, are located.

It occupiee a epace of 67 ft. by 50, and ie two



AN INDIAN BRIDGE.

storiee high, the glass-blowing being carried on in the second story, wbich is entirely devoted to that purpose. The centre is occupied by the melting furnace, elliptical in ehape, 10 ft. in diameter, having a glowing, crater-like appeeraнce, and possessing 5 pots with a melting capacity of 1,200 lbs. each, every 24 hours. The room where tbis is located ie eurrounded with nine large annealing ovens. Paying a visit to tbe estehlishment tbe other day, the urbane proprietor kindly expleined to us the entire *modus operandi* of the process therein carried on, of which, owing to our circumscribed epace, we regret to say thet we are only able to give a limited sketch. At the time of our visit, the workmen were busily engaged iu manufacturing large, twelve-gallon carboys for one of our largest chemical manufacturing establishments, and amber-colored wine and epirit bottles for severel of our largeet wine and spirit merchants. In making the carboys tbe workman dipped the end of the blow-pipe iuto tbe melting pot, and, bringing it out, cooled it somewhat. Then it was dipped into the melting-pot again, coming out with a larger quentity of the molten gless. Thie operation, which wae performed three timee, Mr. Newman celled gathering. After heing dipped the third time, the blow-pipe contained 12 lbe. of liqnid glass, of a rich yellow color, wbich was rolled on a lerge etone, called a marver, where it cooled eufficiently to undergo the process of blowing. Being pleced in a large earthen mold, the operator applied hie lips to the blow-pipe, when the glowing mase swelled out, assuming the shepe and dimensions of a carboy. The ring of tbe neck wae now put on.

This being doue the carboy was conveyed to the annealing oven. Tbe blower makes one hundred of these carboys, the number contained by each of the annealiug ovene in this house. The carboys ere in the ovens 36 hours; when they ere eufficiently cool they ere ready for packing. Mr. Newman has now an order for 2,000 of these carboys. The fluid glaee from which they are made is formed hy melting together sand, eoda and lime in the proportions respectively, four seventhe, two seventhe and one seventh. Glass of various colors is formed by adding coloring matter to it while in a melted etate; for purple glass, manganese; for amber, bleck lead; for blue, cobalt and zefre, while green is the uatural color.

This estahlishment manufacturee bottles for whieky, wine, picklee, mustard, patent medicinee end for the numerous eoda and other minerel water manufecturee of the State, and en infinitude of other kinds of glaswere of all colors—which cen not be surpessed. Forty three hands are employed, of whom there are glass-hlowers who earn on piece work from $4 to $6 and sometimes $8 per day. The establiehment also contains a department for covering demijohne with rettan, and is well worth a visit by any one curious to learn someting about one of the least popularly known arte.

Indian Bridge Architecture.

The accompanying picture ie a rough eketch of a style of bridge building rarely met with. It appears to our eyes, somewhet rude and primitive in constrnction, and yet when we consider thatit is made by Indiens, and entirely without the use of iron in any form, and no tools but knife and hatchet, we are inclined to think that even eome of our own young engineers might be puzzled to do better with tbe same meteriale.

This bridge, which epans a mountain gorge, through whioh runs the Hun Kun river, on Grease Trail in British Columbia, is 98 feet in length, as we leern from Dr. Geo. Chismore, who furnished us with the eketch just before leaving San Francisco with Mons. Pavy on his exploring expedition for the open polar sea.

This hridge was built on account of its great commercial importanoe to the Indiane in the transportetion of fish, oil and other commodities from the coast along the important trail mentioned to the great interior, thus eaving a vast circuit in miloe.

Tbe bridge was made hy felling trees so that their tops extended ont over the chasm on each side. From the ends of theee hy means of a chord, light polee were drawn across and firmly bound to the fallen treee by raw-hides, completely spanning the chasm, then larger poles were securely bound to the others.

Afterwards the uppermost timbere were placed in position, their butts heavily weighted with stones, and their tops connected and fastened to the lower stringers by crotched limbe henging from the upper and bound to crose-pieces nnder the lower stringers, hinding the whole structure and these cross-pieces eupporting a foot log in the center, hewn from trees; tbe whole making a structure of sufficient etrength to bear up the largest Indian with a pack of 200 pounds weight.

There are other bridges of this kind in the Indian country, eome of which have stood for a century.

Malva as a Forage Plant.

We are desired to make fnrther mention of the Malva plaut or tree; for with us it assumee the proportions of a tree and maintains itself green under any conditione of drouth as most trees do, by their deeply descending roots. Botenically, the natural order *Malvaceæ*, contains 39 genera and as many ae 1,000 species.

The entire family with all its epeciee abound in mncilage, and are therefore nutritioue as food for auimals, as not one of all its varietiee is known to possess unwholesome qualities. Tbe common mallow,—*Malva sylvestris*—the one under consideration, is an evergreen with broad succulent leaves with purplish flowers, and of very rapid growth in a euitable soil.

Heving ouce become estehlished upon a farm it soon takes possession of every uuoccupied nook and corner end along the fences, and yet is easily subdued or kept from becoming a uuisance, while at all times its green leaves are a luscious morsel to almost every animal of the farm, and when the tree is but three or four years old will furnish en excellent fuel for the house.

What Animals Eat It.

Every one who has had the Malva growing on their premisee ae an ornamental flowering hush or tree, knows how eagerly horses end cattle devour it when they get a cbance at it. Not only the leaves but they find the young twigs and limhs sufficiently succulent for a tempting bite and will eat them the size of a pipe etem as readily as the leaves. Sheep and goats are equally fond of them.

Fed to dairy cows in the late summer months, it increases the yield of milk as well as its richness, and a few acree of one or two years old treee would go far towards keeping the cows in good coudition for wintering to the best advantage, and tbis would apply equally to any other stock. They might first eat the leaves and if these didu't hold out they could go at the stalks and with no injury to the vitality of the tree at thet season of the year.

Wheu the winter rains come on and the grasses start, turn them out of the malvas, and if much broken, prune, trim and clean up, and they are ready to supply you with fresh leaves when the dry season comee on again.

Its Further Value.

In addition to the value of its leaves for forage and its wood for fuel, its flowers which are produced in the greatest profusion from early spring to autumn, furnieh an excellent pasture for heee, from which they gather a honey of superior quality.

The bark of the malva—or mallow as it ie sometimes called—produces a strong fibre that

THE MALVA.

can be worked into a variety of useful forms for coerse sacking and for making paper. Tbe roots possees valueble medicinal properties, and from its purple flowers, the Chiuese make a blue dye said to be equal to indigo.

Habit of Growth.

Itie a wide-spreading bush, and when plaut-ed four or five feet apart, will in two yeers completely cover the ground, or with only narrow pathe just eufficient for the animale to make their way between them, and from five to eight feet high. The form of the flower, and the leaf in minieture are shown in the engraving.

The best soil for the malve ie good eandy loem, bnt it will flourish in elmost any soil that will produce ordinery farm crope, and its yield of leavee ie simply enormous, and aftcr the firet year tbe plants require no kiud of attention, except to see thet they are not wholly denuded of their leaves during the mouths of July and August; but in September and after werds they can be fed as closely as desired, without destroying tbe vigor or life of the tree.

A Result of Speculating in Wheat.—The speculators who formed a wheat "corner" in Chicago, to oppress tbe poor, have fered very badly. The *Mail* states that one of the brokers, a Mr. Diamond, was compelled to sacrifice bis residence, and ell hie otber property, in the cresh thet overtook the "riug." Another, residing et Toronto in great style, was sold out by the Sheriff, and his wife, who gave a three-thouеand-dollar party a little while ago, and now hes only her piano left as a memento of her late profusion. A similar fate attended most of the others engaged in the disreputahle treusaction; and hut very little sympathy is felt for their misfortunes. Anything beyond legitimete profits in the wheat trade is extortion, which falls with crushing force upon the clesee least ahle to bear it

Useful Information.

Sleeping in Arctic Weather.

The Toledo *Commercial* publishes a letter written by one of the late telegraphic expedition to Siberia. The writer says:

"You say yon can not imagine how we live in such a climate. I conldn't until I tried it. I didn't believe that it would be possible for me to lie out on the snow without shelter in a temperature of even 20° below zero, but I have done it once in 50° below, and repeatedly in 45°. One of Bush's parties, in February of last year, passed the night on an open, barren steppo, with their spirit thermometer standing 68° below zero, or 100° below the freezing point. Quicksilver they moulded into solid bullets with four minutes' exposnre to the air. It is true they did not daro to go to sleep that night, but I believe that had they been properly fitted out with heavy furs and wolf-skin sleeping bags to tie over the head, they might have done it with perfect safety.

"I'm afraid you would think that I was availing myself of a traveler's privilege, and relating a very large 'yarn,' if I told you how comfortable I have slept on the snow in temperatnre of 30°, 40°, and 45° below. We are obliged to sleep in fur bags, of course, with onr faces entirely covered, to take the ntmost care to have our fnr stockings perfectly dry; but I have slept in that way through the long Artic nights as comfortably as ever I did in bed at home. From September, 1865, until I came aboard the Onward, a few weeks ago, I never slept in a bed, or on anything softer than the snow or a board. So you can imagine that the sensation was a curious one."

How to Destroy Mosquitoes.

A writer in the *Scientific American* explains his process for destroying mosquitoes:—The strongest crystalized carbolic acid must be placed in a bottle and covered with the same quantity of red cod liver oil. Shake the bottle thoroughly, until a whitish-colored foam appears; if such foam does not arise, however a small quautity of powdered lime should be added with a little water. Pour the mixture into a dish or other convenient article, and place it directly nnder the open window, as it is from this quarter the mosquitoes enter.

In my humble opinion the effect shonld be explained in this manner: The moment the mosqnito enters, it loses the scent of blood; for, as the combined odor of the oil and acid is mnch more powerful than that of blood, it follows as a consequence, that the mosqnito becomes snddenly perplexed. The consequence is that, after scrambling and skirmishing in the dark, the mosquito is led, as it were, instinctively into the mixture, where it is either drowned in the oil or burncd to death by the acid.

Formerly I was accustomed to smear my face, arms, and breast with strong oil alone, but I frequently arose in the morning smelling so terribly that, thongh it protected me from mosquito bites, I wae happy to lay it aside. I have slaughtered more mosquitoes with the article explained above than ever I could have done with my fists or any other dangerous weapons.

Property in Dogs.—It is an old and general supposition that the law does not regard dogs as property, and that a dog found running at large in the street is anybody's property. Jndge Dowling, of New York, had a dog-stealing case before him last week, in which he stated that a great mistake pervaded the public mind in regard to dogs; that by law they were as much a man's property as his horse or anything else he owned; and moreover stated that in case of killing a dog, unless in self-protection, the party could be made to pay the value of the dog the same as though it were a horse.

The Value of Small Facts.—Few of us appreciate the value of little things. When Dr. Holmes sketches the enthusiastic Sacrabee, who tells us he could spend a whole life profitably in the study of a single bug, we are apt to smile at what seems to be a frivolous waste of time. Yet it is to these patient, laborious men of science, who pile together one by one the little stones of knowledge, that we are indebted for the glorious temple of progress in which we of the nineteenth century rejoice.

Commerce in Pollen.—A curions trade has sprang up in a demand for pollen to fructify certain plants. The palm tribe, the Cycadaceæ and other greenhouse trees will flourish without producing stamens, and, for want of pollen, will not fruit. Nothing is more common or simple than to advertise in the *Gardener's Chronicle* for the pollen, for example, of the *Caryota urens*, and other tropical (English) plants, and it is received through the post.

A cement of great adhesive power may be made by rubbing together, in a mortar, two parts of nitrate of lime, twenty-five of water, and twenty of powdered gum arabic, this forming a transparant cement of wonderful strength, and applicable to wood, porcelain, glass and stone. The surfaces to be united should be painted with the cement, and firmly bound together until the drying is complete.

Something About Anvils.

In a deserted shop in Pittsfield, Mass., there rests on its block an anvil that has done duty more than three hundred years. It is as sound to-day as it was in 1633, when Eltwood Pomeroy, after welding for the Stuarts the ponderous horse-shoes of the same style and pattern that his ancestors had made dnring generations for the Tudors and Plantagenets, grew weary of taxes without law, and work without wages, and anvil in hand sailed for the New World. A deft workman, he throve in the settlements, and left his anvil as an heirloom to his descendants. They show you in the Tower of London the anvil on which the sword was forged that Richard *Cœur de Lion* used in his contest with Saladin, and at the collection of Pompeian excavations in Naples there is an anvil, certainly older than the Christian centuries, which, of precisely the same shape we use, had evidently done service for stalwart workmen of many generations before the city was buried. Bnt, botter still, in the Egyptian room of the British Museum there is a veritable anvil of the Pharaohs. It is older than Rome, older than Jerusalem; as old as the days of Abraham, and probably in existence when the patriarch "was come into Egypt, and the Egyptians beheld Sarah that she was very fair." It is jnst like a modern anvil, msde apparently in the same way, weighing about seventy-five pounds, and sonnd as it was when struck by the hammer thirty centuries ago.

Stowage of Cabooes.—Much complaint is made of the bad storage of vessels, by the stevedores of Liverpool, Eng. It is thonght that mauy vessels and lines have been lost from such carelessness. One of the Liverpool steamers, recently came near going to the bottom from this canse. The passengers describe the trip as one of constant fear and terrible apprehension. It is asserted that there is no port in the world in which so much bad storage of cargo is performed. The *Nautical Gazette* says: "There are ninety vessels put back from British ports to be restowed where one returns to an American port for the same purpose. The case we allude to is not an isolated one by any means among steamers. It is high time that this matter was looked into on the other side, and if the underwriters have no voice in the matter, then the owners, for their owu credit, and for the sake of hnmanity, should attend to the proper stowage of passenger steamers."

Curious Preservation of a Dead Body.—At South Bend, Ind., the body of a deceased lady, buried ten years ago, was lately uncovered for re-interment, when the corpse was found to be in an excellent state of preservation. Although petrifaction had not taken place, the body was as perfect as the day it was placed in the coffin. The whole body was perfectly preserved, even to snch parts as the tongue, which could be moved back and forth in the mouth. The expression of the face was retained and the color of the flesh was natural, except for its waxy appearance. The shroud, when exposed to the air, fell to dnst.

If the chemical nature of the soil were known, and also the medicines administered during the sickness of the deceased, it is possible that the reason for this singular preservation might be ascertained. From the description given, it would appear as if it might be due to the presence of arsenic.

Simple Experiment to Show that Air Possesses Weight.—Place a wineglass full of water in a small flask and heat it until the steam has driven out the air; take it from the water, cork immediately and tightly and set it aside to cool. When cool, balance carefully in a delicate balance; then remove the cork to admit air, place the cork in same balance with the bottle and the additional weight of air admitted into the flask will be sufficient to sensibly turn the scales.

Choosing Spectacles.—For either short, long, or aged sight, spectacles should be of perfect material, ground to proper focus to suit the peculiar wants of the organ, and thoroughly polished. "Eye sharpeners," as they are called, should never be used without professional advice. The eye is too delicate to tamper with.

Keep the Mind Busy.—When John Adams was ninety years of age he was asked how he kept the vigor of his faculties up to that age. He replied by constantly employing them. The mind of an old man is like an old horse; if you would get any work out of it you must work it all the time."

Few people know, aud thousands do not know, that by setting a glass fruit jar ou a folded towel, thoroughly soaked in cold water, the fruit can be poured in boiliughot, with no more danger of breaking than with a tin can.—*Ex.*

A new green pigment, said to be brilliant, is composed of twenty parts of oxide of zinc and one of sulphate of cobalt, mixed into a paste with water, and exposed to a red heat.

As the decay of wood advances its property of burning with flame diminishes. Carburetted hydrogen is not produced. For the purposes of fuel, decayed or diseased wood is of little value.

A lady of Rochester, Minuesota, has obtained a patent for a fan, to be attached to a sewing machine and operated by the same power.

Good Health.

Slapping as a Cure for Dyspepsia.

Some years ago a physician in New York city published a small book, in which he gave well written certificates of marvelous cnres of dyspepsia. Patients began to flock to him. Their introdnction to his mode of treatment was very queer. He took the patient into his consnltation office, examined his case, and if it was one he could cure, he announced his fee as five hundred dollars, and to be paid in advance. If the patieut's confidence was strong enough the money was paid, and then the doctor took him through a hall, up a flight of stairs, throngh another hall, thon through a room, down a flight of stairs, up a flight, then to the right, then to the left, and at last they arrived in a small room without windows, artificially lighted, and in that room the patient was required to put his name to a solemn vow that he would never reveal the mode of treatment.

This being all finished, the patient was introduced to the treatuent. It consisted in slapping the stomach and bowels. Besides this the patient was reqnired to live temperately, and much in the open air. On rising in the morning he was required to spend from five to ten minutes in striking his own abdomen with the flats of his hands. Then he went out for a morning walk after having drank a tumbler or two of cold water. At eleven o'clock in the forenoon he spent a quarter of an hour or more in slapping the bowels with his hands. Then he laid down for a rest. He dined temperately at two o'clock, and spent the afternoon in sauntering about. At seven o'clock in the evening he repeated the percussion, and went to bed at nine o'clock. A majority of cases of dyspepsia that sought relief at this establishment had nsed all the other means except the slapping; that is to say they had lived on plain food and much in the open air.

It was the slapping, the pounding with the fists, kneading with the fists, sometimes with the fists of an attendant, that cured these people, for cured they certainly were. Marvelous cures were effected at this establishment. After the death of their doctor some of the patieuts felt themselves absolved from the obligation, and one of them described the treatment to me. In every case of indigestion, no matter what may be its character, slapping the bowels with the flats of the hands on rising in the morning, four hours after breakfast and in the eveuing on going to bed, is excellent treatment. I cannot conceive of a case of chronic indigestion which such manipulation would not relieve.

If the patient be so weak that he cannot perform the slappings or kneadings on his own person, the hand of a discreet assistant should be empoyed. It is marvelous how the body, the stomach for example, which, when these manipulations are first practiced may be so very tender that the slightest tonch can hardly be borne—it is marvelous how in two or three weeks a blow almost as hard as the hand can give is borne without suffering. If you have a pain in the side or across the chest, percussion will relieve it almost immediately. But constipation, dyspepsia, torpidity of the liver and other affections of the abdominal viscera are relieved more surely and completely than any other class of affections by percussion, kneading, etc. Such treatment comes under the head of counter-irritation. A new circulation is established in the parts near the point of suffering and congestion. Besides this especially in abdominal troubles, the manipulations appeal directly to the contractility of the weak relaxed vessels in the affected part.—*Dio Lewis.*

Effect of Alcohol and Exercise.

At a receut meeting of the Royal Society, a paper on the "Further Experiments on the Effect of Alcohol and Exercise on the Elimination of Nitrogen, and ou Pulse and Temperature of the Body," was presented by Dr. E. A. Parkes. It contained a detailed description of experiments made on a soldier, a Scotchman, who had been brought up ou oatmeal and milk, and who at one time had been in the habit of taking more than a fair amount of whiskey. As a soldier, however, he bears the character of a steady man in the enjoyment of perfect health. His experience as to the effect of alcohol is noteworthy. He commenced the exercise and brandy period of the experiment with a belief that the brandy would enable him to perform the work more easily, but ended with the opposite conviction. The brandy was takeu in 4-ounce doses at 10 A.M., 2 P.M., and 6 P.M., in an equal quantity of water, and the work was chiefly done in the two hours immediately succeeding each dose, and from 6 to 8 A.M. The two hours' work from 10 A.M. to 12 M., immemediately after the first four fluid-ounces of brandy, was, he thought, done equally well with and without the brandy. The man affirmed that he could tell no difference, except that, to use his own words, "the brandy seemed to give him a kind of spirit which made him think he could do a great deal of work; but when he came to do it he found he was less capable than he thought." After the second four ounces of brandy he felt hot and thirsty; bnt on the first two days he thought he worked as well as on the "water" days; on the third day, however, he had palpitation of the heart, and was surprised he had to stop from time to time, because, to nse his own words, "of his breathing not being so good."

The third four fluid-ounces of brandy at 6 P.M., produced ou all three days very marked narcotic effects; immediately after taking it he became heavy, felt the greatest indisposition to exert himself, and could hardly refrain from throwing down his spade and giving np work.

He worked with no vigor, and on the second evening thonght his muscular power decidedly lessened. On the third evening, as it was raining he could not dig, bnt took walking and running exercise under cover. On attempting to run he found, to his great surprise, as he is a particularly fast and good runner, that he could not do so; on attempting to rnn he had palpitation and got out of breath, and was obliged to stop, so that, he stated, on the next day, "if he had his accoutrements on and been ordered to 'double,' he conld not have obeyed the order." After coming in from work on each evening he fell into a heavy sleep, from which he was ronsed with difficulty. This lasted for three or four hours, after which he was restless and sleepless.

The man's own judgment was, at the end of the trial, that he would prefer to work without the brandy; and when asked his reasons, he mentioned "the increased thirst, the heaviness in the evening, and the fluttering at the heart."

Mortality in San Francisco.

The annnal report of the Health Officers, for the year ending June 30th, 1872, is a complete and interesting document, giving a detailed report of the mortnary and sanitary condition of the city.

Deaths the Past Four Years.

The total number of deaths during the year was 2,998. The preceeding year we had 3,214; in 1870, 3,243; and for the year ending June 30th, 1869, the deaths number 4,093. Thus it will be seen a constant improvement in the mortality of our city has been going on during the last four years, notwithstanding the steady and considerable increase of population—our last year showing a less number of deaths than either of the preceding three years.

This is believed to be the best showing that can be truthfully made for any city in the United States, if not the entire world; and thongh our mortality is already so small proportionate to that large popnlation, Dr. Bates believes that if we even had a moderately well sewered city we could boast without the fear of contradiction from any source of having the healthiest city in the known world. St. Louis is the only city of which we have auy knowledge, that reports a less percentage of mortality than San Francisco, which can be accounted for by the fact that their system of sewage is greatly superior to ours; in fact St. Louis is said to be the best sewered city in the United States.

We have had a decided increase of cholera infantum which is to be attribnted in a great measure to improper food and care of infants while teething, but more particulsrly to the poisoned atmosphere, which is the consequence of

Lack of Proper Sweage.

Of ninety-one deaths, the Second, Tenth, Eleventh and Twelfth Wards furnish more than one-half, and from the fact that these wards have very little sewage that is of any account. The nnmber of deaths from typhoid fever is still larger than it should be, but we cannot hope for much diminution until a better and more general system of sewage is carried out. The general improvement in the mortality of our city during the past few years is almost entirely attributable to the increase of our private and public sewers and the connection of private drains and cesspools with the main street sewers.

A Bee Sting.

The stiug of a bee, says the *Country Gentleman* is naturally more violent than that of a wasp, and with some persons is attended with fatal effects. Two deaths from such a canse have recently occurred. The sting of the bee is barbed at the end like a fishhook, and consequently is always left in the wonnd; that of a wasp is pointed, so that it can sting more than once, but a bee cannot. When a person is stung by a bee, let the sting be instantly pulled out, for the longer it remains in the flesh the deeper it will pierce, and the more poisonons it will become. The sting is hollow, and the poison flows through it, which is the canse of the pain aud inflammation. The extracting of the sting requires a steady hand, for if it breaks in the wound the pain will continne for a long time. When the sting is extracted, suck the puncture, and thus prevent inflsmmation.

Spirits of hartshorn, if applied to the affected part, will more fully complete the cure. The poison is acid, and the alkali will nentralize it. If the hartshorn is not at hand, saleratus can be wet and laid upon the place; and soft soap will often case the acute pain. On some people the sting of bees and wasps has little effect, but it greatly depeuds upon the state of the blood whether it will prove injurious, and these simple remedies, if applied at once, will soon effect a cnre.

MINING AND SCIENTIFIC PRESS.

W. B. EWER.....SENIOR EDITOR.

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ILLUSTRATIONS AND REPORTS OF MINING ENTERPRISES WANTED.—Drawings or photographs of mining worke that are of general interest to our readers are eolicited for pnblication in this journal. Official reports of Companies, and description of mines of importance, of epecial interest, are also desired. Sketchee of any new method and dieoveries will be very acceptable.

San Francisco:
Saturday Morning, Sept. 28, 1872.

Gold and Legal Tender Rates.

SAN FRANCISOO, Thursday, Sept. 25, 1872.—Legal Tenders buying, 88¼; selling, 89. Gold in New York to-day, 114.

Table of Contents.

EDITORIALS.—The Mining Situation, 193. The Industrial Interests of the Golden City; San Francisco Glass Works; 198. Prof. Agassiz; Coal in England; The Vienna Exposition; The State Fair, 201. The Reduction of Gold Ores, 200.

ILLUSTRATIONS.—Rippingham's Plan of Canal-Boat Propulsion, 193. An Indian Bridge; The Malva, 198. Bell's Patent Roofing, 201.

MINING SUMMARY from various counties in California, Nevada, Arizona, Colorado, Montana and Idaho; Mining Shareholders' Directory, 196-7. Market Reports, 196.

SCIENTIFIC PROGRESS.—The Locomotion of Animals; Positions for Astronomical Observations; Remarkable Cases of the Disintegration of Tin; The Colors of Gems; Parasite in the Black Cricket; Mixing Colors, 195.

MECHANICAL PROGRESS.—Transmitting Power from Motors; Condensing Liquid Steel, 195.

USEFUL INFORMATION.—Sleeping in Arctic Weather; How to Destroy Mosquitoes; Property in Dogs; The Value of Small Facts; Something about Anvils; Stowage of Cargoes; Curious Preservation of a Dead Body; Simple Experiment to Show that Air Possesses Weight, 199.

GOOD HEALTH.—Slapping as a Cure for Dyspepsia; Effect of Alcohol and Exercise; Mortality in San Francisco; A Bee Sting, 199.

MISCELLANEOUS.—Notes on the Reduction of Gold Ores; The Big Outcrop of Parley's Park; Ruby Consolidated Works; Steam Plowing in England, 194. Patents and Inventions; A Welcome to Agassiz, 201. New Incorporations, 204.

ENGINES AND BOILERS.—We hsve received from A. Romsn & Co., No. 11 Montgomery street, a collection of tables and diagrams for non-condensing engines and boilers, by W. P. Trowbridge, of the Sheffield Scientific School. It gives explanations relating to the tables, including those which refer to horse power of engines, and disgrams which show the qnsntity of water required per horse power per hour for different degrees of expansion. There are also notes on boiler explosions, safety-valves, and subjects connected practically with the mannfacture and management of boilers. The extended liet of engines and hoilers contained in this work is of great practical valne, for from a range of from five to three hundred horse power a choice is offered of various dimensions of engines, speeds of revolution and pressures of steam; and for esch engine in the list, the qnantity of water, or steam per honr which this engine will reqnire. The list of hoilers furnishes the means of selecting the boiler or boilers of the principal types necessary to prodnce this steam. The information is given in a manner readily comprehended, and will he valuable for referenc to all who wish to manufacture or employ the non-condensing steam engine.

MILLS BURNED.—The Bowery mill at Pioche was totally destroyed by fire recently. The loss is great both to the company and to the district. The Sierra Valley mill, near Secret Cañon, Nevada, has also burnsd up. Loss about $40,000. It had just heen pnt in running order at considerable expense.

RICH bank diggings have been discovered on the Klamath river, helow Buckeye Bar, which are paying $30 per day to the hand.

Professor Agassiz.

A special meeting of the California Academy of Sciences wss held on Wednesdsy night at Pacific Hall, in honor of Professor Agassiz, who had been prevsiled upon to address the members of thst Association and their friends. The hall was filled with prominent citizens and a large number of ladies, comprising such sn audience as seldom assembles in San Francisco. Professor Davidson introduced the illustrious gentlemen with a few appropriate remarks, in which he ssid thst the visit to this cosst of Professor Agassiz had alresdy exercised a beneficial influence on the canse of science here and had given to the Academy more life members in one month than it hsd gathered in ten years.

Professor Agsssiz, after being introduced and the applause hsd subsided, said that for the last three years he had been prevented from sppesring in public, owing to the indifferent condition of his health. He had been asked to give some accont of the voyage of the "Hassler," which has terminated its cruise in the harbor of Ssn Francisco. He wss afraid that the incidents of that scientific expedition were too monotonous to be very entertaining; and willing as he was to accede to the request, he thought he would submit a few remarks upon the present aims of science.

The Professor then gave a brief outline of the manner in which the "Hassler" expedition was organized, saying that the expenses were borne by privste individuals, but that the Superintendent of the United States Coast Survey had invited them to go in the vessel. He went on and spoke of the hnmble position which science was obliged to take, on account of poverty, and that it was only in recent times that the value of scientific research was appreciated. He spoke of the strides which science hsd taken, and gave as an example the influence of electricity in progress and sdvancement. In illustrating the efforts of scientific men and the ends they had in view, he selected the subject with which he was most fsmiliar,

The Natural History of the Animal Kingdom.

As it is generslly understood, its study consists in being made fsmiliar with the variety of animals which inhabit the surface of the globe, with their mode of life, their uses and purposes, and a sketch of their relstions to each other. He said that now-a-dsys the efforts of naturslists go fsr beyond tbat. We aim at nothing less than understanding how they csme to be called into existence. The Professor then gave some ressons why the opinions of naturalists shonld vary on so msny different subjects. He then gave some illustrstions of the resemblances among animals, and ssid one difficnlty why they were not understood better was because there were no teachers. The community lacks teachers in this department and we csnnot educate a sufficient number of them becanse other wslke in life held out superior inducements.

In the animsl kingdom all their vast diversity and number can really be brought down to FORM SIMPLE PLANS.

The Professor then entered upon an elementary discourse, describing with the aid of blackhoards the four leading types of the animal kingdom—the radistes, mollnsks, articulstes and vertebrates. He showed thst there could be easily traced in some of theee distinct clssses a system of development from the lower to the higher species, leaving it to be inferred by the audience what position he took on the subject of Darwinism. As for instance, he illustrated the idea in one case hy depicting the processs of development of the caterpillsr, which is a mere worm (of the class of articulates), to the crysalis, which is a crnstscean of the same clsss, and finally to the hutterfly, an ineect of the eame class. So it is with the jelly fish, which commences as a *polyp* and ends ae an *echinodem*. He intimated lightly that the same process of development is shown in the growth of man from embryo to msturity. He did not, however, tonch at all upon the qnestion of development from one claas to a higher clase, or from one distinct perfected species to another disinct perfected species. He entered into a hrief consideration of the forms of animal life, as traced back throngh geological periods to the Azoic age, and found that the same marked distinctions of class and species were rnnning even, parallel and nniformly, as long as climatic influences were found compatihle with their prodnction.

The uncertainty in some cases of correctly and absolutely determining facts, is a bar to progress in some directions, and is only removed hy patient study and improved appliances to assist operations.

He then appealed to the audience to foster and encourage science and the study of nature; impressed it upon them to foster the cause of education at home, and cultivate the people. The lecturer was frequently interrupted by applause, and the whole meeting was a success in every psrticulsr. We shall endeavor at an early day to give the Professor's remarks in full, with the appropriate diagrams with which he illustrated them. At present our limited space forbids such a report as would do justice to the subject.

Coal in England.

Our English exchanges report the snpply of coal to be better and prices easier. Some authorities think that quotations will recede rather rapidly, and that the coal famine will be averted. Colliers are working more regulsrly than they have heen for some time past, which of course will increase the supply. One great canse of the extraordinsry rise in prices hss been the rush which consumers msde to secure supplies before they reached famine rates, and now thst this has to some extent ceased, things will assnme a more settled appearance.

Mnch attention is now being tnrned to the qnestion of keeping up, and, if possible, incressing the supply of coal, and many old fields which have been abandoned on account of richer beds elsewhere, are now being reopened. Several new and important discoveries of coal have been msde recently in localities far apart and in different geological formations. One of these places is in Sandwell Park, near Birmingham, in the center of England; another near Blsndford, in Dorsetshire, and still another at Brora, on the coast of Sutherlandshire. At the mine at Sandwell Park the interesting question as to the existence of thick coal under the "red rocks" will shortly be practicslly aud definitely solved. In this mine during the lsst three months upwsrds of 300 feet of shsft has been sunk, the trisl shsft heing 10 feet dismeter in the clear. In sinking this shaft the transition from the Permian red beds to those of what appesr to be coal measures hss heen very gradnsl, the bright red becoming a pale port wine color, and then gradually merging into the dark, and then pale blue shales of the coal measures. The coal already met with in this mine is seven inches thick, and was found abont 300 feet nearer the surfsce thsn was expected, in the Permian strata. Geologist differ ss to the existence of cosl nnder the Permian rocks, some claiming thst it will he found everywhere under that formation if songht for deep enongh. The indicstions of its existence there are very fisttering, judging from the opinions of the English press, and encourages the idea thst the extent of the mineral district in the center of England is far greater than the geological maps indicste.

This thin seam of coal formed under the Permian rocks, at a depth of 600 feet from the surfsce, leads geologists to consider thst thick beds will be found st greater depths, and sinking is being continned to solve the problem. The reported discovery in Dorsetshire seems to contrsdict the experience of miners elsewhere. Parties are also boring in the chalk formation of Sussex. The questions to be settled by the work at these mines are important ones to England, and if their expectations are realized it will have considerable influence on its industry in future times. The coal mining industry of England is so closely connected with msnufactnring interests that every additional mine of importsnce creates looms, forges and manufacturing establishments in its vicinity. Thus with the great Sonth Wales basin are connected important iron mines and iron works, and the renowned smelting furnaces of Swansea; in the Scottish coal fields are manufactories of iron, cotton and wool, and the bnsiness of msking iron ships and machinery. So everywhere it may be ssid where coal ahounds msnufactures more naturally spring into existence and flourish. With all her wonderful coal fields, however, England is said to poseess only fonr per cent. of the total surface of the coal fields of the world, and the United States and British North American Coloniee include in their territory 180,000 square miles of coal measures. Of these only an exceedingly small portion are being utilized as yet, hut when the attention of our people is turned more generally to this most important industry, and the means of transportation are fnrnished in all localities where coal exists, then will the liet of our manufactures, already extensive, he increased so as to be more in proportion to our population and area of territory.

THE Emma mine workmen have struck for better rations and more of them.

THE famous Amador mine is running again.

The Vienna Exposition.

The people of the United States do not seem to attach as much importance to the great World's Exhibition at Vienna, in 1873, as do other countries. This is illustrated in the apathy on the part of the press generally, to encourage and induce Americans to exhibit there, snd by the fact that every nation but the United States has slresdy overrun the space allotted to them and are applying for additional accommodstions. The importance of this exhibition to American merchants, mechanics, msnufacturers and inventors is much greater than many suppose, and it will be first, and perhaps the only opportunity for some time, in which they can introduce their goods, inventions and msnufactures to the notice of the people of Eastern Europe and Western Asia. Russia, Tnrkey, Greece, Egypt, and all the older agricultural nations show a very laudsble desire to become acquainted with the lstest improvements in labor-saving machinery of all kinds, and the World's Fair affords the most excellent opportunity to our people for extensively advertising their wsres snd coming in for their share of the profits. Leaving aside considerations of national pride in the exhibition we could mske, the idea of being materially benefitted by it ought at least to cause our usually enterprising people to tske a more active part. Every facility will be afforded to exhibitors, not only to show their goods but to sell them if they desire.

The circular issued by the United States Commissioner gives assurance that no charge will be made by him or his assistsuts further than that exhibitors will be expected to pay the expenses of trsnsportation, unpacking and placing on exhibition, storing boxes, repacking, reshipping snd insurance. Arrangements are in progress by which some reduction on freight will be made. The Governments of Europe have all appropriated large sums of money.

Our Government has not been very generous in the matter since when the Commissoner was appointed, a proviso wss made thst no expense was to be incurred by the Government. Taking into consideration thst at our proposed Centenuial Exposition in 1876, we desire Europesn nstions to be properly represented so as to make it a success in every particular, we should most assuredly pay more attention to the World's Fair there, so that if no other motive exists for them to come here, then they will st lesst do so to return the compliment. We have heretofore given a sketch of the proposed exhibition and it is to be hoped thst American industry, science, art and educstion will be fully represented.

The Reduction of Gold Ores.

We commence on page 194 of the present issue, the repnblication of a paper on the Reduction of Gold Ores, written and published in pamphlet form, a short time since, by H. A. Thompson, M. E., of Melhourne. The paper refers more particularly to the grest loss sustained in the reduction of gold-bearing quartz, and the extent to which such loss may be diminished by means already known and in practical operation.

The author, in his prefstory remarks, says, thst although many readers may not be prepared to concur in all the views advanced, still few will dissgree in the main objects of the discussion — the advocacy of a sesrching and systematic inquiry into the processes in nse, the form and extent of the loss at present sustained, and euch improved methods of operating as msy rednce that loss to certain ressouable hounds.

It would appear from farther remarks that the experience of gold-saving snd amalgamstion in Australia differs in no essential point from the experience on this Coast. He says that careful experiments there, extending over many years, have shown that where the undecomposed sulphides exist in any considerahle qnantity—ae they do in most of the mines there as well as here — the loss in reduction varies from 25 to 75 per cent. of the assay valne of the ore. No one engaged in milling operations in gold oree can fail to be interested, if not enlightened, by a careful perusal of this paper, which will be contiuued through four or five issues of the PRESS.

IT IS stated that a powerful body of English manufacturers are forming a company for the pnrpose of importing into England American coal.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[From Official Reports to DEWEY & CO., U. S. and Foreign Patent Agents, and Publishers of the Mining and Scientific Press.]

For Week Ending August 27th, 1872.*

Convict's Shackle.—Peter Rnnqnist, Steilacoom City, W. T.

Harness-Saddle.—George W. Duttou, Tomales, Cal.

Harrow.—Jamos Harris, S. F., Cal.

Horse-Collar.—Pemberton B. Horton, S. F., Cal.

Fruit-Box.—Charles W. Weston, S. F., Cal.

*The patents are not ready for delivery by the Patent Office unill some days afterward.

Note.—Copies of U. S. and Foreign Patents furnished by Dewey & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency

The State Fair.

The State Fair at Sacramento, which closes to-day, has been a success, financially and otherwise. The viewers of stock at our own and other State Fairs, declare that the show of animals has heen the finest exhibitiou they have ever seen. Tho display of fruit is superh, and that of wine and grapes the largest ever yet made. The show of vegetables is also good, and especially so in regard to qnality.

Agricultural machines are few in number, and the department does not show its nsnal life. A few California inventions will be noticed hereafter.

One of the greatest attractions, most highly commended, is Mr. Baccus' sewing machine attachment—a very simple water wheel conected directly to tho shaft, whereby the machine is run without labor. The valve is moved by a foot rest, so that the supply of water is regulated by the foot, and consequently the power is under the control of the operator. The patent for this iuvention was received through onr agency, and our readers may soon expect a full illnstration of it.

Painfully we notice the absence of any considerable number of new articles of manufacture. New products are too scarce for a new and developiug agricultural and industrial fair as onrs. Bnt the few interesting ones found here will be duly noticed.

The Art Callery.

The managers of the Fair very correctly considered improvement in the fine arts among the objects worthy of their special encoursgement. They very properly believe in intermingling the poetry of life with the prose. Hence we find under jndicions management the Society's art gallery has been greatly improved and enlarged and the lights have been arranged after the most approved style. The artists appreciate this kind attention and have come forward this year and contributed nobly from their studioe to make the art galley a feature of the Fair. We like thie idea of ehowing the fine arte in the same room with other articles of a light and elegant character. It combines the useful and beautiful as they should be combined in all the every-day mattere of life.

The art gallery at the Pavilion, forms a most excellent and appropriate back ground to the brilliant exhibition of fruit, furniture, and other articles in front. The exhibition of oil paintings and photographe ie much larger and better thie Fair than ever before.

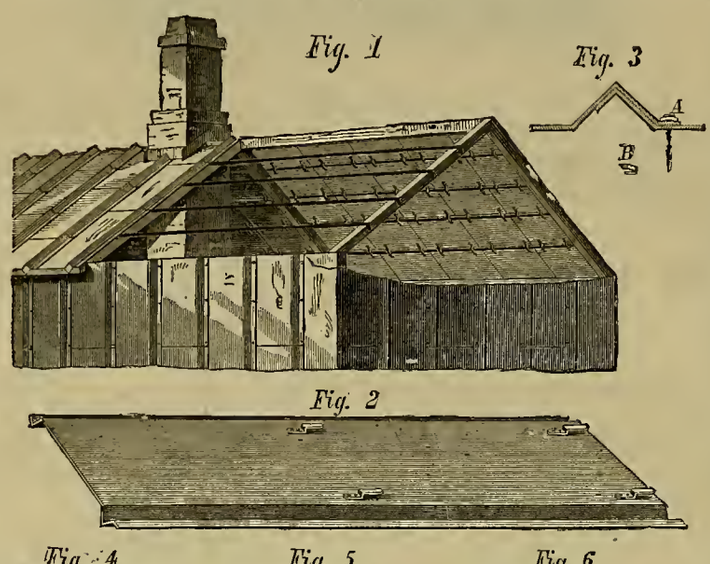
Petroleum.—The eupply of petrolenm is so great that the oil men of Penneylvania propose shutting down the wells and enepending drilling, so as to decrease it. The production has reached over 18,000 barrele per day, and is increasing. Thie excessive enpply hae caused euch a decline in pricee that the business is becoming nnprofitable. A number of welle have already been closed. It seems strange that with the enormoue consumption of this article throughont the world, there ehould be so great a surplus ae the action of the owners of the wells indicate.

New Distriot.—Considerable excitement exists over the discovery of rich silver lodes in the Goose Creek range, 25 or 30 miles north of Lecoma, on the C. P. R. R. The ledges are eaid to be well defined, and the free milling ore assaye from 94 to 3,000 ounces per ton. Numbere of prospectors are on the way to the new mines.

Improved Sheet Iron Roofing.

In answer to many inqniries with regard to improved roofings, we give herewith an illnstration of a good form of sheet iron roofing, recently patented by Mr. W. S. Belt, of Ciucinnati, Ohio.

Referring to the engraving, Fig. 1 represents the roofing partly applied to the roof and sides of a building. In Fig. 2 is shown the nnder side of one of the iron sheets of which it is composed. It will be observed that the sheet is triangularly crimped at its sides in such a way as to allow the crimped portion of one sheet to to overlie the crimp of another, (in the manner show in Fig. 3), and that the lower side is provided with fastenings which are riveted to the plate. The overlying crimp has a perforated flange, through which two adjacent sheets may be nailed to the sheathing or rafters of the roof, as shown at A, Fig. 3. It can readily be seen that, in thus employing the roofing, each sheet is fastenened by both of its sides to the supports. The nail nsed is barbed, by which a very firm hold is taken. A lead washer, as at B, is placed between the nail and the plate, and hy its nse any unevenness of surface is accommodated and an air and water-



BELT'S SHEET IRON ROOFING.

tight joint formed on driving the head of the nail home into the lead. The sheets are eight feet long and two feet wide between centers of crimps, and, ae manufactured, are coated on both sides with paint.

Fig. 4 repreeente the application of the sheete to a sheathed roof, in which case rough boarde of an even thickness are all that is necessary for the eheathing. Fig. 5 ehowe the mode of applying the roofing to purlins where no eheathing ie employed. In this case the purline may be placed any distance lese than eight feet apart, and triangular strips of wood are nailed to, and at right angles with, them, two feet apart between centere, so as to fit under the crimps that eupport the eheets. Or boarde three inchee wide may be nailed to the purline, and the sheets applied to them in a similar manner to that ehown in Fig. 6, which represents the mode of attaching the roofing when rafters withont eheathing are to be covered. In the latter case, etrips of boards are let in, on a level with the upper surface of the raftere, for the ende and centere of the sheete to rest upon. The triangular strip may be placed under the crimp in any case if desired. The ende of the sheets are joined by overlapping them, or by bending them so as to form a lock joint, which, ae they are well annealed, can readily be done. The sheets are aleo easily made to conform to the anglee of roofs of either ordinary or peculiar form, so as to make perfectly tight joints and fully preserve the effective character of the roofing. It is applied with such facility, aided by the inventor's directione, as to require no skilled workmen to put it on.

Mr. Belt has also devised a combination iron frame to support his roofing, by the nse of which cost is lessened and its fireproof qualities hightened. Its construction will be nnderstood from Fig. 1, where the rafters are seen to snstain bands stretched between them. These bands are made of strap iron and] are placed 46¼ inches apart. To these bands the fasteniugs on the under side of the sheets before alluded to, seen in Fig. 2, are hooked, and the roofing thereby secnred in position as seen in that portion of Fig. 1 which shows the under side of the roof. By using iron for the rafters, a fireproof roof is made.

Many advantages are clsimed by the inventor for this mode of roofing. He says that the crimp gives so much stiffness to the sheet, it is cnabled to sustain itself and also considerable weight in the center, when supported only by its ends. There is, consequently, no liability to "bag." To give the sheets additional stiffness if desired, a center crimp can be made, with a loss of only half an inch of surface metal.

Its fastenings are so secure as to prevent auy wind affecting it, and, at the same time, if damaged, it can easily be taken out and replaced, The entire roof can he taken off one building and put on another, without damage and at a trifling expense, for which reason it is admirably adapted for temporary buildings. In all of these respects, it is superior to the plain sheet metal roofing, and it is claimed to excel the corrugated; while the same weight of metal in the crimped form covere 20 per cent. more surface than if corrugated. In roofing warehoueee and emall buildings on this plan, from two-thirde to three-qnarters of the wood usually employed could be dispeneed with.

Thie roofing is furnished, in light sizes, boxed and delivered to railroad depots or eteamboats in Cincinnati, inclnding the fastenings of barbed nails and lead washere (as appears in the engraving), at $8 per square of 100 square feet.

We see no reason why euch roofing might not answer admirably for snow sheds. Its smooth, painted eurface, if placed at a proper angle would probably prevent snow from lodging, as it doee npon rough boards, and it is moreover thoroughly fireproof.

Further information can be obtained by addressing the inventor at 56 and 58 East Third street, Cincinnati, Ohio.

Iron Mine in San Mateo.—A deposit of the red oxide of iron is said to have been discovered on the ranch of the Hon. T. G. Phelpe, near Redwood City, San Mateo county. The surface ore has been assayed and found to yield 32.82 per cent, of the best quality of iron. It ie believed by competent judgee that much richer ore and in large quantities will be found at no great depth below the surface.

The first canal hoat propelled hy steam, which ever made the trip from Buffalo to New York, arrived in five daye less time than by the usual horse power.

A Welcome to Agassiz

[The following, which was originally published in the *Bulletin*, is the most appropriate thing on the subject of any we have seen in verse since the advent of the illustrious scientist to our shores.]

Along six hundred miles of shore,
I heard one day the breakers roar;
A cheery sailor-like refrain
It sounded, far across the main,
And like the mists it seemed to rise,
Or tears of joy in friendly eyes,
Until, in one grand peroration,
It hurst in hearty salutation!

* * * * * * *

How the animal creation
Had a welcome jubilation,
And the sea-stars and *Echinus*
Said, "We hope that he will find us;"
And the whelks and periwinkles
Laughed their faces full of wrinkles,
And the crabs and lobsters, too,
Drummed on their shells a brisk tattoo,
And the *Octopus punctatus*
Joined the jolly jubilators,
While the festive trap-door spider
Flung his gate a little wider,
And the tree-toads in the willows,
And the fishes in the billows,
And the birds among the branches
Of the trees upon the ranches,
All in nnison were humming,
A welcome for the Master coming!

The "graybacks" off the Farrallones
Rushed round as if they'd break their bones;
The blackfish and the sleek porpoises,
Were making most exultant noises;
Out at Seal Rocks, the lions there,
Danced a fandango in the air,
Their flippers flapped and wagged their tails,
When they beheld the good ship's sails;
The grizzlies in the hills of Napa
Stood on their heads, they felt so happy;
And many a fossil "elefunt"
Felt sad because he couldn't grunt;
The gaiut clams, great *Schizothærus*,
Were glad to learn that he was near us;
And when the good ship crossed the bar,
They whispered to themselves, "huzza!"

* * * * * * * *

How the inanimate creation
Mingled in the jubilation!
The mountains staring at the sea
Were wondering what the muss could be;
But looking down upon the tide,
They felt an earthquske thrill of pride,
For floating lightly on the bay,
The "Hassler" like a sea-bird lay,
And then Mount Shasta said "God bless her!
She's brought us safe the great Professor!"
And from the mammoth trees, *Sequoia*,
A voice came, "We've been waiting for you
Some fifteen hundred years or more—
Why haven't you been here before?
The 'Old Maid' now will fall in love!"
Thus spake the Calaveras grove.

The glaciers, pausing on their way,
Said "We've been waiting many a day
And watching anxiously the passes,
To give a greeting to Agassiz."
"Ha!" spoke a smouldering volcano,
"Professor Agassiz? Bueno!"
While far and wide with each steaming geyser
Responded with shrill, "Aye! Aye! Sir."

* * * * * * * * *

How the people sang "Te Deum,"
When they heard who'd come to see 'em!
How everybody there and then
Felt in their hearts a glad Amen,
While e'en Joe Bowers from the grave
Rose up and gave his hand a wave,
And told the story o'er in full,
About the Calaveras skull;
And China John, in soles of wood,
Was heard to mutter, "belly good."

* * * * * * * * *

A welcome to the genial face,
The generous heart, the friendly hand,
From me and mine to thee and thine
A welcome to the land.
A welcome to the sunset land
From all its sone and all its daughters;
A welcome to its vine-clad hille,
Its fertile vales and healing watcrs;
A welcome from its mountain peaks,
A greeting from its wondrous valleys;
A welcomo to its mighty grovcs
And all their shaded alleys.
The golden gate of friendship swings wide open
when you come,
And says to you, and Madam too—"Now make
yourselves at home."

September, 1872. R. E. O. e.

The Omineca Mines.—A correspondent of a cotemporary writing from British Columbia, states that the mining districts of that section are not in a very flourishing condition. Most of the claims worked are only paying about $3.50 per day to the haud, which is little over cost of dirt. The Cariboo country has no prospect of large returns; Williams Creek and others seem to be thoroughly etripped of mineral wealth. The only hope of large returns is from Lightning Creek.

Arizona.—Geueral Crook is dealing summarily with the Apaches in Arizona, much to the satisfaction of the inhabitants of the Territory, and the great inconvenience of the Indians.

DOMESTIC ECONOMY.

Hints for Housekeepers.

As a general rule it is most economical to buy the best articles. The price is, of course, always a little higher, but a good article always spends best. It is a sacrifice of money to buy poor flour, meat, sugar, molasses, cheese, butter, lard, etc., to say nothing of the injurious effect upon the health.

Butter that is made in September and October is the best for winter use.

Lard should be hard and white; and that which is taken from a hog over a year old is the best.

Rich cheese feels soft under the pressure of the finger. That which is very strong is neither good nor healthy. To keep one that is cut, tie it up in a bag that will not admit flies, and hang in a cool dry place. If mould appear on it, wipe it off with a dry cloth.

The best rice is large and has a clear, fresh look. Old rice has sometimes little black insects inside the kernel. The small white sago called pearl sago, is the best. The large brown kind has an earthy taste. These articles and ground rice, tapioca, etc., should be kept covered.

To select nutmegs, pick them with a pin. If they are good, the oil will instantly spread around the puncture.

Keep coffee by itself, as its odor affects other articles.

Keep tea in a close chest or cannister.

Oranges and lemons keep best wrapped close in soft paper and laid in a drawer.

When a cask of molasses is bought, draw off a few quarts, else the fermentation produced by moving it will burst the cask.

Bread and cake should be kept in a tin box or stone jar.

Salt codfish should be kept in a dry place where the odor of it will not affect the air of the house. Fish-skin, for clearing coffee, should he washed, dried, cut small, and put in a paper bag.

Soft soap should be kept in a dry place in a cellar, aud should not be used till three months old.

Bar soap should he cut into pieces of convenient size, and left where it will become dry. It is as well to keep it for several weeks before using, it goes fast when it is new.

Cranberries will keep all winter in a firkin of water in a cellar.

Food for Old People.

Is your fat, good-natured grandfather living on fat beef and pork, white bread and butter, buckwheat cakes and molasses, rice and sugar, till he has lost all mental and physical energy, and desires to sit from morning till night, saying nothing, and caring for nothing? Change his diet. Give him fish, beefsteak, potatoes and unbolted wheat bread, or rye and Indian, with one-half or three-quarters of the carboniferous articles of his former diet, aud in one week he will cheer you again with his old jokes, and call for his hat and cane.

Is he lean, and cold, and restless, and irritable? Give him the fattest meats, the best butter and as much sugar and molasses as he desires, not taking away entirely food for the brain and muscle, but adapting them to his circumstances. Perhaps his brain has been overworked, and exhaustion and fitful action follow. If so, he needs some form of phosphatic food to which he has not been accustomed—such as oat meal porridge, or oat meal cake, with milk, or a diet of fish, and pearl barley or pea soup. Or perhaps his restlessness comes from inactivity of the bowels. If so he needs fruit, vegetables, unbolted wheat bread, etc., with care to keep his mind at ease, and to have only such company as is soothing and agreeable.

Or perhaps irritability arises from the use of too much meat aud other phosphatic food. If so, keep on a diet in which the phosphates are deficient, as rice, flour, bread, butter, etc., with other food adapted to their conditions and habits. But, that a regard to these different conditions and an adaptation of food to conform to them, will very much contribute to comfort and happiness in the declining years of life, there is not a shadow of doubt.

FRUIT SYRUPS, so called by courtesy, have been in constantly increasing demand of late years, the great growth of consumption being no doubt caused by the general introduction of soda fountains, not only into chemists' shops, where they have long held an established place, but into saloons, restaurants, and all places of popular resort. Pure syrup, of which very little is to be had at any price, is made hy mixing the pure juice of auy fruit, obtained hy pressure, with a syrup made of refined sugar and water. But sugar is costly, and so is fruit, and at this rate, with the many profits that must come out of it, enough syrup for a glass of soda could not be afforded with that refreshing heverage at 4d. a glass only. So the chemist is consulted, coloring-matter, dye-woods, and the like are used, aud to them are added extracts to produce the taste, and the result is "ice cold soda, with choice fruit syrups," which people drink by the quart, and then wonder that they do not feel well.

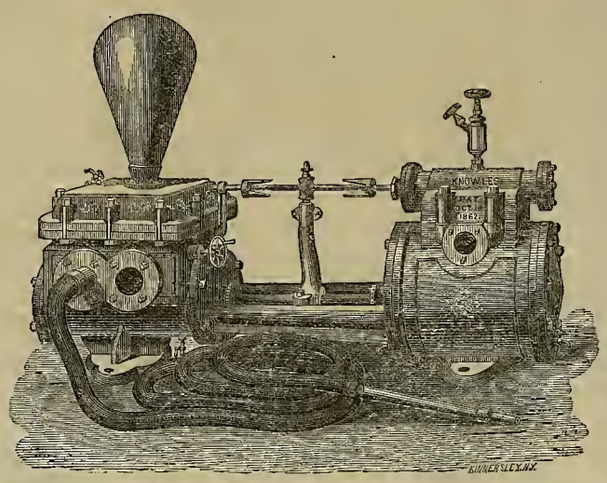
KNOWLES' PATENT STEAM PUMP.

Extract from Official Report of Mechanics' Institute Fair of San Francisco, 1871.

"In the foregoing trials it appears thst the most efficient Pump on exhibition is the KNOWLES. The workmanship on this Pump is also very good. We would therefore recommend that this Pump receive a Silver Medal. (Diploma awarded). Signed by the Committee:

G. W. DICKIE, H. B. ANGELL,
CHAS. R. STEIGER, W. EPPELSHEIMER, MELVILLE ATWOOD."

v113-swbp



It has no Cranks or Fly-Wheel, and has no dead points where it will stop, consequently it is always ready to start without using a starting-bar, and does not require hand-work to get it past the center. Will always start when the steam cylinder is filled with cold water of condensation.

The trial of Steam Pumps at the Eighth Industrial Fair in San Francisco, by a Committee of Five of the most thoroughly practical mechanics on this coast, showed the Knowles Pump to lose hut 11½ per cent., while others lost as high as 40 per cent., showing great difference in economy.

WE BUILD AND HAVE CONSTANTLY ON HAND

THE LARGEST STOCK OF PUMPS IN THE WORLD,

And for Every Conceivable Purpose.

A. L. FISH, Agent.

No 9 First Street, San Francisco, Cal.

P. S.—All kinds of new and second-hand Machines on hand. 3v24-eow-bp

THE TRUTH!

A. L. FISH, Agent Knowles' Steam Pump—Dear Sir: In answer to your inquiries, we state that the highest award for Steam Pumps at the Eighth or last Mechanics' Fair in San Francisco, was a *First Premium* and Diploma, awarded to the Knowles' Patent Steam Pump, as published in the Official List September 23d, 1871.

A. S. HALLIDIE, President Board of Managers.

W. H. WILLIAMS, Sec'y Board of Managers Eighth Industrial Exhibition, M. I.

BLAKE'S PATENT STEAM PUMP.

SALEM, Oregon, January 16th, 1872.

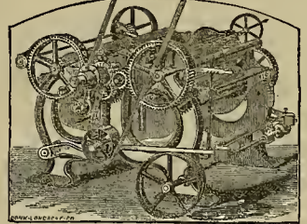
MESSRS. TREADWELL & CO., San Francisco—Gentlemen: In answer to your query regarding the working of the large Blake Steam Pump (20—12—24), our company purchased of you, we would say in all sincerity that the Pump *has exceeded our expectations.* It has been in use since the 27th of September, 1871, and has thus far given the most perfect satisfaction. It does its work with ease, does not get out of order, and requires but little or no attention to run it. It is *simple, durable,* and *perfect* in its construction. We have found it entirely sstisfactory, and just the Pump in every respect needed for our work.

Yours, respectfully, W. F. BOOTHY, Pres't Salem Water Works.

All sizes, for Mining, Tank and other purposes, for sale at TREADWELL & CO.'S Mschinery Depot, San Francisco, where may be seen the largest stock of **Mining, Mechanical** and **Mill,** and **Agricultural Machinery,** *Portable and Hoisting Engines, Steam Pumps, Hardware,* etc., to be found in the couatry. 3v25eow-bp

IMPROVED

DOUBLE SURFACER.



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MANUFACTURERS OF IMPROVED WOOD TOOLS

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All sizes, Horizontal or Vertical. **Hoisting Engines**

5½x12	COOK, RYMES & CO.'S, WITH VERTICAL
6x12	Boilers and heavy Iron Beds, with or without Trucks. For sale at Eastern prices,
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8x12	Francisco. 4v25 tf

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BOILER MAKERS

AND GENERAL MACHINISTS,

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For Shafting, Engines, Machines, Etc.

Save from 75 to 95 per cent. of oil used on shafting or machinery bearings. No better investment for the amount can be msde by any person having machinery or running shafting. They sre widely known for their reliability and economy. All the trouble of "oiling up" is avoided. There is no waste of oil, and no cans are needed. A single trial will prove their value. We will put them into any mill, and if not perfectly satisfactory, they may be returned at our expense, and the price will be refunded. We have a large stock on hsnd, of all sizes, adapted to all description of boxes. Send for Price List snd Oircular.

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THE

Risdon Iron and Locomotive Works

Corner Howard and Beale Streets,

Are prepsred to mske SHEET IRON AND ASPHALTUM PIPE, of any size and for sny pressure, and contract to lsy the same where wanted, guaranteeing a perfect working pipe with the least amount of material.

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☞ All kinds of Machinery made and repaired.

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A half interest in a valuable patent for an improved Circular Saw Head Block. The invention is now in use in a large number of mills on this coast, and can be profitably handled by an energetic man. Parties wishing to purchase County, State or mill rights, can do so by sddressing SAMUEL FORSYTHE, San Francisco, California. sel4-4w

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Ransome's Patents,

For which Commissioners for the International Exhibition of 1862 swarded the Prize Medal, and Gold Medal at the Mechanics' Institute Fair, 1871, of San Francisco.

The Pacific Stone Company call the especial attention of Architects, Engineers and the public in general, to the SUPERIOR QUALITY of the Stone now being manufactured by them in this city under the Ransome Patents. They make to order and keep in stock:

Building Fronts, Water Pipe,
Sinks, Monuments, Fountains,
Tiles, Copings for Walls,
Filters, etc., etc.,

Together with Ransome's Celebrated Free-Grit Grindstones, all of which we guarantee superior, and at a price far below that of hand-cut work.

The attention of private parties intending to build is respectfully solicited.

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ROCK DRILLS

AND

AIR COMPRESSORS.

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BURLEIGH ROCK DRILL CO.,

FITCHBURG, MASS.

25v24-6m

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STROUDSBURG, PA.,

Sole Manufacturers of

THE TANITE EMERY WHEEL,

And builders of Emery Grinders, Saw Gummers, Etc., Etc.

Emery Grinding Machines,

At $15, $30, $50, $75, and $110. DIAMOND TURNING TOOLS, $15 esch.

SOLID EMERY WHEELS,

From 40 cents to $113 esch.

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13v24-tf

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SAN FRANCISCO.

6v25-3m

$1,000 REWARD! For any case of Blind, Bleeding, Itching, or Ulcerated Piles that Dr. Bing's Pile Remedy fails to cure. It is prepared expressly to cure the Piles and nothing else. Sold by all Druggists. Price $1.00.

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Business Cards.

H. C. BENNETT,
STATISTICIAN.
Reports and estimates made about all departments of Production, Commerce, and Manufacture, of the Pacific Coast. 5v24-tf

RICHARD H. STRETCH, Civil Engineer,
City and County Surveyor.
Office—Room 16, City Hall. 11v24-3m

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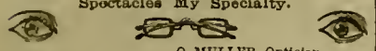
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BOOKBINDERS,
Paper Rulers and Blank Book Manufacturers,
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Manila Rope of all sizes. Also, Bale Rope and Whale Line constantly on hand. Tarred Manila Mining Ropes of any size and length manufactured to order.
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Particular attention paid to all kinds of Millwright Work, especially to the erection of FLOUR MILLS, DISTILLERIES, etc. Also, Cogging Mill and Steamship Wheels. Manufacturers of Nash's Cutts Grain Separators. Builders of Improved Hydraulic Wine Presses, Grape Stemmers and Crushers, etc. 15v23-6m

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SEAL ENGRAVER,
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Brass and Steel Stamps and Dies, 608 Sacramento street, San Francisco. Orders by express promptly attended to.

The Merchants' Exchange Bank
OF SAN FRANCISCO.
Capital, One Million Dollars.
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Molding, Turning, Carving, Etc.
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PIONEER
Meerschaum Pipe Manufacturer,

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GRAND, SQUARE AND UPRIGHT.
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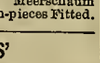
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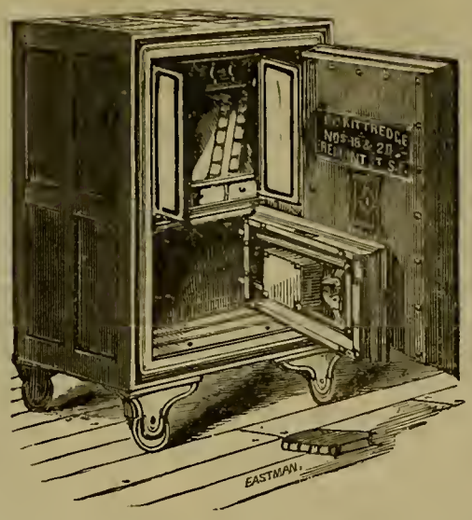

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A LARGE ASSORTMENT OF SAFES OF ALL KINDS CONSTANTLY ON HAND.
ALL KINDS OF HOUSE SMITH WORK, FIRE-PROOF SAFES, MONITOR SAFES, FIRE AND BURGLAR-PROOF SAFES.
JONATHAN KITTREDGE,
Nos. 18 and 20 Fremont Street, Near Market, SAN FRANCISCO.
Send for Descriptive Circulars and Price List. 7v4-1am5mbp

NOTICE.
THE PROPRIETORS OF THE
VULCAN IRON WORKS
HAVING RECENTLY REFITTED THEIR Shops with New Tools of late and modern improvements, have facilities unequalled by any establishment in San Francisco, for turning out with dispatch all classes of machinery used on the Pacific Coast.
The variety and completeness of our Patterns enable us to supply the general wants of the Pacific States and Territories at the lowest possible rates.
Office—135 and 137 Fremont St.,
BETWEEN HOWARD AND MISSION, S. F.
ARNOT, BIRCH & CO.,
Proprietors.
WM. H. BIRCH, Superintendent.
N. D. ARNOT, Manager.
12v25-tf

Notice is hereby given, that the copartnership heretofore existing between A. J. Severance, Charles W. Randall and J. Gus. Burt, under the firm name of "Severance, Holt & Co.," is this day dissolved by mutual consent. A. J. Severance, having purchased all the interest of his late partners, will continue the business of manufacturing and selling Diamond Drills, as before, under the style of A. J. Severance & Co.
Dated San Francisco, Nov. 24, 1871.
Office, 315 California street. A. J. SEVERANCE,
CHAS. H. RANDALL.
22-v23-tf J. GUS. BURT.

OFF FOR
THE DIAMOND FIELDS!
The New Golconda
DIAMOND MINING COMPANY
Has been incorporsted with 50,000 shares of $100 each, to send a party of eight or ten picked men, under an able and reliable Superintendent well known in mining circles,
Off Immediately to the Diamond Fields,
By the Denver route. The party is in possession of maps and reliable information as to the locality, not only of the Diamond Fields of Harpending & Co., but of
RICH GOLD AND SILVER MINES,
Also, in the adjacent mining regions of Arizona and New Mexico, some of which will be secured for this Company, without delay, whether valuable diamond mines can be obtained or not.
Twenty thousand shares of stock are set aside for a working capital, of which A LIMITED NUMBER ONLY will be offered for sale at present, at the very low rate of $2 per share, in order to insure a quick sale and a speedy departure of the party.
In order to insure the fidelity of those who form the prospecting party, each member is to receive 1,000 shares of the stock of the Company, and good wages at the end of six months' faithful service, besides their outfit and expenses from the start. An assayer and a physician, who are themselves experienced prospectors, are included in the party.
Articles of Agreement,
Protecting the rights of Stockholders from the acts of dishonest Directors, are embraced in the Certificate of Incorporation and cannot be evaded.
NO ASSESSMENT CAN BE LEVIED
Until the working capital is exhausted, and no stock can be issued (except to raise the fund to send the party to the fields) UNTIL CLAIMS ARE SECURED for the Company, and active operations commenced to develop them.
THIS COMPANY MEANS BUSINESS,
And will not lose a moment's time in getting its party on the ground.
The following well known citizens compose the Board of Directors:
GEORGE W. SMILEY, GEN. GEO. P. IHRIE,
H. H. FLAGG, SETH COOK,
J. C. BOWER, C. A. MATHIEU,
JAMES WILSON.
Subscriptions Received for Stock,
AT $2 PER SHARE,
At the office of the Company, under Donohoe, Kelly & Co.'s Bank, southeast corner of Sacramento & Montgomery streets.
JAMES WILSON, Secretary.
San Francisco, August 16, 1872. 8v25tf

Betts's Capsule Patents.
To prevent infringements, notice is hereby given, that *Betts's name is on every Capsule he makes for the principal merchants in England and France,*
thus enabling vendor, purchaser, and consumer not only to identify the genuineness of the capsule, but likewise the contents of the vessel to which it is applied.
The LORD CHANCELLOR, in his judgment, said that the capsules are not used merely for the purpose of the ornament, but that they are serviceable in protecting the wine from injury, and insuring its genuineness.
MANUFACTORIES:—1, WHARF-ROAD, CITY-ROAD, LONDON, AND BORDEAUX, FRANCE.

Agents Wanted for Zell's Encyclopedia.
Z.E. is a Dictionary of Language. It contains every word in the English language with its derivation and definition.
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Z.E. is a Medical Dictionary. It contains a description of diseases, remedies instruments, surgical operations, etc., etc.
Z.E. is a History of the World. It contains a description of the migration of races, the progress of nations, their customs, laws, religions, etc.
Z.E. is a complete Natural History. It describes all animals, birds, insects, fishes, and reptiles.
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Z.E. is well illustrated. It contains nearly three thousand engravings of persons, animals, plants, trees, flowers, machines, buildings, etc.
A specimen number, containing forty pages, will sent to any address on the receipt of ten cents. Sold only by subscription. Apply to
FRANCIS DEWING & CO.,
542 California street, San Francisco.
7v4-4m General Agents for Pacific Coast.

LEA & PERRINS'
CELEBRATED
Worcestershire Sauce.

Declared by Connoisseurs to be the only good SAUCE.
Caution Against Fraud.
The success of this most delicious and unrivalled Condiment having caused certain dealers to apply the name of "Worcestershire Sauce" to their own inferior compounds, the public is hereby informed that the only way to secure the genuine is to ASK FOR LEA & PERRINS' SAUCE, and see that their names are upon the wrapper, labels, stopper and bottle.
Some of the foreign markets having been supplied with a spurious Worcestershire sauce, upon the wrapper and labels of which the names of Lea and Perrins have been forged, L. and P. give notice that they have furnished their correspondents with power of attorney to take instant proceedings against manufacturers and vendors of such, or any other imitations by which their right may be infringed.
Ask for LEA & PERRINS' Sauce, and see name on wrapper, label, bottle and stopper.
Wholesale and for export by the Proprietors, Worcester; Crosse & Blackwell, London, &c., &c., and by Grocers and Oilmen universally. 15v24-tf

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BREECH-LOADING
Sporting, Hunting, and Target Rifles.
Same system as the "Remington" Celebrated Military Rifle, of which over half a million have been sold. Its simplicity unsurpassed. For strength and durability unequalled. In accuracy unrivalled. In range, penetration, and ease of manipulation, without comparison.
The "Sportsman's" Delight, the "Hunter's" Favorite, the "Target-Shooter's" Pride. Also
REVOLVERS FOR HOUSE USE.
In these days of thieves and Burglaries, every householder should have a revolver for home protection.
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Every gentleman should have one for protection against dogs and rowdies, and for field use.
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Froiseth's New Sectional, Topographical and Mineral
MAP OF UTAH.
SIZE, 40 BY 56 INCHES; SCALE, 8 MILES TO AN INCH.
Handsomely engraved on stone, colored in counties, and mounted on cloth, showing the Counties, Towns, Rivers, Lakes, Railroads, Mines and Mining Districts throughout the Territory, and all GOVERNMENT SURVEYS made to date. Price, mounted, $8; Pocket form, $5. Mailed to any part of the United States, on receipt of price, by A. L. BANCROFT & CO., 721 Market street, San Francisco, Cal., or by B. A. M. FROISETH, Publisher, Salt Lake City, Utah. 10v25-tf

ALL KINDS OF
Office Desks and Book Cases
On hand and Manufactured to Order, by
JOHNSON & BEST,
No. 311 Pine street, opposite the Pacific Bank,
18v24-6m SAN FRANCISCO.

J. M. STOCKMAN,
Manufacturer of
PATTERNS AND MODELS,
(Over W. T. Garratt's Brass Foundry).
N. W. corner Natoma and Fremont streets, S. F. Entrance on Natoma street. 6v23-3m

THEODORE KALLENBERG,
MACHINIST,
and Maker of Models for Inventors. All kinds of Dies Stamps and Punches made. Also, all kinds of Small Gears Cut.
Repairing done on very Reasonable Terms and in the best manner. No. 32 Fremont street, S. F. 19v23-3m

Beginning of a New Industry

It is necessary, after each rainfall in the South, to go over the cotton fields with a hoe. Thie drawhack which is one of the most costly and tedious iteme the Southern cotton-planter has to contend with, is not enconntered in the growth of cotton in California. It is not planted here nntil the rainy season is over, and is picked hefore the first fall rains descend. The ground need only to he worked twice in this State, and, instead of the tedious hoe and expeusive attendant lahor, plowe can he used.

The certain ahsence of rain here during the picking eeason, renders the expensive process requisite in the South, and known as "moating," unnecessary. This process consists in the eeparation of the rain-stained cotton from the pure. There are large tracts of land in the southeastern counties of the State (much of it etill heing puhlic and therefore open to preemption), which, if planted in cotton late in April, will yield 450 pounds to the acre, no irrigation heing requisite other than that whicb the clonds afford in ordinary seasons of rainfall. It is stated that one plowing will he ample, hut we presume that point is still open to some douht. Seven and a balf cents per pound is said to he a liheral estimate of the cost of raising, picking and haling cotton in Kern Valley, after the ground has heen ouce thoroughly broken, while cotton cannot he produced in *any* portion of the South for less than twelve cents per pound.

We Must Manufacture.

Specimens of California cotton, of this season's growth, from Dixon seeds, have heen exhibited here within a few days. Although it was planted three weeks later than it should have heen, and its culture and growth were attended with the usual drawhacks incident to all new crops, the specimens received are unusually white and silky, and the fihre long and exceedingly fino.

And, now that the success of thie new staple has shown that our soil ie wonderfully suited to ite growth, while the profits attending its production are larger perhaps than those from any other agricultural staple we produce, the question suggests itself:

What are we going to do ahout it? Is the most of our cotton, like the most of our wool, to he sent ahroad for manufacture, to support mechanics and merchants who are thousands of miles away from us, and to aid in supporting ringe which put tonnage up to extravagant rates? Or is it to be manufactured bere, thns affording employment to hundreds or thousands of home operatives? The growth of the cotton here is only one, and the crudest of the advantages whicb may he derived from that staple.

Water-power ie ahundant contiguous to the sections where it ie grown, and should he utilized hy the establishment of cotton mills. The price of fuel in this city is not near so high either, hut that other factories—like the Oakland hagging establishment — may he set in operation, now that we are sure of an ahundance of home-grown cotton.

Hundreds of now idle hoys and girls could most profitahly for themselvee, and witb equal profit to the community, in hoth a pecuniary and moral sense, he employed in cotton factoriee, which are the safety-valve for the children of the poorer clasees in Massachusetts and Rhode Island.

We urgently call the attention of men of means to these facts. Employment for hoys and girls must ho found here, and can only safely and eurely he found in manufacturing enterprises. It is therefore the duty of every one intereeted in our moral and material progress to aid in the establishment of these mnch more generally than they have heretofore done. *Bulletin.*

A Useful Company.—The San Francisco Transfer Company, No. 6 New Montgomery street, in this city, was organized, as its name indicates, for the purpose of carrying freight and haggage to and from different parts of the city, connecting with all the steamhoats and railroads, for tho convenience of the traveling community. The enterprise was commenced in a small way upwards of seven years ago hy Mr. M. G. Kennedy, the present President of the company. It was next run hy Kennedy & Co., and then hy Kennedy, Long & Co. The husiness in the meanwhile has heen steadily inoreasing, and some two yeare since assumed its present name. It bas now hecome one of the necessities of our city and coast, having sixteen teams at its command, and employing a large numher of men, including agents on trains and steamers to ensure prompt delivery of haggage. Travelers overland are heginning to urge the company to put on omnibus linee, as in New York and other Eastern cities. This no douht will he eventually done. Why do not onr railroad companies insist on this movement? It can be made to their interest, as well as a great convenience to the traveling public.

Woodward's Gardens.—A large salt water aquarium is heing put up at Woodward's Garin this city for the purpose of keeping specimens peculiar to the Pacific Coast. There will he more for marine plants, shells, corals, etc.

New Incorporations.

Lone Star M. Co.—Sept 20. Location: Highland District, Lincoln county, Nevada. Capital stock, $3,000,000. Trustees—Joseph M. McGuire, R. H. Rodgers, B. S. Coffman, J. S. Earnest and Daniel McLeod.

Siegfried Metal Co.—Sept. 20. Object: to manufacture and deal in rights ohtained under the Siegfried Patent. Capital stock, $200,000. The Trustee are John O. Hanscom, W. W. Hanscom and R. N. Van Brunt.

Nevada Sona Co.—Sept. 21. Object: Location of soda springs and selling soda and mineral waters in the State of Nevada. Capital, $500,000. Trustees—E. H. Sharp, James Duffy and Cornelius P. Rohinson.

Red Mountain M. Co.—Sept. 21. Location: Idaho Territory. Capital, $1,000,000. Trustees—J. M. Wilson, A. G. Stiles, Martin Jones, Carl Davis and A. Hermone.

Cameron G. M. Co.—Sept. 23. Location: Enterprise Miniug District, Gilpin county, Colorado Territory. Capital, $1,000,000. Trustees—Alexander Cameron, Samuel D. Kreider, J. Clement Uhler, Alvin W. Whitney and Wm. H. Ashton.

La Porte Gravel M. & Water Co.—Sept. 23. Location: Plumas county. Capital $1,000,000. Trustees—Thomas Bell, J. W. Gashwiler, J. D. Fry, Robert F. Morrow and Geo. W. Beaver.

Ione Copper M. Co.—Sept. 23. Location: State of California. Capital, $2,500,000. Trustees—S. Heydenfeldt, James Morgan, Samuel Hart, David Goodman and Leander Leavitt.

Table Mountain Alpha M. Co.—Sept. 23. Location: Tuolumne county. Capital, $2,000,000. Trustees—Thomas H. Holt, Seixas Solomon, W. N. Harris, W. L. Ustick, J. Y. Dixon and Algernon Smith.

Manhattan Marble Co.—Sept. 24. Object: Manufacturing and vending marhle. Capital, $500,000. Trustees—N. W. Spaulding, George C. Potter, Chas. W. Stevens, Isaac E. Davis, Abner Dohle, Joseph S. Emery, Edward P. Flint, Albert P. Brayton, William Holden and James Gamhle.

Amender Certificate of the Victoria and Imperial T. and M. Co.—Sept. 24. Location: Little Cottonwood District, Utah Territory, Capital, $6,000,000. Trustees—J. B. Biddleman, S. A. Raymond, C. A. Washhurn, R. A. Coburn aud N. G. Livermore.

Hope Consolidated. M. Co.—Sept. 24. Location: Camp Floyd District, Lewistown, Tooele, Utah Territory. Capital, $3,200,000. Trustees—W. R. Wheaton, J. D. Fry, George W. Beaver Jos. S. Paxton and A. G. Ahell.

Stebins' Hydraulic Elevator Manufacturing Co.—Sept. 25. Object: To manufacture and sell Stehins' hydraulic elevator and other machinery, under patents owned hy said Company. Capital stock, $500,000, in 5,000 shares of $100 each. Truetees—Timothy Stebins, Anthony Rosenfield and Rohert Skinner.

Pacific Canal and Flume Co. — Sept. 25. Object: The construction and maintenance of a canal from a point on the Garzoes Creek, west from the Mount Diahlo hase, to tide-water in the Pacific Ocean, near Pigeon Point landing, San Mateo Co. Capital stock, $100,000, in 1,000 shares of $100 each. Trustees—John W. Pearson, P. McLaren and Wm. A. Bolinger.

The Empire M. Co. filed on the 21st inst. a certificate of increase of the capital stock from $500,000 in 2,000 shares of $250 each, to $2,000,000, in 20,000 shares of $100 each.

Systematizing Mental Labor.—As a marvelous instance of what one man may achieve by doing systematically and thoroughly whatever he undertakes, we can not do better than consider the life of Alexander von Humboldt. There was no part of the world he had not visited, and he had been nowhere without acquiring the most exact knowledge of the country, its geology, its animal life, its botany, all its physical characteristics, as well as the language, habits, customs, laws, religion, and history of its people. He led this life till he was ninety years of age, and even then no fact, in any part of the world, that had any bearing on scientific truth, escaped his notice. His mind was a museum, where all the knowledge that has been brought into the world was placed in order, carefully guarded, and always ready for use. We are not wrong in attributing the boundless learning and prodigious memory of this great man to his habit of systematizing his mental labor, and to his power of self-concentration, and to his belief in the wisdom of God.

Our Fruitful Lann.—There was unusual activity in the wheat husiness yesterday, says the *Chronicle* of the 25th, the immenee receipts requiring a large force of employés to transfer them from tbe different vessels and cars whicb came in heavily loaded. At the No. 1 Mission Bay Warebouse, near Long Bridge, owned hy the Central Pacific Railroad Company, and leased hy Mr. I. Friedlander, there were five schooners, three barges, two small steamers and twenty-two care unloaded of tbeir valuable freight. The care were run into the warehouse, and the balance was placed on the wharf to await removal. There were also forty car loads of wheat sent off to another warehouee. One of the harges, the "Yolo," had on the great amount of 11,000 sacks, which, allowing 120 pounds to the sack, would give 1,160 tons, the largest cargo yet reported.

ONE DOLLAR A YEAR
— FOR THE —
PACIFIC COAST
Mercantile Director.

Thie ie a new 16-page monthly newspaper, of special information for wholesale and retail tradesmen. It will also contain reading of interest and importance to all business and professional men on the coast.

OUR TABLE OF CONTENTS

Will comprise Full Prices Current and Monthly Review of tbe Wholesale Markets; Diagrams of tbe Fluctuations of the Produce Markets; Rates of Freight and Passenger Fares—corrected monthly; Illustrations and Sketches of Prominent Men and Buildings; Editorials on Manufacturing and Industrial Progress; Departments containing appropriate reading matter and reviewe for various branches of trade, including "Grocery and Provision;" "Dry Goods;" "Trades and Manufactures," etc., etc.

Our first issue for May consists of 24 pages, embracing FORTY-FIVE COLUMNS of important reading matter—mostly original and by first-class writers. Sample copies, post paid, 10 cts. Yearly subscription, in advance, $1. Subscribers to the Mining and Scientific Press or the Pacific Rural Press will be supplied at half price.

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Mining and Other Companies.

Owing to the time necessary to mail the present large edition of the M. & S. Press, we are obliged to go to press on Thursday evening—which is the very latest hour we can receive advertisements.

Auburn Gold Mining Company.—Location

of Works, Auburn, Placer County, California.

Notice is hereby given that at a meeting of the Trustees of said Company, held on the 13th day of September, 1872, an assessment of twenty-five cents per share was levied on the capital stock of said company, payable immediately, in gold coin of the United States, to the Secretary, at his office. No. 7 Steveneon Building, in San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Monday, October 14th, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, November 6th, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

GEO. W. DIXON, Secretary.

No. 7 Steveneon Building, corner of Montgomery and California streets, San Francisco, California. se21-4w

Beckwith Mining Company, Ely Mining

District, Lincoln County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees, of said Company, held on the 19th day of August, 1872, an assessment of Twenty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the Office of the Company, Room 5, No. 302 Montgomery street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Saturday, the 28th day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the 23d day of October, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery St., San Francisco.

Cottonwood Creek Gold Mining Company

Location of Works, Shasta and Tehama Counties, State of California

Notice.—There are delinquent upon the following described stock, on account of assessment, No. 1, levied on the nineteenth (19th) day of August A. D., 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Orittenden, J L	20	1500	$105 00
King, J L	31	100	7 00
Kenney, C A, Trustee	37	200	14 00
Kenney, C A, Trustee.	38	200	14 00
Kenney, C A, Trustee	39	100	7 00
Van Wyck, S M	14	1000	70 00
Van Wyck, S M	15	1000	70 00
Van Wyck, S M	15	1000	70 00
Van Wyck, S M	17	500	35 00
Van Wyck, S M	18	500	35 00
Van Wyck, S M	19	416	29 12
Van Wyck, S M	44	75	5 25
Welch, Wm	3	100	7 00
Welch, Wm	4	1000	70 00
Welch, Wm	5	1000	70 00
Welch, Wm	5	1000	70 00
Welch, Wm	7	1000	70 00
Welch, Wm	10	100	7 00
Welch, Wm	11	100	7 00
Welch, Wm	12	117	8 19
Welch, Wm	41	975	68 25

And in accordance with law, and an order of the Board of Trustees, made on the nineteenth (19th) day of August, A. D. 1872, so many shares of each parcel of said stock as may be necessary, will be sold at the office of the Company, No. 411 California street, San Francisco, California, on Tuesday, the fifteenth (15th) day of October, A. D. 1872, at the hour of one (1) o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

JOS. L. KING, Secretary.

Office, No. 411 California strcet, San Francisco, California. se28-3w

Ivanhoe Silver Mining Company—Location

of works, Ely District, Lincoln County, Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 10th day of August, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
E A Richardson, Trustee	1	100	$50 00
E A Richardson, Trustee	7	100	50 00
E A Richardson, Trustee	8	100	50 00
E A Richardson, Trustee	9	100	50 00
E A Richardson, Trustee	10	100	50 00
E A Richardson, Trustee	13	100	50 00
E A Richardson, Trustee	32	50	25 00
G H Hunt, Trustee	55	10	5 00
W W Gollin, Trustee	38	50	25 00
Geo D Roberts	68	947	473 50
Thos Bennett	71	947	473 50
W Norris, Trustee	83	1000	500 00

And in accordance with law, and an order of the Board of Trustees, made on the 10th day of August, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, No. 331 Montgomery street, San Francisco, California, on the 8th day of October, 1872, at the hour of 1 o'clock P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

DANIEL BUCK, Secretary.

Office, 331 Montgomery street, San Francisco, California. se14-2w

Louise Mining Company.—Location of

Works, Ely Mining District, Lincoln County, Nevada.

Notice is hereby given that at a meeting of the Board of Trustees of said Company, held on the 14th day of September, 1872, an assessment of fifty cents (50 cents) per share was levied upon the capital stock of said company, payable immediately, in U. S gold coin, to the Secretary, at the office of the company, room 5, No. 302 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Saturday, the 28th day of September, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 9th day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees. WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery street, San Francisco, California. se21-4w

Marcelina Silver Mining Company—Location of works, Eureka Mining District, Lander County, Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 24th day of July, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
P P Cunningham	23	100	$30 00
Chas F Eaton	71	500	150 00
Chas E Elliot, Trustee	50	552	168 60
C W Kellogg	47	521	156 30
O W Kellogg	64	1042	312 60
Chas S Neal, Trustee	57	1000	300 00
Chas S Neal, Trustee	70	50	15 00
J H Nelson	63	500	150 00

And in accordance with law, and an order of the Board of Trustees, made on the 24th day of July, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, and unless payment shall be made before, will be sold on the 30th day of September, 1872, at the hour of 3 o'clock P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

CHAS. E. ELLIOT, Secretary.

Office, room 21, No. 419 California street, San Francisco, California. se14-3w

Mina Rica Mining Company—Location of

works, Auburn Mining District, Placer County, State of California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment (No. 7) levied on the sixth day of August, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No Shares.	Amount.
Berchert, John S	16	375	$ 75 00
Slosson, R D	7	550	110 00

And in accordance with law, and an order of the Board of Trustees, made on the sixth day of August, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, No. 320 California street, room No. 5, San Francisco, California, on the 30th day of September, 1872, at the hour of two o'clock P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

GEO. R. SPINNEY, Secretary.

Office, No. 320 California street, room No. 5, San Francisco, California. se14-3w

Nevada Land and Mining Company—Location of works, Spruce Mountain Mining District, Elko County, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the eighteenth day of July, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
I Symons	unissued.	2199	$175 92

And in accordance with law, and an order of the Board of Trustees, made on the 18th day of July, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction on the 30th day of September, 1872, at the hour of 2 o'clock P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery street, San Francisco, California. se14-3w

Ohio Consolidated Gold Mining Company of West Point, Calaveras County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 24th day of September, 1872, an assessment of Ten Cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No. 302 Montgomery street, Room No. 1. Any stock upon which said assessment shall remain unpaid on the second day of November, A. D. 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 23d day of November, A. D. 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

W. AUGUSTUS KNAPP, Secretary.

Office, 432 Montgomery street, over Donahue & Kelly's Bank se24-4t

Pennsylvania Mining and Milling Company.

Location of works, Schell Creek District, White Pine County, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the ninth day of August, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Thos J Patten	13	500	$ 600 00
Thos J Patten, Trustee	5	3,000	3,600 00
H Menthino	6	200	240 00
Rose Woodworth	7	200	240 00
Thos T Cook, Trustee	18	1,000	1,200 00
J M Livingston, Trustee	24	500	600 00

And in accordance with law, and an order of the Board of Trustees, made on the 9th day of August, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, room No. 14, No. 331 Montgomery street, San Francisco, California, on the 5th day of October, 1872, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

DANIEL BUCK, Secretary.

Office, 331 Nontgomery street, San Francisco, California. se14-2w

Pocahontas Gold Mining Company—Location of Works, Mud Springs, El Dorado County, California.

NOTICE is hereby given that at a meeting of the Board of Trustees of said Company, held on the 17th day of September, 1872, an assessment of fifty (50) cents per share was levied upon the capital stock of said company, payable immediately, in United States gold coin, to the Secretary, at the office of the company, room 4, No. 401 California street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Thursday, the 24th day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before will be sold on Monday, the 18th day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

D. A. JENNINGS, Secretary.

Office—Room 4, No. 401, California street, San Francisco, California. se21-4w

Quail Hill Mining and Water Company—Location of works, Calaveras county, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 22d day of August, 1872, an assessment of five dollars per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the company, No. 409 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the 2d day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Thursday, the 24th day of October, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. F. CRONISE, Secretary.

Office—409 California street, San Francisco, Cal. au31

Red Cloud Silver Mining Company—Location of Works, Ely District, Lincoln County, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 24th day of August, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Frank Cisler	2	100	$25 00
Frank Cisler	4	100	25 00
Frank Cisler	8	100	25 00
Frank Cisler	10	100	25 00
Frank Cisler	14	100	25 00
Frank Cisler	15	100	25 00
Frank Cisler	19	100	25 00
Frank Cisler	22	50	12 50
Frank Cisler	25	50	12 50
Frank Cisler	26	25	6 25
Frank Cisler	27	25	6 25
Frank Cisler	29	25	6 25
Frank Cisler	60	10	2 50
Frank Cisler	61	10	2 50
Frank Cisler	62	10	2 50
Frank Cisler	63	10	2 50
Frank Cisler	64	10	2 50
Frank Cisler	65	10	2 50
Frank Cisler	66	10	2 50
Frank Cisler	67	10	2 50
Frank Cisler	68	10	2 60
Frank Cisler	69	10	2 50
Frank Cisler	70	20	5 00
Frank Cisler	71	20	5 00
Frank Cisler	72	20	5 00
Frank Cisler	73	20	5 00
Frank Cisler	74	20	5 00
Frank Cisler	75	20	5 00
Frank Cisler	76	20	5 00
Frank Cisler	77	20	5 00
Frank Cisler	78	20	5 00
Frank Cisler	79	20	5 00
Frank Cisler	80	50	12 50
Frank Cisler	81	50	12 50
Frank Cisler	82	50	12 50
Martin & Lane	35	50	12 50
Martin & Lane	36	50	12 50
Martin & Lane	37	50	12 50
Martin & Lane	38	50	12 50
Martin & Lane	39	50	12 50
Martin & Lane	40	50	12 50
Martin & Lane	41	50	12 50
Martin & Lane	42	50	12 50
Martin & Lane	43	50	12 50
Martin & Lane	44	50	12 50
J C Lennon	55	50	12 50
J C Lennon	56	50	12 50
J C Lennor	57	50	12 50
J C Lennon	58	50	12 00
R R Givens, trustee	59	50	12 50
C X Hobbs	84	500	125 00
E Skerritt, trustee	85	50	12 50
E Skerritt, trustee	87	100	25 00
E Skerritt, trustee	208	130	32 50
Baldwin Gardiner, trustee	156	10	2 50
Baldwin Gardiner, trustee	163	500	125 00
Baldwin Gardiner, trustee	164	500	125 00
Baldwin Gardiner, trustee	165	500	125 00
Baldwin Gardiner, trustee	166	500	125 00
Baldwin Gardiner, trustee	167	500	125 00
Baldwin Gardiner, trustee	168	500	125 00
Baldwin Gardiner, trustee	169	500	125 00
Baldwin Gardiner, trustee	170	500	125 00
Baldwin Gardiner, trustee	171	500	125 00
Baldwin Gardiner, trustee	172	500	125 00
Baldwin Gardiner, trustee	173	500	125 00
Baldwin Gardiner, trustee	179	200	50 00
Baldwin Gardiner, trustee	180	200	50 00
Baldwin Gardiner, trustee	181	200	50 00
Baldwin Gardiner, trustee	182	200	50 00
Baldwin Gardiner, trustee	183	200	50 00
Baldwin Gardiner, trustee	185	200	50 00
Baldwin Gardiner, trustee	186	200	50 00
Baldwin Gardiner, trustee	187	200	50 00
Baldwin Gardiner, trustee	188	200	50 00
Baldwin Gardiner, trustee	189	100	25 00
Baldwin Gardiner, trustee	190	100	25 00
Baldwin Gardiner, trustee	191	100	25 00
Baldwin Gardiner, trustee	192	100	25 00
Baldwin Gardiner, trustee	195	100	25 00
Baldwin Gardiner, trustee	197	100	25 00
Baldwin Gardiner, trustee	198	100	25 00
Baldwin Gardiner, trustee	199	100	25 00
Baldwin Gardiner, trustee	200	100	25 00
Baldwin Gardiner, trustee	201	100	25 00
Baldwin Gardiner, trustee	202	100	25 00
Baldwin Gardiner, trustee	203	100	25 00
Baldwin Gardiner, trustee	204	100	25 00
Baldwin Gardiner, trustee	205	50	12 50
Baldwin Gardiner, trustee	206	25	6 25
W R T Pocock, trustee	210	50	12 50
J P Cavallier, trustee	213	50	12 50

And in accordance with law, and an order of the Board of Trustees, made on the 24th day of August, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction at the office of the Company, room 14, No. 331 Montgomery street, San Francisco, Cal., on the 15th day of October, 1872, at the hour of 1 o'clock P. M., of said day, to pay said delinquent assessment therson, together with costs of advertising and expenses of sale.

EDMUND F. CLARK, Secrstary.

Office, No. 14 Stevenson Building, No. 331 Montgomery street, San Francisco. se28-3w

Silver Sprout Mining Company—Location of works and mines, Kearsarge District, Inyo county, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said company, held on the 26th day of August, 1872, an assessment of fifty cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary at the office of the company, No. 318 California street, S. F.

Any stock upon which said assessment shall remain unpaid on the eighth day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the eighth day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. B. WINGARD, Secretary.

Office—Room No. 1, second floor, No. 318 California St., S. F. au31-4t

Silver Wave Mining Company—Location of works, White Pine Mining District, White Pine County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the Twenty-first day of September, 1872, an assessment of one dollar per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary of said Company, at the Company's office, 418 California street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Saturday, the Twenty-sixth (26th) day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the Twenty-fifth (25th) day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

se28-4t J. W. CLARK, Secretary.

Office, 418 California street, San Francisco, Cal.

Tellurium Gold and Silver Mining Company, Pine Grove District, Amador County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 3d day of September, 1872, an assessment (No 17) of one dollar ($1) per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, N. E. Corner Clay and Kearny streets, in the City of San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 5th day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 26th day of October, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. SOERY, Secretary.

Office—Northeast corner Clay and Kearny streets, San Francisco, California. sep7

Victoria and Imperial Tunnel and Mining Company—Location of works, Little Cottonwood, Utah Territory.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 14th day of August, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Bidleman, J B	57	100	$10 00
Bidleman, J B	68	150	10 00
Bidleman, J B	69	50	5 00
Bidleman, H J	63	2000	200 00
Bidleman, H J	64	1000	100 00
Bidleman, H J	65	500	50 00
Bidleman, H J	66	250	25 00
Coburn, S A	8	50	500 00
Coburn, S A	14	50	5 00
Coburn, S A	15	100	10 00
Coburn, S A	16	100	10 00
Coburn, S A	17	100	10 00
Coburn, S A	18	100	10 00
Coburn, S A	19	100	10 00
Livermore, H G	41	2000	200 00
Raymond, Henry	44	250	25 00
Raymond, Henry	45	250	25 00
Raymond, Henry	46	250	25 00
Raymond, Henry	47	250	25 00
Raymond, Henry	48	250	25 00
Raymond, Henry	49	250	25 00
Raymond, Henry	50	250	25 00
Raymond, Henry	51	250	25 00
Tilden, Thomas	52	200	20 00
Tilden, Thomas	53	200	20 00
Tilden, Thomas	54	200	20 00
Tilden, Thomas	55	200	20 00
Tilden, Thomas	56	200	20 00
Tilden, Thomas	57	200	20 00
Tilden, Thomas	58	200	20 00
Tilden, Thomas	59	200	20 00
Tilden, Thomas	60	200	20 00
Tilden, Thomas	61	200	20 00
Washburn, C A	20	500	50 00
Washburn, C A	21	500	50 00
Washburn, C A	22	500	50 00
Washburn, C A	23	100	10 00
Washburn, C A	26	50	5 00
Washburn, C A	27	50	5 00
Washburn, C A	28	50	5 00
Washburn, C A	29	25	2 50
Washburn, C A	30	25	2 50
Washburn, C A	31	25	2 50
Washburn, C A	32	25	2 50
Virgin, B J (unissued)		3050	457 50

And in accordance with law, and an order of the Board of Trustees, made on the 14th day of August, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the company, Room 5, No. 302 Montgomery street, San Francisco, Cal., on Saturday, the 12th day of October, 1872, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

WM. H. WATSON, Secretary.

Office—Room 5, No. 302 Montgomery street, San Francisco, Cal. se21-3t

Winnemucca Chief Silver Mining Company—Location of Works, Humboldt County, State of Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 19th day of June, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
John Robins	159	100	$15 00
John Robins	160	100	15 00
John Robins	161	100	15 00
John Robins	162	100	15 00
John Robins	163	100	15 00
John Robins	164	100	15 00
John Robins	165	100	15 00
John Robins	166	100	15 00
John Robins	167	100	15 00
John Robins	168	100	15 00
John Robins	176	100	15 00
John Robins	177	100	15 00
John Robins	178	100	15 00
John Robins	179	50	7 50
John Robins	209	500	75 00
John Robins, Trustee	9	500	75 00
John Robins, Trustee	19	500	75 00
John Robins, Trustee	20	500	75 00
John Robins, Trustee	21	100	15 00
John Robins, Trustee	22	100	15 00
John Robins, Trustee	23	100	15 00
John Robins, Trustee	24	100	15 00
John Robins, Trustee	25	50	7 50
John Robins, Trustee	26	50	7 50
John Robins, Trustee	27	50	7 50
T F Cronise, Trustee	111	500	75 00
T F Cronise, Trustee	112	500	75 00
T F Cronise, Trustee	113	200	30 00
T F Cronise, Trustee	114	200	30 00
T F Croniso, Trustee	115	200	30 00
T F Cronise, Trustee	116	200	30 00
T F Cronise, Trustee	117	200	30 00
T F Cronise, Trustee	118	100	15 00
T F Cronise, Trustee	119	100	15 00
T F Cronise, Trustee	120	100	15 00
T F Cronise, Trustee	121	100	15 00
T F Cronise, Trustee	122	100	15 00
T F Cronise, Trustee	123	100	15 00
T F Cronise, Trustee	124	100	15 00
T F Cronise, Trustee	125	100	15 00
T F Cronise, Trustee	126	100	15 00
T F Cronise, Trustee	127	100	15 00
T F Cronise, Trustee	128	100	15 00
T F Croniso, Trustee	129	100	15 00
T F Cronise, Trustee	130	100	15 00
T F Cronise, Trustee	131	100	15 00
T F Cronise, Trustee	132	100	15 00
T F Cronise, Trustee	133	100	15 00
T F Cronise, Trustee	134	100	15 00
T F Cronise, Trustee	135	100	15 00
T F Cronise, Trustee	136	100	15 00
T F Cronise, Trustee	137	100	15 00
T F Cronise, Trustee	138	50	7 50
T F Cronise, Trustee	139	50	7 50
T F Cronise, Trustee	140	50	7 50
T F Cronise, Trustee	141	50	7 50
T F Cronise, Trustee	142	50	7 50
T F Cronise, Trustee	143	50	7 50
T F Cronise, Trustee	144	50	7 50
T F Cronise, Trustee	145	50	7 50
T F Crnnise, Trustee	146	50	7 50
T F Cronise, Trustee	147	50	7 50
T F Cronise, Trustee	148	50	7 50
T F Cronise, Trustee	149	50	7 50
T F Cronise, Trustee	150	50	7 50
T F Cronise, Trustee	151	50	7 50
T F Cronise, Trustee	152	50	7 50
T F Cronise, Trustee	153	50	7 50
T F Cronise, Trustee	154	50	7 50
T F Cronise, Trustee	155	50	7 50
T F Cronise, Trustee	156	50	7 50
T F Cronise, Trustee	157	50	7 50
T F Cronise, Trustee	172	100	15 00
T F Cronise, Trustee	173	100	15 00
A C Peachy	52	3000	450 00
A C Peacby	53	1000	150 00
J H Crossman	74	200	30 00
J D Minor	11	100	15 00
M S Thompson	12	100	15 00
J J Lynn	13	100	15 00
C W Cartor	14	100	15 00
M S Bonnifield	15	50	7 50
M S Bonnifield	17	50	7 50
T J Poulterer, Trustee	28	500	75 00
T J Poulterer, Trustee	29	500	75 00
T J Poulterer, Trustee	30	500	75 00
T J Poulterer, Trustee	32	500	75 00
T J Poulterer, Trustee	33	500	75 00
T J Poulterer, Trustee	34	500	75 00
T J Poulterer, Trustee	35	500	75 00
T J Poulterer, Trustee	36	500	75 00
T J Poulterer, Trustee	37	500	75 00
T J Poulterer, Trustee	38	500	75 00
T J Poulterer, Trustee	39	500	75 00
T J Poulterer, Trustee	40	500	75 00
T J Poulterer, Trustee	41	500	75 00
T J Poulterer, Trustee	42	500	75 00
T J Poulterer, Trustee	43	500	75 00
T J Poulterer, Trustee	44	500	75 00
T J Poulterer, Trustee	46	500	75 00
T J Poulterer, Trustee	47	500	75 00
T J Poulterer, Trustee	48	500	75 00
T J Poulterer, Trustee	49	500	75 00
T J Poulterer, Trustee	50	500	75 00
T J Poulterer, Trustee	51	500	75 00
T J Poulterer, Trustee	75	500	75 00
T J Poulterer, Trustee	76	200	30 00
T J Poulterer, Trustee	77	200	30 00
T J Poulterer, Trustee	78	100	15 00
T J Poulterer, Trustee	79	100	15 00
T J Poulterer, Trustee	80	100	15 00
T J Poulterer, Trustee	81	100	15 00
T J Poulterer, Trustee	82	100	15 00
T J Poulterer, Trustee	83	100	15 00
T J Poulterer, Trustee	84	50	7 50
T J Poulterer, Trustee	86	50	7 50
T J Poulterer, Trustee	87	50	7 50
T J Poulterer, Trustee	88	50	7 50
T J Poulterer, Trustee	89	50	7 50
T J Poulterer, Trustee	91	50	7 50
T J Poulterer, Trustee	93	35	5 25
T J Poulterer, Trustee	95	25	3 75
T J Poulterer, Trustee	96	25	3 75
T J Poulterer, Trustee	109	25	3 75
T J Poulterer, Trustee	110	25	3 75
T J Poulterer, Trustee	169	100	15 00
T J Poulterer, Trustee	170	100	15 00
T J Poulterer, Trustee	171	100	15 00
J Clem Uhler, Trustee	54	500	75 00
J Clem Uhler, Trustee	56	500	75 00
J Clem Uhler, Trustee	57	500	75 00
J Clem Uhler, Trustee	58	500	75 00
J Clem Uhler, Trustee	59	200	30 00
J Clem Uhler, Trustee	60	100	15 00
J Clem Uhler, Trustee	61	100	15 00
J Clem Uhler, Trustee	62	100	15 00
J Clem Uhler, Trustee	63	100	15 00
J Clem Uhler, Trustee	64	100	15 00
J Clem Uhler, Trustee	65	100	15 00
J Clem Uhler, Trustee	66	100	15 00
J Clem Uhler, Trustee	67	100	15 00
J Clem Uhler, Trustee	68	50	7 50
J Clem Uhler, Trustee	69	50	7 50
J Clem Uhler, Trustee	70	50	7 50
J Clem Uhler, Trustee	71	50	7 50
J Clem Uhler, Trustee	72	50	7 50
J Clem Uhler, Trustee	73	50	7 50
J Clem Uhler, Trustee	180	500	75 00
J Clem Uhler, Trustee	181	500	75 00
J Clem Uhler, Trustee	182	500	75 00
J Clem Uhler, Trustee	183	500	75 00
J Clem Uhler, Trustee	184	100	15 00
J Clem Uhler, Trustee	185	100	15 00
J Clem Uhler, Trustee	186	100	15 00
J Clem Uhler, Trustee	187	100	15 00
J Clem Uhler, Trustee	188	100	15 00
J Clem Uhler, Trustee	189	100	15 00
J Clem Uhler, Trustee	190	100	15 00
J Clem Uhler, Trustee	191	100	15 00
J Clem Uhler, Trustee	192	100	15 00
J Clem Uhler, Trustee	193	100	15 00
J Clem Uhler, Trustee	194	100	15 00
J Clem Uhler, Trustee	195	100	15 00
J Clem Uhler, Trustee	196	100	15 00
J Clem Uhler, Trustee	197	100	15 00
J Clem Uhler, Trustee	198	100	15 00
J Clem Uhler, Trustee	199	50	7 50
J Clem Uhler, Trustee	200	50	7 50
J Clem Uhler, Trustee	201	50	7 50
J Clem Uhler, Trustee	202	50	7 50
J Clem Uhler, Trustee	203	50	7 50
J Clem Uhler, Trustee	204	50	7 50
J Clem Uhler, Trustee	205	50	7 50
J Clem Uhler, Trustee	206	50	7 50
J Clem Uhler, Trustee	207	50	7 50
J Clem Uhler, Trustee	208	50	7 50
L L Robinson	210	500	75 00

And in accordance with law, and an order of the Board of Trustees, made on the 19th day of June, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, No. 409 California street, San Francisco, California, on the 20th day of August, 1872, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

T. F. CRONISE, Secretary.

Office, 409 California Street, San Francisco, California.

At a meeting of the Board of Trustees held this day, the above sale was postponed to Monday, the 16th day of September, 1872, at the same place and hour.

T. F. CRONISE, Secretary.

San Francisco, Cal., August 19, 1872.

POSTPONEMENT.—At a meeting of the Trustess, held this day, the above sale was postponed to Wednesday, the 16th day of October, 1872, at the same hour and place.

T. F. CRONISE, Secretary.

San Francisco, Cal., Sept. 16, 1872.

THE PATENT Novelty Mill and Grain Separator

Is one of the greatest improvements of the age for cleaning and separating grain, while it combines all the essential qualities of a First-class Fanning Mill. It also far excels anything that has been invented for the separation of grain. It has been thoroughly tested on all the different kinds of Mixed Grain. It takes out Mustard, Grass Seeds, Barley and Oats, and makes two distinct qualities of wheat if desired.

For further information apply to R. STONE,
eow-bp 422 Battery street, San Francisco.

From 3 to 30 Horse Power. ALL SIZES Hoadley's PORTABLE Engines Sole Agents TREADWELL & Co

"THE HOADLEY" is the Perfection of the Portable Engine. For sale, with or without wheels, at Machinery Depot of TREADWELL & CO., Market, head of Front street, San Francisco. 14v24 eowbp

Rubber and Oak-Tanned Leather **Belting**

New Stock, just in; Pawtucket manufacture; stand ard quality—warranted *the best*. Come and see and get prices, or give it a trial. Sold low by

TREADWELL & CO.,
12v24 Market, cor. Fremont St., San Francisco.

FOR SALE.

An interest in a Valuable Invention.

A NEW, FOLDING, CHILD'S CARRIAGE.

Call and examine at 523 Pine street.

M. ANSIGLIONI, San Francisco, Cal.

N. B.—The above invention has been protected by Caveat. 9v26-3m

Machinists and Foundries.

ESTABLISHED 1851.

PACIFIC IRON WORKS,

First and Fremont streets,

SAN FRANCISCO

IRA P. RANKIN, A. P. BRAYTON,
GEO. W. FOGG, Superintendent.

Steam Engines and Boilers,

MARINE AND STATIONARY,

IRON AND BRASS CASTINGS

Mining Machinery of Every Description,

And all other classes of work generally done at first-class establishments, manufactured by na at the lowest prices, and of the best quality.

☞ Particular attention paid to Jobbing Work and Repairs.

N. B.—Sole Agents for sale of HUNTOON'S CELEBRATED PATENT GOVERNOR.

18v20-3m GODDARD & CO.

FULTON
Foundry and Iron Works.

HINCKLEY & CO.,
MANUFACTURERS OF

STEAM ENGINES,

Quartz, Flour and Saw Mills,

Hayes' Improved Steam Pump, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

N. E. corner of Tehama and Fremont streets, above Howard street, San Francisco. 3-qy

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GEORGE T. PRACY,
MACHINE WORKS,
109 and 111 Mission Street,
SAN FRANCISCO.

These Works have lately been increased, by additional Tools, and we are now able to turn out any kind of work, equal to and cheaper than any establishment in the State; that is to say:—

STEAM ENGINES,
Flour and Saw Mills,
QUARTZ MACHINERY
Printing Presses,

AND MACHINERY MADE OF EVERY DESCRIPTION.

Improved Safety Store Hoists,

Fitted with Cutting's Patent Cams, unequaled for safety, convenience and cheapness. This Hoist can be built for about half the price of any other in use. To be seen at HAWLEY & CO.'S.

ALSO, MANUFACTURER AND SOLE AGENT FOR
Pracy's Celebrated Governor.

TURNING LATHES, Etc., constantly on hand.
4v23tf

UNION IRON WORKS,
Sacramento.

ROOT, NEILSON & CO.,
MANUFACTURERS OF

STEAM ENGINES, BOILERS,

CROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR

Dunbar's Patent Self-Adjusting Steam Piston

PACKING, for new and old Cylinders.

And all kinds of Mining Machinery.

Front Street, between N and O streets.
SACRAMENTO CITY.

PACIFIC
Rolling Mill Company,
SAN FRANCISCO, CAL.

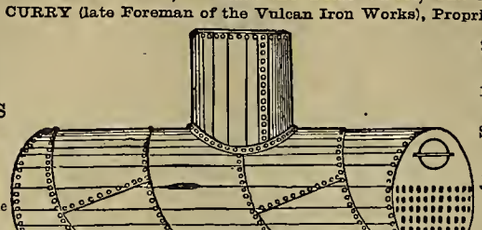
Established for the Manufacture of
RAILROAD AND OTHER IRON
—AND—
Every Variety of Shafting,
Embracing ALL SIZES of
Steamboat Shafts, Cranks, Piston and Connecting Rods, Car and Locomotive Axles and Frames
—ALSO—
HAMMERED IRON
Of every description and size.

☞ Orders addressed to PACIFIC ROLLING MILL COMPANY Post Office, San Francisco, Cal., will receive prompt attention

☞ The highest price paid for Scrap Iron 9v14

San Francisco Boiler Works, 123 and 125 Beale Street, San Francisco.
F. I. CURRY (late Foreman of the Vulcan Iron Works), Proprietor.

High and Low Pressure
BOILERS
of all descriptions.
SOLE
Manufacturers of the
CELEBRATED
SPIRAL BOILER.



22v22-3m

Sheet Iron Work of every DESCRIPTION done at the Shortest Notice.
All kinds of
JOBBING
and
Repairing
Promptly Attended to.

CAMERON'S

MINING STEAM PUMPS.

DAVID STODDART,

114 Beale Street, - - - - - - - - - SAN FRANCISCO.

THE LIGHTNING MILL.

THE
LIGHTNING MILL,

For Pulverizing Quartz, "Charleston Rock," and all Native Phosphates, Flint, Feldspar, Iron Ore, Manganese, Antimony, Carbon, Corundum, Old Crucibles, Barytes, Brimstone, Slate, Soapstone, Graphite, Glass, Marble, Plaster, Anthracite and Bituminous Coals, etc.

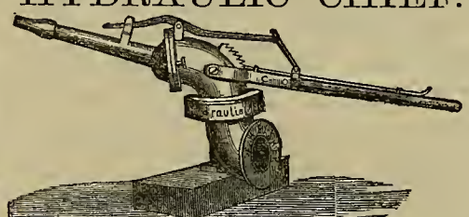
WM. STEWART'S
Patent Bone Mills and Crushers.

For Grinding Bones, Rock, Quartz, and all hard substances; also, Corn, Wheat, Oats, Barley, Coffee, Spices, etc.

WALKER BROS. & CO., Twenty-third and Wood Streets, Philadelphia, Sole Manufacturers of Stewart's Celebrated Patent Bone Mills and Crushers, A. W. Straub & Co.'s Patent Revolution French Burr Mill and A. Duval's Patent Centrifugal Pumps.

HYDRAULIC CHIEF.

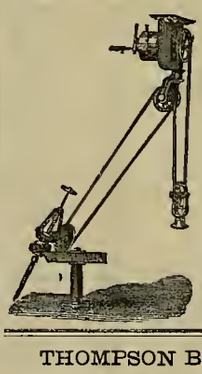
FISHER'S
KNUCKLE
JOINT
AND
NOZZLE
IS THE
Cheapest and Best Hydraulic Machine in use.



MACHINES
Manufactured
TO ORDER,
to throw from
One
to an
eight-inch
STREAM.

The only reliable party in the Hydraulic business who protects his patrons.
9v23-tf Address F. H. FISHER, Nevada, Cal.

HYDRAULIC MINERS, TAKE NOTICE—I hereby caution Miners and Manufacturers against making, buying, selling or using a Hydraulic Machine or Joint known as the Little Giant, manufactured and sold by R. R. & J. Craig and Richard Hoskin, as the same is an infringement upon the invention of the machine known as FISHER'S HYDRAULIC CHIEF, secured by Letters Patent, No. 110,222, dated Dec. 20, 1870. All parties participating in such infringements will be rigorously prosecuted. Nevada, Jan. 13th. F. H. FISHER.



PORTABLE
DRILLING MACHINES,
THORNE & DE HAVEN,
Twenty-third and Cherry Streets, Philadelphia.

These machines can be placed with as much facility as a ratchet brace, and can be used in any position, at any distance, and in any direction from the power.
The No. 1 is capable of drilling up to 1¼ inches in diameter; the No. 2 up to 1¾ inches; and the No. 3 up to 2¼ inches, and boring up to 4 inches.
Send for Circulars and Photographs.

2v25-3m

THOMPSON BROTHERS,
EUREKA FOUNDRY,
129 and 131 Beale street, between Mission and Howard, San Francisco.

LIGHT AND HEAVY CASTINGS,
of every description, manufactured 24v16qr

Miners' Foundry and Machine Works,
CO-OPERATIVE,
1rst Street, bet. Howard and Folsom, SAN FRANCISCO
Machinery and Castings of all kinds.

SAN FRANCISCO
SCREW BOLT WORKS,
PHELPS BROTHERS, Proprietors,
MANUFACTURERS OF ALL KINDS OF
Machine Bolts, Bridge Bolts, and Ship or Band Bolts.
13 and 15 Drumm Street, San Francisco. 4v24ly

CALDWELL'S
Improved Stop Governor,
Manufactured at the CYCLOPS MACHINE WORKS, 113 and 115 Beale street, San Francisco.
8v24-3m WM. CALDWELL.

H. J. BOOTH & CO.,
UNION IRON WORKS,
(The Oldest and most Extensive Foundry on the Pacific Coast).
Cor. First and Mission Sts.,
SAN FRANCISCO.

Marine, Locomotive and Stationary Engines Quartz Crushing and Amalgamating Machines, Mill Irons and Brass and Iron Castings, of every description, made to order.

Steamboat Repairing, Boiler Making, Turning and Finishing,
EXECUTED WITH DISPATCH.

Beet Sugar Machinery complete in every part—made a specialty.

OIL MACHINERY.

A complete set of Machinery of our own design and patent for extracting oil from Castor Bean, dispensing with Hair Cloth. Also Machinery for Flax Seed Oil, Mustard Seed Oil, and Sun Flower Seed Oil.

MARBLE MACHINERY

For sawing Marble of any thickness or size.

Irrigating Pumps. Steam Pumps.

Plans, Estimates, and Advice promptly supplied.

H. J. BOOTH. GEO. W. PRESCOTT. IRVING M. SCOTT
4v24-1yslamr

THE RISDON
Iron and Locomotive Works.

INCORPORATED.....APRIL 30, 1868.
CAPITAL.....$1,000,000.

LOCATION OF WORKS:
Corner of Beale and Howard Streets,
SAN FRANCISCO.

Manufacturers of Steam Engines, Quartz and Flour Mill Machinery, Steam Boilers (Marine, Locomotive and Stationary), Marine Engines (High and Low Pressure). All kinds of light and heavy Castings at lowest prices. Cams and Tappets, with chilled faces, guaranteed 40 per cent. more durable than ordinary iron.

Directors:
Joseph Moore, O. J. Brenham, O. E. McLane,
Wm. Norris, Wm. H. Taylor, Lloyd Tevis,
James D. Walker.

WM. H. TAYLOR.....President.
JOSEPH MOORE..Vice-President and Superintendent.
LEWIS R. MEAD.....Secretary
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GEO. W. PRESCOTT. C. W. SCHEIDEL. W. R. ECKART.

PRESCOTT, SCHEIDELL & CO.,
MARYSVILLE FOUNDRY,
Corner of B and Fourth streets, Marysville, Cal.

MANUFACTURERS OF
STEAM ENGINES,
STATIONARY AND PORTABLE
SAW AND GRIST MILLS,
Hydraulic Machinery,
Quartz Crushing and Amalgamating Machinery
Of every description, constantly on hand.

Plans and estimates furnished upon application. Repairs upon all kinds of Machinery promptly made, and at moderate charges.

Having unrivalled facilities, we are prepared to make to order, at short notice, anything required in our line.

Specimens of our work may be seen in all the mining regions on this coast.

FOUNDERS AND MACHINISTS.

TYRRELL & CUMMINGS, PROPRIETORS
Union Iron Works,
No. 320 South O street, on the Divide, Virginia, Nev.
Manufacture Mill and Mining Machinery,
From the Smallest to the Largest Capacity, on the Shortest Notice, and Guaranty Satisfaction.

N. B.—Eastern Nevada and Utah Millmen, patronize near home and save money. 11v25-3m

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OCCIDENTAL FOUNDRY,
137 and 139 First st., near the Gas Works, San Francisco.
STEIGER & BOLAND,
IRON FOUNDERS.

IRON CASTINGS of all descriptions at short notice.
NOTICE.—Particular attention paid to the making Superior Shoes and Dies. 3v24-3m

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CALIFORNIA BRASS FOUNDRY,
No. 125 First street, opposite Minna,
SAN FRANCISCO.

ALL KINDS of Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch
☞ PRICES MODERATE. ☜
J. H. WEED V. KINGWELL.

Machinery.

POWER, TAINTER & CO.,

MANUFACTURERS OF

WOOD-WORKING MACHINERY.

3003 Chestnut street, (West end Chestnut street Bridge)
PHILADELPHIA.
☞ Woodworth Planers a Specialty. 4v25-3m

Varney's Patent Amalgamator.

These Machines Stand Unrivaled.

For rapidity pulverizing and amalgamating ores, they have no equal. No effort has been, or will be spared, to have them constructed in the most perfect manner and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the apperture and between the grinding surfaces.—Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Setlers made on the same principle excel all others They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely aheorbed.

Mill-men are invited to examine these pans and setlers for themselves, at the office, 229 Fremont Street, San Francisco.

MILL STONES.

Portable Mills, Eureka Smut Machines
Bran Dusters, Dufour & Co.'s Celebrated Dutch Anchor Bolting Cloths, and General Mill Furnishing.

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P. J. POTTER. J. W. HOFFMAN.

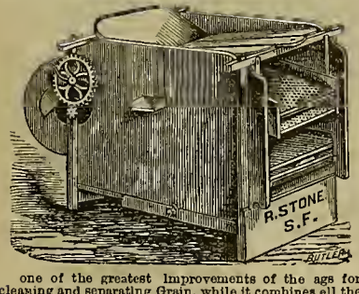
POTTER & HOFFMAN,

Railway, Engineer and Machinists' Supplies,

19 and 21 South Fourth Street,
PHILADELPHIA.

Have a large stock of all leading articles constantly on hand at lowest market rates.
☞ Send for Price List. 24v24-eow12t

THE PATENT
Novelty Mill and Grain Separator

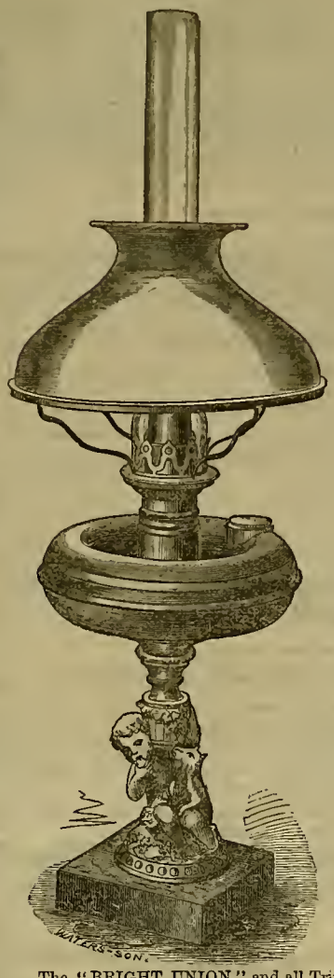


one of the greatest Improvements of the ags for cleaning and separating Grain, while it combines all the essential qualities of a first-class Fanning Mill. It also far excels anything that has been invented for the seperation of Grein. It hes heen thoroughly tested on all the different kinds of mixed Grain. It takes out Mustard, Grass Seeds, Barley and Oats, and makes two distinct qualities of wheat if desired.

For further information apply to
R. STONE,
26v3 422 Battery street, San Francisco.

BRIGHT UNION SAFETY LAMP.

A CALIFORNIA INVENTION.

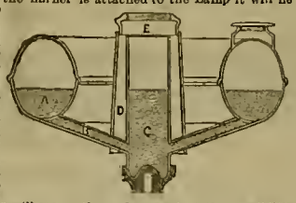


Patented May 30, 1871. Is the Best and Safest Lamp over pnt in the market, for the following reasons:

1st.—The Lamp is constructed with two tnbes, as will be seen in cnt, the outside one (D) intended only for the attachment of the burner, and the inside one (O) to contain oil and receive the wick. As there is no connection between these tubes, it will be evident that there is no possibility of communicating any heat to the oil, and as long as the oil in a Lamp can be kept perfectly cool, there is, of conrse, no chance for an explosion.

This Lamp is the only one ever invented in which this result has been secured.

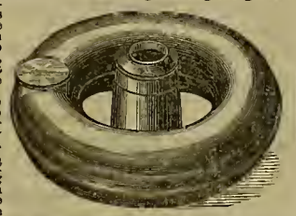
2d.—When the burner is attached to the Lamp it will be seen that there is no opportunity for the oil to escape should the Lamp be overturned, and in case any accident should occur, the worst consequences that could ensue would be the breaking of a chimney or shade. From those facts it will be evident that those who adopt this Lamp will secure themselves against the possibility of fire or explosion arising from the use of kerosene oil.



3d.—The Lamp is strongly and well made, attractive in appearance, and something entirely new and novel. It will burn kerosene adapted to any burner. With all of these advantages it combines cheapness, and from present indications it is destined to become very popular.

4th.—The tube to which the burner is attached (D) is free from the tube of the oil (O), and a space for air, passing from the lower end, between the tube of the burner and the tube of the oil, keeps it always cool.

5th.—The burner is the cause of generating the gas in a Lamp. It cannot do it in this Lamp, as the burner is set on a tube which contains no oil, consequently it cannot make any gas.



6th.—In case of accident, the Lamp falling or thrown over, by which many explosions occur, is the cause of the oil rushing to the flame. In this Lamp it is not so; it can be thrown over and cannot send the oil to the flame; it will run from it, so there is no danger of catching fire.

This Lamp can be filled from the fount, on the top of which is a screw.

This Lamp can be attached to any Chandelier or Bracket made.

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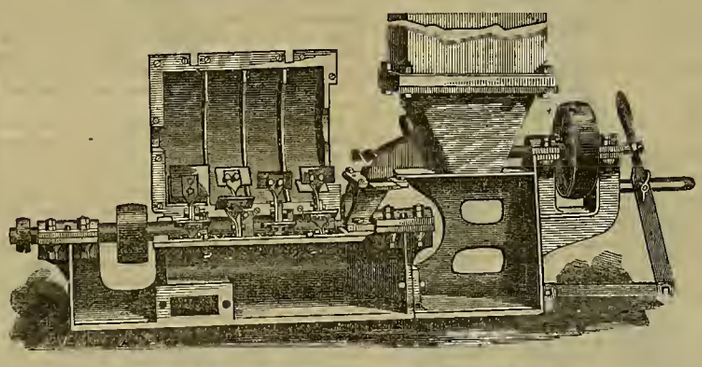

For Reducing Ores to Fine Powder.

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L. P. DODGE, Esq., Agent for Messrs. WHELPLEY & STORER—Dear Sir: Your communication of the 10th instant is at hand. In reply would say thet we have been running a Whelpley & Storer Pulverizer for the lest six months, grinding ores of different kinds, some of them exceedingly hard. The operation of the Pulverizer has been, in every respect, a complete success, grinding very fine, with hut little power required to drive it, and hut slight expense for wearing parts. We cordially recommend them to all parties requiring a Pulverizer for miningor other operations. Respectfully' J. W. JONES, Superintendent, etc.

May he seen in practical operation on Main street, between Howard and Folsom, San Francisco.
This Machinery has been adopted hy nearly all the Eastern reduction works for reducing ores.
Parties purchasing machinery will find it for their interest to examine this hefore purchasing elsewhere.

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The Hesse Grinder and Amalgamator.

BEST IN USE!

Especially well adapted for the Reduction of Sulphuret Ores.

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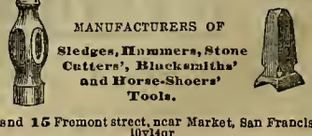

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THE MINING AND SCIENTIFIC PRESS.—We are in receipt of the above valuable journal of July 6th. It has entered upon its twenty-fifth volume, and is indeed a publication that one and all should avail themselves of. We wish it continued success.—*San Andreas Citizen, Aug. 13th.*

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VIRGINIA CITY, M. T., August 25th, 1872.

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The above work, by GUIDO KUSTEL, is sold by DEWEY & Co., Publishers, Patent Agents and Engravers, at No. 338 Montgomery street, San Francisco.

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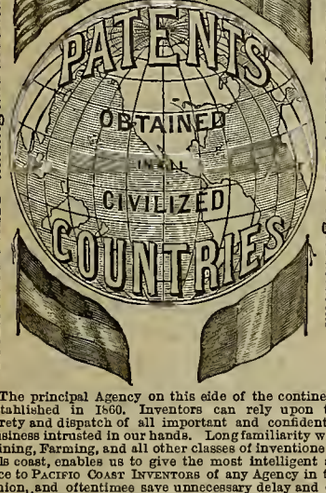

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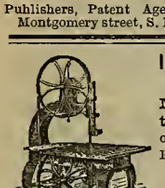

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Resisting and withstanding perfectly hermless its test in the frigid regions of Minnesota and Northern Michigen, the windy passes of the Rocky Mountains (U. S. Government Quarters at Fort "D. A. Russell," W. T., covered with this Roofing), the torrid zone of Southern Texas, and many seahord States east and south, and in every Western State between Lake Huron and the Gulf of Mexico, making an array of practical and testimonial merit that must carry confidence and conviction to the minds of all, as to its supsriority and worth.

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COMMENCING
Monday, September 16th, 1872.
And until further notice, Trains and Boats will
LEAVE SAN FRANCISCO.

7.00 A. M. Atlantic Express Train (via Oakland) for Sacramento, Marysville, Redding and Portland, O. Colfax, Reno, Ogden and Omaha.

7.15 A. M. Cal. P.R.R. Steamer (from Broadway Wharf) —Connecting at Vallejo with Trains for Calistoga, Knight's Landing and Sacramento.

8.00 A. M. Excursion Boat (Sundays only) from Broadway Wharf, connecting with Special Train of S. F. & N. P. R. R. for Cloverdale and intermediate points, returning to San Francisco by 7 P. M.

2.00 P. M.* Stockton Steamer (from Broadway Wharf), touching at Vallejo, Benicia, and Landings on the San Joaquin river.

2.00 P. M.* Steamer Antelope, from Broadway Wharf, connecting at Donahue with Trains for Cloverdale.

3.00 P. M. San Jose Passenger Train, stopping at all way Stations.

4.00 P. M.* Passenger Train for Lathrop, Merced, Visalia, Tipton and Los Angeles, Stockton and Sacramento.

4.00 P. M.* Cal. P. R. R. Steamer (from Broadway Wharf) connecting at Vallejo with Trains for Calistoga, Knight's Landing and Sacramento.

4.00 P. M.* Saoramento Steamer (from Broadway Wharf). Touching at Benicia, and Landings on the Sacramento river.

6.30 P. M. Overland Emigrant Train, Through Freight and Accommodation.

OAKLAND BRANCH.—LEAVE SAN FRANCISCO, 7 00 8 10, 9 20, 10 10 and 11 20 a. m., 12 10, 1 50, 3 00, 4 00, 5 15, 6 30, 8 15 9.20 and *11 30 p. m. (9 20, 11 20 and 3 00 to Oakland only).

LEAVE BROOKLYN (for San Francisco), *5 30, 6 40, 7 50, 9 00 and 11 00 a. m., 1 30, 2 40, 4 55, 6 10, 7.55 and 10 10 p. m.

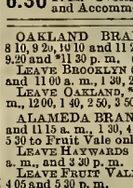
LEAVE OAKLAND, *5 40, 6 50, 8 00, 9 10, 10 00, and 11 10 a. m., 12 00, 1 40, 2 50, 3 50, 5 05, 6 20, 8.05 and 10 20 p. m.

ALAMEDA BRANCH.—LEAVE SAN FRANCISCO, 7 20, 9 00, and 11 15 a. m., 1 30, 4 00, 5 30, and 7 00 p. m. (7 20, 11 15, and 5 30 to Fruit Vale only).

LEAVE HAYWARDS (for San Francisco), *3 45, 7 00 and 10 45 a. m., and 3 30 p. m.

LEAVE FRUIT VALE, *4 40, 7 35, 9 00 and 11 20 a. m., 1 30, 4 05 and 5 30 p. m. *Except Sundays.

T. H. GOODMAN, Gen'l Pass'gr and Ticket Agt. A. N. TOWNE, Gen'l Supt.



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Office of the San Francisco and Colorado River Railway Company,

NO. 305 SANSOME STREET,

SAN FRANCISCO,.....SEPT. 24, 1872.

TO THE PUBLIC.

THE BOARD OF SUPERVISORS OF THE CITY and County of San Francisco, having passed an Ordinance submitting to the Electors the question of granting a subsidy to our Company, for the Construction of a Railroad to the Colorado River, to connect with the railroade being built from the East, we are now in a better position to ask the citizens of San Francisco to join us and urge the importance of the undertaking; and beg to say:

First—We propose in good faith to build a first-class railroad, with all the dispatch possible, and certainly within the time provided in the ordinance.

Second—We pledge ourselves as men to the fact that we are entirely disconnected and free from all association with the Central or Southern Pacific Railroad Companies or their Managers or Directors, and are in genuine competition with them, and we have no association or connection with any other Railroad Company or combination in existence, and expect to have none, except business or running arrangements with lines from the East and South, which hereafter may desire to exchange business with us.

Third—We invite every citizen of the City and County of San Francisco to subscribe to our stock. Our Books are open to all. Our Company is not a close corporation, and in no sense a monopoly. We particularly invite every Taxpayer to subscribe, at least as much as he will be called upon to contribute to the subsidy, and thus, in a manner, free of legal difficultiee, participate in the advantages growing out of the enterprise.

Fourth—A Committee of the Board will be in attendance at the office of the Company, No. 305 Sansome street, to receive subscriptions, and duly authorized parties will wait upon the citizens generally, giving them an opportunity to subscribe.

Fifth—This being an independent and competing road, there can be no reason for those who desire the success of such an enterprise to decline their co-operation, which we cordially invite.

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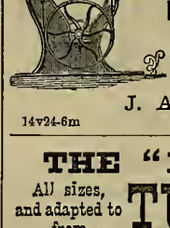

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MINING AND SCIENTIFIC PRESS.

An Illustrated Journal of Mining, Popular Science and Progressive Industry.

BY DEWEY & CO., Patent Solicitors.

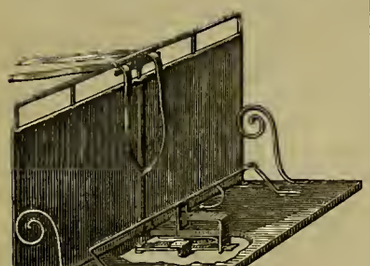
SAN FRANCISCO, SATURDAY, OCTOBER 5, 1872.

VOLUME XXV. Number 14.

Improved Rein-Holder.

The accompsnying illustration represents an attachment for huggies, carriages and other vehicles, for the purpose of holding the reins when the driver desires to leave the horse and buggy standing. It also serves to hold the rcins snd relieve the driver on a plain level road and with a gentle horse. The cut shows that portion of the bottom of a bnggy or other vehicle which is in front of the driver's seat, and also the dsshboard with the iron rod which forms a part of it and psses across above the leather.

An inverted concave metal plate fits down upon this rod or wire at its middle. A wire or rod is secnred to the middle of the inner side or edge of the inverted concave plate and passes down along the vertical rod which forms the middle snpport of the dsshboard snd passes heneath the floor into a box beneath the buggy bottom. This rod passes down inside the leather and is therefore concealed from view. A lever is hnng npon a pivot at its middle, inside of the box, upon one end of which the lower end of the rod passing down inside of the leather on the dashboard rests. A foot-lever stands above the hottom of the hnggy, snd



VILE'S PATENT REIN-HOLDER.

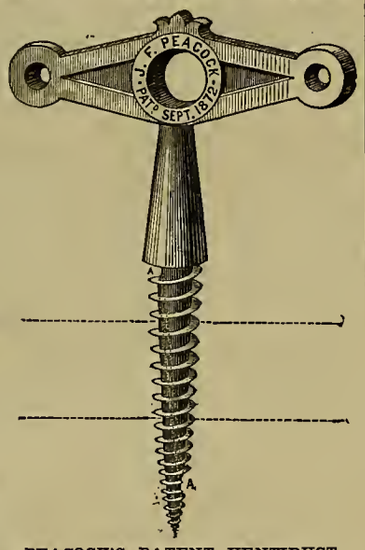
passes down through the floor where it is connected to the opposite end of the lever-rod, so that hy pressing down upon the foot-lever the rod and the horizontal concave plate are raised. A spring serves to give a reverse tension to the lever and thus hold the concave plate firmly down upon the rod on top of the dashboard.

In order to secnre the reins when it is desired to leave the horse and huggy standing still for a time, the driver has simply to press his foot upon his foot lever and thus lift the concave plate. The reins can then he slipped hetween the rod on top of the dashboard and the concave plate, when hy removing the pressure from the foot-lever, the plate will he drawn down by the spring so as to hind the reins hetween it and the rod. This device is very neat, simple and convenient. When the reins are not heneath the concave plate it will fit down npon the rod upon which it rests so snugly that its presence would hardly he noticed, while it is completely out of the way. It is easily operated and will hold the reins with a firm grip, as the edges of the concave plate will serve as a clamp to bind them firmly in place.

By the use of this device many accidents will he prevented for it often occurs that when the reins are placed carelessly over the dashboard or hetween its edge and the whip as it stands in its socket, that one or hoth of them fall to the ground, especially if the reins are rather short. People will be negligent, of course, in this as in other cases, and the ingenuity of the inventor is freqnently called into requisition to devise means to take the place of forethought or prndence in human beings; so while some simple contrivance like this one is in existence it should be universally adopted so ss to forestall negligence and its results. The reins are in no danger of falling nnder the horses' heels when fastened in this manner and the chsnces of a runaway are mnch lessened. The device was patented through the Scientific Press Patent Agency by E. C. E. Vile, of Santa Clara, Santa Clsra County, who may be addressed at that place by those desiring further information.

A Gimlet Ventiduct.

The cut which is shown herewith is an illnstration of a device which is called by the inventor a "gimlet *ventiduct*." Its object is to provide a resdy means of giving a vent to bsrrels, casks and other liqnid-containing vessels.



PEACOCK'S PATENT VENTIDUCT.

It will also answer for a sampling faucet. As the cut shows, the handle and lower part have the appearance of a common gimlet with the screw part rather enlarged. At the extremity of the shank is a gimlet, or other pointed screw, whose base where it joins the shank is of smaller diameter than the shank, and the shoulder thus formed is beveled inward, as shown

A hole passes diagonally throngh this screw, commencing at a point near the shoulder and passing out at the side of the screw near the point, as may be seen by reference to the cut, or a groove is made upon one side of the screw, which will serve the same pnrpose. The screw is to be bored through a cork, if convenient, or it can be bored directly through the wood of the barrel, and when turned down so as to hind the beveled or saucer-shaped shoulder against the wood or cork, a perfect air and water-tight joint is produced; but when it is desired to give a vent to the harrel or sample its contents, the screw can be turned hackwards until the outer opening of the vent passage is npon the outside of the barrel, while the opposite end communicates with the interior, thus allowing the passage through it of either air or liquid, as desired.

The combination of this vent screw with the handle and shank provides a neat, convenient and useful implement; but if desired, the handle conld be dispensed with and a square end be made upon the shank, so that it conld be turned by an ordinary wrench. The fancet ventiduct can be made of either wood or metal, and the screw csn be provided with any suitsble style of screw-thresd and penetrsting point. This little device will be found of grest use to wine men and others who have liquids of any kind stored in casks or barrels. It is the invention of Mr. J. F. Peacock, of Reno, Nevada, who procnred bis pstent throngh our sgency.

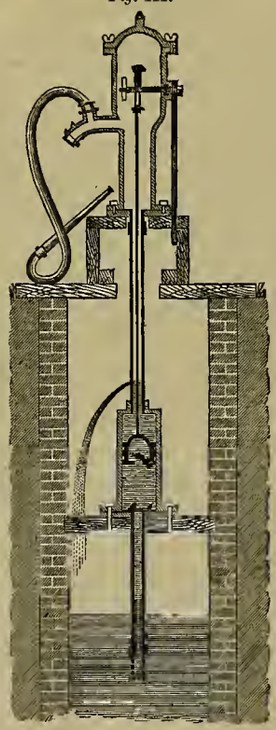
The People's Pump.

The importance of a good and cheap pump is nowhere hetter understood thsn in Calfornis. In the pump we here illustrste, is found simplicity, durability and efficiency. There sre two vsrieties made, hut both act upon precisely

Fig. I.

Fig. II.

Fig. III.



the same prinoiple, and differ from all ordinary pumps in this, that the plunger-rod, instead of working through the top, is operated hy a rocking shaft running through the side, to the onter end of which is attached the handle, thus enahling the top to he closed with a binged lid, and secured by three thumb-screws, forming an air chamber for forcing, as seen in Fig. 1. This engraving represents the

In-Door-Pump.

These pumps combine the two principles, suction and force. The spout has two outlets to one of which may be attached a pipe for conducting water to attics for bathing purposes, etc.; to the other, a hose for throwing water in case of fire, wsshing csrriages, watering gardens and lswns. The prompt sction of this pump, its reliahility and simplicity of constrnction, give it a chsrscter for excellence nnequalled. Having an air chsmher, it comhines the principles of a double-acting fire_engine of grest power.

Deep Well Pump.

This pump the same in principle, differs from Fig. 1, in having the valve portion, Fig. 2, secnred to a plank or timber down in the well within suction distance, sbout 25 feet above the water, and connecting with iron pipe above the same and with iron or lesd pipe below; in this way they can be applied to wells of any depth.

A sectional view of the deep well pnmp with sll its connections is shown in Fig. 3. These pnmps are made of two sizes, one with a cspscity of 15 gallons and the other of 30 gallons per minnte. For purposes of irrigation, ths wstering of stock, snd as security against fire—its presence always affecting favorably the rates of insurance—this pump has no superior, whilst its cheapness places it within the reach of all.

Conroy, O'Connor & Co., 109 Front Street, San Francisco, can give all further information needed as regards the effeotiveness of this invention, and having ourselves seen it in operation, believe it possesses all the merit claimed for it.

Monitor Mill.—In writing up his notes of travel in Nye County, Nevada, our correspondent, L. P. Mc., inadvertantly neglected to mention the remodelling and improvements on the ahove-mentioned mill, which is located ¾ of a mile from Belmont, Nevada. It helongs to the Monitor-Belmont S. M. Co. This mill had formerly only 10 stamps with a Stetefeldt furnace hut the stamps were of light weight and the furnace had been pretty well worn out. The whole affair has been remodelled, 10 additionsl heavier stamps heing added with pans to correspond, and the furnace overhauled and made to snit the enlarged crushing capscity. Considerahle expense has been incurred in these improvements. The mill is expected to be in running order this month.

Gold Bluff Expedition.—The schooner "Witch Queen" belonging to the Suhmarine Company which has heen to Gold Bluff for the purpose of getting the golden sands of that locality by means of a diving-bell apparatus has returned to this port for repairs. In hoisting the bell on board during a gale of wind the pump was damaged and it was necessary to put back here to have it repaired. The Snperintendent reports that exceedingly rich sands were found at a depth of from 18 to 60 feet. The expedition will return to Gold Bluff ae soon as the repairs are completed.

Mexican Mines.—The revolutionary disturhances in the State of Sinaloa, Mexico, have stopped work on all the mines except a few which have been taken possession of hy the Pronunciados. Some of the mines are very rich and it is a great pity that enterprising Americans have not an opportunity to operate them.

Arizona.—The mines recently discovered near the Sonora line are reported very rich and are creating considerable excitement in Arizona. The mineral country is said to be extensive. A batch of Apache murders is recorded, as usual.

CORRESPONDENCE.

From Our New York Engineer.

Rifle Shooting.

A new ecience is about to be added to the liet of American achievements in this respect. It is new, tbat is to say, to the United States, but has made great progress in some other countries. It is scientific rifle-practice. We have rifle-shooting as it ie, especially at ehort range, and with a target for the enemy. But this ie something more dignified than practice at a bat on a tree, at a hundrsd and fifty or two hundred yards rangs, dietances which, with moet compstitors have been coneidersd pretty "long" shots. But now New York ie to have a rifle-rangs at which there will bs shoooting at all ranges, from two hundred np to a thousand yards. The nsw range is at Creedmoor, Long Island. It is not to be a sporting range, bnt is intended to bs the training-ground of ths National Guard. There will bs fifteen long-rangs targets, and eome shorter onee for pool-shooting, to keep the competitore amussd during their off-time. The whole affair ie under the auspicee of the National Rifle Association.

Seeing that the chief business of the soldier is to bring down hie enemy, and weapone of war have improved so much of late years that it is quite possible to hold an army at a thousand yards distance and more, it would be but natural to suppose that rifle-practice would be the head and front of military training. But that is far from being the case. The United States have probably 50,000 men in their militia regiments, and I doubt very much if five per cent. of them are fair ehots at 500 yards. Certainly, leaving out those who have heen trained in the war, that proportion would hold good. But though we have had the great example of England, with its Wimbledon before us, as well as the still more creditable efforte of the Canadians in the eame direction, we have, until within a year, done nothing. One New York regiment hae a private range, but it lacks good equipment, and there is absolutely nothing for the whole service.

It is eurprising, by the way, to see what ie necessary in the way of

Targets and Other Apparatus.

The targete are made of half-inch boiler-plate, doubled in the center, and strongly backed by angle-irone. Yet they wear out in a few years. I have eeen a hole knocked in one one of them, not by one bullet, but by many, striking in the same place. When a hardened bullet is fired with seventy, eighty and ninety grains of powder, its blow is a fearful one, and eonnde particularly vicious to a man posted in the marker's ecreen. The lead makes a star an inch and a half or two inchee wide, and on a still day the marksman at eight hundred yards plainly heare the sound of his bullet on the target.

A match ie to be held late in September or early in October, when prizes will be given. As the object of the Association is to encourage practice in the National Guard, most of the prizes will be confined to membere of that body. But a number will be open, and we must be content to eee those who go out of the country for eome yeare to come, for the Canadians are coming down to meet ue, and their ten or twelve yeare' practice have made them euch perfect marksmen that their picked men can nndoubtedly beard us in any den we preeume to build. So much the better, however, for our future enthusiasm. When we have worked with half the perseverance they have shown, I have no doubt we shall be able to keep our prizee at home.

Peat.

There ie jnst now a revival of the old peat question, which suffered a pretty thorough *quietus* a few yeare ago. Five or six years ago there was a decided excitement about peat, and I have seen loads of it dumped down before houses which bore marks of wealth which ought not to have made their owners fear bankruptcy from the high price of coal. I will warrant no second load was bought after the first had been tried. Peat is the best fuel there is when you can't get any other, but that ie about all there is to be eaid for it. It is eooty, emoky and makee a vast deal of labor to whoever hae to keep the fire up. Its use is rejected in almoet every country, except Germany, where it hae to be purchaeed. In Ireland, where the people gatheir it for themselves, there may be eome reason for using it. But as an article of merchandise it can never compete with coal among a people who use much fuel. As a kindling material to start the fire it is really good, and might well take the place of faggote. These facts are well known, and when speculatore try to renewthe cry of peat and its virtues, the scieutific and other papers at once eend up a united cry against ite use. For thie reaeon I do not anticipate any great pecuniary benefit to those who own ten or twenty square milee of peat. Ae a manure it might have a sale, for its value for that purpose is decided. The

Subject of Manures

Ie one that ie gradually taking on a new phase. The manures of the future will probably be mined inetead of gathered from islands. At all events, they will contain a great deal of materisl that hss been won with the drill and the pick. It is astonishing to notics ths constant discoveriee of phoephatic rocke. Twenty and fifteen-per cent. deposits ars both numeroue all over the world and of immenes extent. Ws are now shipping high-grade phospbatss from South Carolina to England, where tbey meet with ready sale. But they have to bs very high grade, for if tbs percentags of phosphorus is suffered to sink for lack of selecting the rock properly, the Englishmsn can go to Francs, Spain and other countries and get rock of fair qnality, at much lower rates. But nndoubtedly the day will come when these lower-grade manurss will be manipulated so as to concentrate the phospborus, and make ths vast deposits utilizabls. When that day comes, the farmer will not bs dependsnt upon a few small islands, under the coutrol of a foreign power, but each country will bs able, from its own hidden treasures, to supply its own wants. Our country is one of the most favored, for deposite of phosphatic marle are very numsrous on ths Atlantic Coast, and are probably not lacking on your sids. In thus breaking up the rocks and distributing them over ths land, we are but repeating the processes of nature, which has formed all onr soil in precisely the eame manner.

Mining and Mechanical Schools.

I see that a Philadelphia gsntleman proposes to found a echool whers boys can learn mechanical trades. In doing so he will but carry out ths most advanced idsas of iustruction. There ie, however, one fault of echoole of thie kind. Their graduates seem to lie under some suspicion, and experienced men in all kinds of businees unite in eaying that echooling, however practical, ie not like real work. It ie not, and the beet way to give them the element of reality which they lack, is, in my opinion, contaiued in the advice of a lawyer, who spoke concerning the education of lawyers. His idea wae that a would-be lawyer had better enter an office first, work there two years, and then go to a law echool. Hie mind will then have received a practical bent which it will never loee. If we could introduce such a eystem into our mechanical and mining echools, I believe it would be of the greatest advantage. The difficulties here are greater than with the lawyer, for it is nearly impossible to go tbrough a mining echool without having exact knowledge of certain studies, as mathematice, for inetance. Practical mining and study are two thinge which it is very difficult to combine. Still, it can be done, and any young man who, having thoroughly fitted himself for a echool of mines, will work in a mine for a year, keeping up his study enough to maintain hie proficiency, will, I am confident, find himself posseseed of great advantagee, not only when he begins study, but also when he commencee life. By that course he would build up a reputation, which five years of work *after* he left school could hardly match.

B.

New York, Aug. 28, 1872.

A Worthy Enterprise.

We are informed by correspondence from Iowa Hill, in this county, that a company has been organized in that town with a capital etock of $100,000 for the purpose of cutting a ditch to bring water on the divide from the north fork of the American river. This promises to be the most worthy enterprise nndertaken by the citizens of Placer for many years, and we freely say, may all praise be given to its energetic projectors. There ie, perhape, no district in the State of California that contains richer mines than those on tbie divide; but, notwithstanding this fact, their owners are comparatively poor, for no other reasou than the want of water to work them. They have waited with patience for the coneummation of Von Schmidt's famoue Lake Tahoe water project, but have waited in vain. At last, seeing the folly of depending on the windy projects of scientific men, they have taken the matter in their own hands, and with an abundance of practical experience, which ie mnch better tban theoretical ecience, aided by perseverance and industry, they are bound to put it through. Half of the stock is already eubscribed and the survey has been completed. Fourteen miles will be the length of the ditch, with a capacity for carrying over 7,000 inchee of water. A force of Chiuamen have been set to work, and our informant eaye, "Jnet a year from this time we expect to eee the water running down the divide." The engineers deem this one of the best water rights in this State. Our correspondent, referring to the time when thie ditch will be completed, says: "My long experience in the nines enablee me to say, almoet to a certainty, that this divide will be one of the most flourishing mining sectione in the State." *Auburn Herald.*

MAGNETIC WELLS.—Much has been said recently about certain wells in Michigan, whose waters were claimed to possess magnetic and healing properties. About 150 such wells had been discovered, and their watere had beeu sent in large quautities all over the country.

It appears that some carelese scientist had reported their magnetic propertiee, basing his statement on the observation that a piece of eoft iron wire, connecting a cup of the water with the earth, was ehown by the magnetoscope to be magnetic. Dr. Kedzie had omitted the water in the same experiment, and found a similar result. He had also teeted the tubing of wells that had not reached water at all, and found it magnetic. The indications were due to terrestrial magnetism.

Notes on the Reduction of Gold Ores.

BY H. A. THOMPSON, M. E., OF MELBOURNE.

(Continued.)

Stamping Mills for Gold Ores.

Ths moet ssrious objection to the uee of the stamping mill for gold ores, of the character common in thie colony, was the large proportion of gold beatsn up undsr the stampers, into euch emall particles that they could not bs retained by the ordinary processes, thus cansing a great loss of gold. This, in Germany, is called "beating the gold dead," and was, no doubt, one of ths reasons why stamping macbiusry was at first held in such disfavor. Tbe objection bas besn in a great measure, if not entirely, overcome, by tbe introduction of false beds into the coffers, altbough, in several parts of the colony, tbese are still only viewed as a means of saving the coffers from wearing out, while ths great advantags derived from them is overlooked. Whsn properly arranged, they allow a large proportion of the gold to remain in the coffers, and for thie purpose the falss beds should have a laysr of broken quartz, from two to three inches thick, betwesn them and the bottom of the coffer. The area of ths bed should be the same as that of the head, so as to allow sufficisnt space around them for ths gold to get down below the lsvel of the falee beds, among the looss quartz, whers it will be protected from the action of ths stampe. When the falss beds havs a larger arsa than the face of the heads, a hollow ie formed in them, in which the gold ie liable to collect, and there get beaten up. The falee bede are cheaper when made of wrought, instead of cast iron, from the greater durability of the former. Shoes are now in general use, both for round and equare heade, and have a decided advantage in keeping up the weight of the stamp, and in the facility with which the worn-out shoe can be replaced.

All stampe should be made eelf-feeding, to save labor, which can be much better expended in attending to the meane adopted for eaving gold. Wire gauze or perforated plates are used for covering the eecapee, but the platee are generally preferred. The gauze may run from twelve to sixteen wiree to the linear inch, and the perforated plates may be of a corresponding gauge. Thie gauge should be euited to the character of the gold in the quartz; where thie ie fine, the crushing muet be fine aleo; where coarse, the crushing may be coaree. Cases may even occur where it would be advantageoue to lose a portion of the free gold through coarse crushing, for the sake of saving a larger percentage of the rich auriferoue sulphides.

Amalgamating Appliances.

Outeide the coffers, the appliancee ueed for amalgamating have been eo numerous as to render it impossible to deecribe them all within the limits to which these notes are confined. They have each been tried—had their day—and been thrown aside for eimpler and more effective plans; although modificatione of old amalgamating machines are etill from time to time brought forward only to be abandoned. It ie almost impossible to induce inventore to believe that the old South American plan of concentrating on properly conetructed blanket strakee will retain nearly all the free gold, and that to introduce complicated and expensive machinee to do the work, which can be done as well by eimpler appliances, ie a change for the worse instead of for the better. The error is in enpposing that the loes now sustained on our crushing works is all in the form of free gold, which it is poesible to eecnre by improved methods of amalgamating.

The means in generel uee in this colony for retaining the gold are—amalgamation in the stamp coffere, mercury ripplee, copper platee coated with mercury, and blanket strakee. But before examining each of these processes, it may be well to consider the character of the material to be treated.

Sulphurets.

Beeidee gold, most of onr quartz veins contain the sulphidee of iron, lead and antimony, in greater or less quantities. Other ores are found in the veine, but not nsually to euch an extent as to affect the extraction of the gold; and it is, therefore, not neceeeary to dwell on their character in this short sketch.

The sulphides of iron (iron and areenical pyrites) are the oree most frequently met with, and which carry enclosed in them the moet gold. The galena, or lead ore, also containe gold, but it ie not usually rich, and antimony ore is fonnd in small qnantitiee in nearly all our veins. In some districts we have veins of antimony mixed with quartz and gold, in which case the treatment for separating the gold, and rendering the antimony available, must be a distinct one, and is not entered on in these notee.

Most psrsone engaged in crushing operatione will have noticed that when the enlphidee of iron (pyritee or mundic) are exposed to the action of air or moieture, natural decomposition takee place, and they are elowly converted into oxides; but if kept under water, thie decomposition ie so retarded as to be hardly perceptible. In the qnartz veins a eimilar operation has been going on. Near the eurface, and above the water level, the eulphidee are ueually decompoeed, the oxide of iron thue formed gives to the quartz and adjoining rocke a red or brown tinge. As the depth of the mine increases this decomposition gradually becomee less perfect, until at a distance from the eurface, varying according to the close or open nature of the rock traversed, the sulphides are nnaltered. In all cases it will bs found thst below ths permanent water level, little, if any, decompoeition has taken place. Ths gold thue liberated near ths surfacs has probably helped to form ths rich deposits found at the ontburst of so many of our quartz vsine, and the locking np of a large proportion of the gold in the undecomposed sulphides found at a greater depth wonld tend to decreass the yield of gold obtained from the veins below a certain point.

In Considering this Subject

We may divide the gold fonnd in the qnartz veins into two kinde,—first, the free gold, or such ae ie deposited in the qnartz or slate in a form rsndering it capable of bsing liberated by tbe ordinary reducing process; and second, tbe pyritous gold, meaning that depositsd with, and enveloped by, ths orss of the baser metals—in our case principally with iron in the form of iron and arsenical pyrites. The greater part of the free gold is dsposited in particles largs snough to be separated from its matrix by ordinary crushing, although the degree of finsness to which ths quartz should he rednced must be regulated by the character of ths gold. Some portion of ths gold will still remain imbeddsd in particlse of quartz sand, but with wsll adjnsted arrangements ths amount so lost will not be great, coneidering the charactsr of the msjority of our vsins. Exceptional cases, where the gold is in vsry fine particlee,—and the loss of it in this stats is heavier—will be mst with, when the treatment must be modified to suit each case; but any effective plau of concentrating the enlphidee from the waste tailiugs, would at the eame time eave moet of the free gold lost in thie form.

The pyritone gold ie so cloeely incorporated with the iron oree that it is not liberated in ordinary crushing; and even if it could be so, it ie in euch a minute state of division that the greater part of it would be lost, were it subjected to the treatment found to be the best for obtaining the coarser gold. Under the microscope, gold may be seen on the broken faces of particles of sulphide, when the latter are so emall as to be nearly invisible to the naked eye, and mnch of the pyritous gold ie in this minute state of division. No effectual plan has yet been discovered of extracting thie gold directly by amalgamation, on account of the injurione action of the sulphur and arsenic in combining with and breaking up the mercury.*

Extracting the Free Gold.

Such being the condition of the gold and metallic oree in the quartz, we may now proceed to examine the plane most in favor for extracting the free gold from the crnshed material.

The first of these ie the use of mercury in the coffers, a plan all but univereally followed in tbis colony, although in casee where the sulphidee are in large quantities it is decidedly injurioue, and frequently causes a great loee of gold. Where the quartz contains a large percentage of these sulphidee, they gradually accumulate in the bede or coffere, until they are in sufficient quantity to eicken the amalgam already formed. Thie hae then a tendeucy to break up, and passee away iu minute globnles, or elee it adheree to the particles of pyritee, and ie carried away with them. Inetancee are known where nearly all the free gold in the quartz has been carried away in this form and loet.

Theee reeulte are not confined to this colony alone. Küstel, in deecribing the proceeeee used in California, says, when mercury ie nsed in the coffers, "a great many fine particlee of amalgam adhere together, and form emall spongy blackish lnmps, which are eo light ae to float, and on account of being coated with foreign matters, will not nnite with tbe accumulated amalgam. Of this amalgam very little can be saved; it floate over blankets, copper platee, or ripples. It is, therefore, an error to use mercury in the battery, *if concentration is in use, and the tailings are not saved.* The finest gold ie easier retained by concentration than this floating amalgam." He frrther etates, that where mercury is nsed in the coffers, and the gold ie heavy, they retain from eixty to eeventy-five per cent. of the gold obtained, and where the gold ie light, they get a leee favorable reeult.

Now this proportion ie nearly the same ae that we obtain here from the coffers, without nsing mercury in them; and eo far the uee of mercury in the battery doee not ehow any advantage.

The experience, therefore, both of this colony and California indicatee that the benefit derived from the nee of mercury in the coffers is not so great as is ueually enpposed, and that in many cases it is injurious, as compared with the eystem of using uo mercury in the battery, but having *an effective concentrating process* outside. Unless the latter is present, no changee should be made without careful experiment.

The ripples, or troughs filled with mercury, made use of in thie colony, are all based on the same principle—the fall of eand and water on to the surface of the mercury, when the coarser particlee of gold are taken up and remain in the ripple. They are simple, inexpensive, and ehould retain from twenty to twenty-five per cent. of the total yield, where the gold is of average fineneee.

* This desideratum may yet be found; but the chance of at some time finding it ought not to delay the adoption of the good practical eystem already established.

(To be continued.)

A DISEASE among silkworme, known as *pebrine*, ie now being rapidly and successfully exterminated by destroying the eggs from all the mothe that are affected.

MECHANICAL PROGRESS.

Tide Power.

F. G. Bramwell, C. E., at tho late meeting of ths British Science Association, remarked at considerahle length npon tho necessity which wonld soon be felt for devising some anhstitute for coal, aa a sonrce of motive power; and after pointing out various possible substintca therefor, seemed to infer that the most practical one which presented itself at this time was tide power. On this subject he said:

I would suggest that, in those cases where tbere are largo manufacturing districts within a few miles of the sea, and where there is a rise and fall of the tide, conpled, in the ontset at all events, with natnral indentations of the coast which might be comparatively readily dammed up for the storage of the water, there such storage should be made, thst the water should set to work turbines, whieh will work with very nearly the same percentage of the total power givon out by the watcr, whether thsy aie immersed, or whether they are not—that these tnrbines should be employed in pumping water at a high pressure into accumnlators, and that pipes should be laid on from those accumnlators to the neighboring manufacturing town, and shonld there deliver their power to the consnmers reqniring it, to be used by them in wator-pressnre engines.

Snppose a beginning were made with the city of Bristol, which is very favorable for the application of this snggestion. Here the riss and fall of the tide might he taken at 24 ft. Half a square mile of water enclosed would, after the most lavish deductions for loss, yield in Bristol at least 5,000-horss power, probably sufficient to replace the whole of the power of the stationary engines now at work in Bristol. This snbject appears to me, looking at the opportunity which good turbines give of utilizing the power residing in water nnder constautly varying conditions of head—looking at the fact that this power may be transferred to an extremely small qnantity of water nnder high pressure, and that, therefore, snch water may be transmitted for many miles throngh pipes at low velocities, evsn although those pipes he of no great size. Looking at these facts, I say, I cannot hslp thinking that there is here open to the talent of ths mechanical engineer a new field of enterprise, and one which, if snccessful, would tend to economize the fnel we so much value, and to leave more of it for consumption in metallurgical operations, and in other operations reqniring heat.

We may mention in this connection that the ideas above suggested, or something similar, are about to be tried at the month of Quinepiae river, a stream which empties into New Haven (Conn.) harbor. Great expectations are entertained of the economy and snccess of the experiment, which is to be undertaken on a plan different from anything heretofore employed in ntilizing the power of tide water.

Notes of Mechanical Progress.

The improvements which have been made within the past fsw years in the methods of smelting iron, converting iron into steel, or working np the metal into the various forms required, have been so numerous that it would almost seem as if inventive ingennity must have well-nigh exhausted itself. This is not the case, however. Improvements of all kinds are constantly going on. A new and cheap alloy of iron has lately been produced, which is said to be harder than cast steel, and to be likely to come extensively into use for edged tools. The process of converting pig iron into wrought iron, in furnaces worked by machinery, is also rapidly coming into favor, saving mnch hard labor. So, too, the slag of iron foundriss, heretofore considered valueless, is now pulverizsd and mixed with lime to make bricks, artificial stone and ornamental articles of many kinds.

Yet another improvement consists in an iron smelting furnace in which the smoke passes out through flues nine feet below the top instesd of at the top, as in ordinary furnaces, a plan which, it is stated, effects a saving of 25 per cent. in the quantity of coal required to make a ton of pig iron. The conversion of iron into cast steel by puddling at one operation is also constantly bscoming more important. Everywhere, in these metallurgical and mechanical processes, the spirit of invention and improvement is on the alert, with continnally increasing benefits to civilization at large. And if ws had, as we ought to have, a propsr system of industrial education in operation, our ratio of advance in this great matter would be twice as rapid as it now is.—*Am. Manufacturer*.

Winteroreen Oil in Java.—Wintergreen oil has besn found in two species of plants on the Island of Java, the *gaultheria punctata* and *gaultheria cucocarpa*, which grow lnxuriantly near the tops of volcanos. Quinic acid is also found in hoth of them. This is another instance of the occurrence of plants in the East corresponding to species found on the western coast of North America. The wintergreen so common with us is a great curiosity on the continent of Europe, and the oil made from it is highly prized as a scientific specimen as well as for its agreeable odor.

Influence of Cold Upon Iron.

The influence of cold or frost npon iron seems to be still a snbject npon which there is mnch diversity of opinion. Facts seem to show that there is mors breakage of rails and railroad axles in winter tban in snmmer, and the excess of breakages is still, by most engineers, attributed to the frost, notwit hstanding carefully conducted experiments show no difference; but rather that intonsely cold iron will stand a harder blow, under the same circumstances, than iron at any ordinary weather temperature.

The Freuch scieutist, M. Caroms, who disbelieves in the destrnctive influence of frost, accounts for the appareut discrepency between the results of expsrimeuts aud those noted in practical railroading, from the fact that *poor* iron only is susceptible to more readily breakage when subject to the influence of frost. He reiterates that he has fully satisfied himself, hy receut experiments, that good iron properly formed is not affected by cold, hut that iron of had form or faulty nature is affected by it, and rendered perceptibly more brittle.

Another cause for the more frequent breakago of rails in winter is alluded to as follows: "Again, most railroads are far moro elastic in summer than in winter, owiug to the increased hardness of the ground and ties in winter. If a rail is raised beyoud the grade lines, by a tie whieh has been slevated by the action of the weather upon tbe road bed, and a locomotive strikes it with a blow of twenty-five tons at a point where it mnst find a hearing, the natnral effect of that blow would be to break the rail, whether there was frost in it or not. So it is evident thst the great rigidity given to roads in cold weatber is a better reason for breaks than mere frost."

Steel Boilers in Enoland.—It is said that Mr. Webb, of the Crewe works, Eug., is adopting steel exclusively for the conetructiou of boiler shells, the rivets being also of steel, and he stated that he hopes ultimately to he able to employ the same material for fire-boxes and tubes, to the exclusion of copper and brass. The boiler plates used are all made on the works, and a sample is cut from every plate and tested. The plates are required to have a hreakiug strength of thirty-four tons per square inch, with an elongation of twenty-five per cent., and a five-eighth inch hole punched in the sample strip, about two and one-half inches wido, has to stand being drifted out to two inches in diameter without the plate cracking. The present practice at Crswe affords ample evidence that, by proper care, it is possibls to produce a material which, for boiler making purposes, is vastly superior to the very best wrought iron obtainable.

A Steam Paving Tool.—A novel apparatus of this kind has lately been tried in Paris, namely, a Steam Rammer. As used from time immemorial the rammer is a heavy iron-shod implement which the workman raises about a foot from the ground and allows to drop, as rapidly as he may, successively upon the boulders or blocks to be set. The object of the invention of Mr. Lignier is to save the laborer the severe physical exertion of raising the heavy tool; an exertion producing in time an injurious effect upon the lungs. In the apparatus of M. Lignier the heavy weight is lifted by a small Lenoir gas engine. To the fly-wheel of the engine is connected the rammer of steel, smaller but heavier than the ordinary instrument. The movement of the machine is controlled by the operator; and the rapidity of the operation, accordiag to tho inventor, more than counterbalancss the greater cost.

Closed Cupolas.—Mr. Webb, of the Crewe Iron Works, Eng., is now working his cupolas with closed tops, and, as reported, with a saving of some twenty-five per cent. of blast thereby. If this is so it is a practicsl result of great vslue to iron founders. In the foundry there is also said to be seen some very well plaaned moulding machinery for moulding the cast-iron chimney tops which Mr. Webb is now using, and which are moulded in green sand, and caet with metal only 3-16 in. thick. The mixed iron and brass borings, and the refnse from the brass foundry, are mixed with limestone, coal and oxide of iron or scale, and on this mixture being smelted, the brass settles to tbe bottom and is tapped and run into ingots. This is claimed to be mnch more economical and rapid than the ordinary process.

Soldering Iron to Brass.—The receipt for an alloy has been lately published which was claimed to have the same expansion as iron or steel—the formula being: 3 parts tin, 7¼ zinc and 39⅛ copper. The *Mechanic and Builder* thinks this may make a good solder for brass and iron, but thst the claim of its expansion by heat being equal to that of iron or steel, is erroneous. As it is nothing but a brass containing some tin, like bronze, its expansion must bs like that of all brass and brouzs compounds, viz: about two-thirds more than that of iron; so that it expands almost double that of the latter by the same riee of temperature.

Steel vs. Iron in Cold Weather.—At the recent half-yesrly meeting of the Grand Trunk Railway of Canada, in respect to the rails being exposed to severe cold for a great length of time, the President said that from 3,500 to 4,000 rails on that lins *break every* winter! But he found comfort in the fact thst, in about 110 milea of steel track, only eight or ten rails have broken. Thia would seem to indicate that Bessemer raila are suitable for cold climates.

SCIENTIFIC PROGRESS.

Oxygen as a Stimulant.

Some curions experiments with reference to the influence of an excess of oxygen upon the human system, havo recently heeu described by M. Bert, from which we extract as follows:

Animals wero next confined in superoxygenated air, the pressure of which was over two and one-half atmospheres. Here an nnforseeu resnlt was met with. When the pressure was raised to four or five atmospheres, the animal gave signs of suffering sud fell into convulsions, which were repeated up to the time of its death (in less thau half an hour). These violent effects could not be due simply to pressure, for iu common air the animals hore a pressure of eight or nine atmospheres without inconveuience. They are due to the large proportion of oxygen, which, entering the blood, acted poisononsly. To produce the same results by simply nsing air, it would be necessary to exceed fourteen atmospheres. Oxygen, therefore, when its proportion in the blood is notably increased, acts as a poisou.

At a later period, M. Bert was ahle to apply a pressurs of twenty atmospheres. With common air, the convulsions due to poisoning by oxygen appeared at fifteen atmospheres.

Still M. Bert thinks (and he gives proof of it) the injurious action of oxygen must not be supposed only to commence there. It begins to act thus at six atmospheres, or (as more refined experiment may yet show) at even lower pressures.

The benefit derived from use of compressed air-baths, on the one hand, aud many of the accidents that happen to workers in miues, in diving-bells, etc., on the otber, appear to be due, in great part, to the introduction into the system of a quantity of oxygen greater than in the uormal state; and it is with oxygen as with other poisons, small doses of which may be salutary.

If æronants, who are stopped in their upward course, not by failure in the bslloon, but by the impossibility of living, wished to soar higher, they might accomplish this if they took with them a supply of oxygen to which they could have recourse when the air became too rare. The mechanical arrangements for breathing this conveniently can be easily conceived.

On the other hand, the industries which subject workmen to pressnres over five or six atmospheres, entail suffering and death; which ovils might be remedied if there were substitnted for ths air a mixture of air and nitrogen, calculated so that the pressure of the oxygen should not exceed a certsin low limit.

An Artificial Mirage.—At the late meeting of the British Association of Science, Professor Everett read a paper ou "Mirage," in the conrse of which he described an interesting experiment devised by Prof. Maxwell, in which the beautiful effects of mirage were obtained by means of three liquids in a cubical vessel with plate glass sides six inches square, the lowest liquid being a saturated solntion of alum, the highest pure water, and between them a thickness of about a quarter of an inch of Scotch whisky, containing enough sngar to make its specific gravity intermediate bstween those of the other two liquids. It is much more refractive than either of them. Triple images were obtained, with great distinctness, of all the objects in an extensive landscape, the middle image beiug inverted, and either slevated or depressed, according to the position of the eye. The range of triple vision extended to objects as far as 10 degs. from the horizontsl direction, either ahove or bslow, and all three images were sufficiently distinct to show whether white blinds were up, down, or half-way down, in a row of houses at the distance of 700 yards.

Effect of Change of Barometric Pressure on Human Beings.—Mr. Paul Best has shown in *Les Mondes* that in the destruction of life by diminishing the barometric pressure, the direct cause is the deficiency of oxygen, and that an animal that will die with the pressure reduced to 18 cm. will endure a reduction to 6 cm. before life is extinct, if oxygen is added. And the converse is also true that the svil of too great pressuro comes mainly from the too large amount in that case of oxygen, dilution with nitrogen prolonging lifs. He remarks that workmen employed at great elevations would accordingly find benefit in an arrangsment for supplying more oxygen; and those occupied in diving for pearls, etc., by a contrivance for supplying nitrogen.

The Leaf a Vicarious Organ.—Some interesting experiments have lately been conducted by M. Calliet, to determine the precise action of plant-leaves in the absorption of water in the liquid form. They havs led him to the conclueion that leaves do not absorb water while the roots are fully supplied with moisture. But when the ground is too dry for the roots to obtain it, if water be brought in contact with the leaves, they will absorb it for the nourishmsnt of the plant. The experimenter thns educes the fact that the action of the leaf is a vicarious and not a natural function.—*Pop. Science Monthly*

Binary Stars—Supposed Interesting Discovery.

The motious of the fixed stars hitherto observed are supposed to he elliptic, but Mr. Wilson, at a late meetiug of the Royal Astronomical Society of London, read a paper wherein he stated that a careful examination of all the observations made upon the double star. Castor, hsve led to the remarkable conclusion that Castor and its "double" are moving in hyperholas, that consequently their mutual relation are but temporary, and that each will at some time in the future move independeutly of the other.

Their relations to each other are similar to that of a certain class of comets which are sometimes brought within the temporary influeuce of our sun, bnt which after passing their perheliou, in our system, move off into space with a curve which will never admit of another return to our own system.

This supposition, if confirmed, will lead to a more close examination of ths movemeuts of other binary systems of stars; for it cau hardly be considered that Castor can be the only exception to the general rule.

This alleged discovery suggests some most interesting and startling problems, and opens up to our contemplations an infinitely varied and complicated system of movements in space, by which suns as well as comets, even if they do not come into actual contact, may at least meet with perturbations, which must change not ouly their own orbits, but the orbits of their dependent planets as well.

It may also bccome a pertinent enquiry whether some of the double stars, whose apparent distsnce apart has seemed too great to justify the hypothesis of a physical counection may not afford still other difficulties of motion, not yet met with in our study of the stellar universe.

A New Iron Product—Iron-Steel.

Mr. G. B. Galloway, of London, has invented an improvement in the manufacture of iron which produces an homogeneons metal, to which he has given the name of "Iron-steel." According to the *Iron Age*, the purification of the iron is accomplished by the use of a specially prepared fuel, consisting of creosote and other dead oils made into fuel, with a mixtnre of duff coal breeze, the refuse of sawmills, various waste materials and peat. This fuel contains no sulphur, and has the tendency to diminish the sulphur or phosphorus which ores generally contain, and, therefore, the first stage of manufactura produces a purer product than when coal or coke is used. He also uses zinc, tin and lead in the mixture of the metals, as may be required to produce the quality of iron wanted.

The necessity for puddling is obviated by arranging the blast, which is to be of superheated air and steam, in different jet pipes, which are to enter the cupola at various places. The air and steam pressure is varied and regulated by valves or stop-cocks in the pipes, and the forcs of the blast puddles np the iron. Air and steam from a branch pipe impinges upon the metal, which ruus from the furnace by a circuitous route, is thus further purified and made into rolls or balls of the like consistency in heat, and is ready for the steam-hammer or rolling-mill. The patent speeifies a mode of making special qualities of homogeneous iron for ship and boiler-plates, which iron would be but little corroded by water, and would be etrong and tough. A special quality is also made for armor plates rolled to V-form in the horizontal sectional view. The outer sheets would be tempered like cutting chisel steel, which would have the tendency to prevent the penetration of shot by breaking it up, while the mode of filling up the divisional spacea in the plates with wood or other fibrous material would deaden and absorb the concussion and effect of shot.

Sunlight in Ocean Depths.—An ingenions plan was devised by Professor Agassiz, on his late expedition, for determining how far the ocean depths were permeable to sunlight. A plate prepared for photographic purposes was inclosed in a case so contrived as to be covered by a revolving lid in the space of forty minutes. The apparatus was sunk to the required depth, and at the expiration of the period stated, drawn np and developed in the ordinary way. It is said that evidence has thus been obtained of the operation of the actinic rays at much greater depths than hitherto supposed possible.

The Occupants of Space.—The nnmber of stars visible to the naked eye, in the entire circuit of the heavens, has been usually estimated at about 6,000; an ordinary opera glass will exhihit something like ten times that number; a comparatively small telescope easily shows 200,000; while there are telescopes in existence with which, there is reason to believs, not less than 25,000,000 stars are visible. And yet when all of these ars seen and numbered, the eye will have visited but a mere speck in the illimitable hounds of space.

Repeated spectroscopic measurements made last year by Professors Zollner and Vogel, in Germany, show that the velocity of rotation of the sun on its own axis is at the rate of six hundred and sixty miles an honr.

OUR MINING SHAREHOLDERS' DIRECTORY.

ASSESSMENTS.

Name of Co. Location.	Secretary. S.F.Office, Assm't.	Levied.	Delinq't.	Sale.
Alaska Con. M. Co. Lyon Co , Nev.	G. R. Spinney. 320 California St.	Sept. 3.	Oct. 7.	Oct. 23.
American Flag M. Co. Ely District.	Geo. R. Spinney. 320 California St. $2 00.	Sept. 2.	Oct. 8.	Nov. 1.
Arizona & Utah M. Co. Washoe.	C. H. Fish. 419 California St. $1 00.	Aug. 14.	Sept. 17.	Oct. 7.
Atlantic & Pacific Con. Co. El Dorado Co.	A. T. Hoeh. 419 California St.	Sept. 11.	Oct. 15.	Nov. 2.
ALTONA G. & S. M. CO. Grass Valley, Cal.	Daniel Wilder. 28 Merchants' Ex. 10.	Oct. 3.	Nov. 2.	Nov. 25.*
AUBURN G. M. CO. Placer Co., Cal.	Geo. W. Dixon. corner Mont. & Cal. 25.	Sept. 13.	Oct. 14.	Nov. 6.
BECKWITH M. CO. Ely District.	Wm. H. Watson. 302 Montgomery St. 20.	Aug. 19.	Sept. 23.	Oct. 23*
Bowery Cone. M. & M. Co. Ely Dist.	C. E. Elliott. 419 California St. $1.	Aug. 9.	Sept. 24.	Nov. 10.
Calaveras G. M. C. Calaveras Co.	T. B. Wingard. 318 California St. 50.	Aug. 26.	Oct. 1.	Oct. 22.
Caledonia S. M. Co. Storey Co., Nev.	R. Wegener. 414 California St. $2 00.	Sept. 11.	Oct. 16.	Nov. 6.
Cedarburg let N. Ex. Co. California.	J. N. Webster. 506 Montgomery St. 10.	Sept. 9.	Oct 14.	Nov. 2.
Cedarburg, let S. Extension. California.	J. N. Webster. 506 Montgomery St. 4.	Sept. 11.	Oct. 12.	Nov. 12.
Chapman M. and M. Co. Ely Dist.	F. Swift. 415 Montgomery St. 50.	Sept 16.	Oct. 24.	Nov. 15.
Cherokee Flat Bine G. Co. Butte Co., Cal.	H. Pichoir. 603 Washington St. $1 00.	Sept. 6.	Oct. 11.	Oct. 29.
Condor M. Co. Ely District.	H. C. Kibbe. 419 California St. $1 00.	Sept. 12.	Oct. 23.	Nov. 13.
Con. Antrim M. Co. California.	H. Voorman. 411 California St. $5 00.	Aug. 9.	Sept. 24.	Oct. 16.
Consolidated Virginia. Washoe.	D. T. Bailey. 401 California St. $3 00.	Sept. 21.	Nov. 1.	Nov. 21.
Cook & Geyer M. Co. Storey Co. Nev.	C. H. Fish. 419 California St. 50.	Sept. 4.	Oct. 8.	Oct. 28.
COTTONWD CREEK M. C O. California.	Jos. L. King. 411 California St. 7.	Aug. 19.	Sept. 23.	Oct. 15*
Daney M. Co. Lyon Co., Nev.	Geo. R. Spinney. 320 California St. $1 00.	Aug 29	Oct. 2.	Oct. 23.
Deerer Con. M. Co. Utah T.	J. L. King. 411 California St. 20.	Sept. 18.	Oct. 18.	Nov. 7.
Empire M. Co. Grass Valley.	S. Pinkham. 401 California St. $5 00.	Sept. 6.	Oct. 12.	Oct. 29.
Empire M. Co. I. T.	O. F Balcom. 426 Montgomery St. 50.	Aug. 5.	Sept 6.	Sept. 30.
EXCELSIOR S. M. CO. Nye Co., Nev.	W. A. Kollmyer 640 Washington St. 10.	Sept. 26.	Oct. 29.	Nov. 22.
Fallis S. M. Co. Ely District.	A. Treadwell. Merchants' Ex. 25.	Aug. 26.	Oct. 2.	Oct. 22.
Francis M. Co. Mariposa Co.	T. F. Oronise. 409 California St. 75.	Aug. 20.	Sept. 20.	Oct. 15.
Globe M. Co. Gold Hill.	W. E. Dean. 419 California St. $1 00.	Sept. 4.	Oct. 7.	Oct. 25.
Golden Chariot M. Co. Idaho.	L. Kaplan. Merchants' Ex. $1 00.	Sept. 12.	Oct. 18.	Nov. 8.
Greenville M. Co. Plumas Co., Cal.	H. C. Kibbe. 419 Cal. St. 50.	Oct. 1.	Nov. 5.	Nov. 26.
Hale & Norcross S. M. Co. Washoe.	J. F. Lightner. 438 Cal. St. $5 00.	Aug. 22.	Sept. 26.	Oct 6.
Hahn & Hunt M. Co. Ely District.	L. Kaplan. Merchants' Ex. $1 00.	Aug. 30.	Oct. 4.	Oct. 25.
Imperial M. Co. Washoe.	W. E. Dean. 419 California St. $1 00.	Oct. 1.	Nov. 6.	Nov. 29.
Ingomar S. M. Co. Ely Dist.	C. S. Neal. 419 California St. 60.	Aug. 12.	Sept. 18.	Oct. 10.
Ivanhoe S. M. Co. Ely Dist.	Daniel Buck. 331 Mont. St. 50.	Aug. 10.	Sept. 10.	Oct. 8.
Justice M. Co. Washoe.	R. Wegener. 414 California St. $2 00.	Oct. 2.	Nov. 6.	Nov. 27.
LADY FRANKLIN G. & S. M. CO. Cal.	J. S. Luny. 507 Montgomery St. 50.	Sept. 24.	Oct. 28.	Nov. 18.
Kingston M. Co. Ely District.	L. Kaplan. Merchants' Ex. 50.	Aug. 26.	Oct. 1.	Oct. 21.
Lemon M. & M. Co. LEureka Dist.	I. T. Millikin. 608 Merchant. $1 50.	Aug. 14.	Sept. 17.	Oct. 21.
LOUISE M. CO. incoln Co., Nev.	Wm. H. Watson. 302 Montg'ry St. 50.	Sept. 14.	Oct. 18.	Nov. 9.
Lyons & Wheeler M. Co., Arizona.	T. W. Colburn. 409 Cal. St.	Sept. 2.	Oct. 4.	Oct. 21.
Mahogany M. Co. Idaho.	T. J. Owens. Express Building. $2 00.	Sept. 25.	Nov. 4.	Nov. 20.
Minneeota G. & S. M. Co. Idaho.	Wm. Willis. 419 Cal. St. 50.	Sept. 4.	Oct. 12.	Nov. 2.
Monitor Belmont M. Co. Nye Co., Nev.	B. B. Minor. 411½ Cal. St. $1 00.	Aug. 20.	Sept. 23.	Oct 14.
National M. Co. Nye Co. Nev.	B. B. Minor. 411½ California St. 50.	Sept. 26.	Oct. 28.	Nov. 18.
Newark S. M. Co. Ely District.	D. T. Bailey. 401 Cal. St. 75.	Sept. 24.	Oct. 30.	Nov. 23.
Newton Booth Con. M. Co. Ely Dist.	R. F. Scott. 314 Cal. St. 25.	Sept. 5.	Oct. 7.	Nov. 4.
North Ore Fino. Idaho.	C. F. Balcom. 426 Montg'ry St. 50.	Aug. 22.	Sept. 28.	Oct. 19.
OHIO CONS. G. M. CO. Calaveras Co.	W. A. Knapp. 432 Montg'ry St. 10.	Sept. 24.	Nov. 2.	Nov. 23.*
O. H. Treasure M. Co. White Pine.	D. J. Jennings. 401 Cal. St. $1 50.	Aug. 9.	Sept. 16.	Oct. 8.
Pacific Borax Co. Esmeralda Co.	E. Leuba. 507 Montg'ry St. 20	Sept. 5.	Oct. 7.	Oct. 31.
Page & Panaca S.M.Co. Ely Dist.	L. Kaplan. Merchants' Ex. $5 00.	Aug. 14.	Sept. 19.	Oct. 11.
Pauper M. Co. Idaho.	J. L. King. 411 California St. 50.	Oct. 1.	Nov. 9.	Nov. 30.
Pennsylvania. White Pine.	Daniel Buck. 331 Mont'gy. $1 20.	Aug. 8.	Sept. 9.	Oct. 5.
Placer O. M. Co. Placer Co., Cal.	G. W. R. King. 411 Cal. St. 15.	Sept. 16.	Oct. 22.	Nov. 8.
POCAHONTAS G. M. Co. El Dorado Co.	D. A. Jenninge. 401 Cal. St. 50.	Sept. 17.	Oct. 24.	Nov. 16.
Pride of Mountain M. Co. Winnemucca.	T. W. Colburn. 419 Cal. St. 6.	Aug. 26.	Sept. 30.	Oct. 21.
QUAIL HILL M. & W. Co. Calaveras Co.	T. F. Oronise. 409 Cal. St. $5 00.	Aug. 22.	Oct. 2.	Oct. 24.
Red Cloud S. M. Co. Ely District.	E. P. Clark. 331 Montg'ry St. 25.	Aug. 24.	Sept. 24.	Oct. 16.*
Savage M. Co. Washoe.	E. B. Holmes. 401 Cal. St. $10 00.	Sept. 10.	Oct. 16.	Nov. 2.
SILVER SPROUT M. Co. Kearsarge Dist.	B. Wingard. 318 Cal. St. 50.	Aug. 26.	Oct. 8.	Nov. 8.*
SILVER WAVE M. CO. White Pine.	J. W. Clark. 418 Cal. St. $1 00.	Sept 21.	Oct. 26.	Nov. 25.*
Silver West Con. M. Co. Eureka District.	F. R. Bunker. Montg'ry Block. 50.	Aug. 26.	Oct. 5.	Oct. 20.
South Charlot M. Co. Idaho.	J. L. King. 411 Cal. St. 50.	Sept. 6.	Oct. 12.	Nov. 4.
Stickle M. Co. Calaveras Co. Cal.	T. B. Wingard. 318 Cal. St.$1 00.	Sept. 4.	Oct 7.	Oct. 28.
Succor M. & M. Co. Washoe.	W. H. Watson. 302 Montg'ry St. $1 00.	Sept. 20.	Oct. 11.	Nov. 21.
Tallulah M. Co. Humboldt, Nev.	Geo. A. Hill. 18 Montg'ry St. $3 00.	Aug. 26.	Sept. 24.	Oct. 15.
Tecumseh C. S. & M. Co. Calaveras Co.	F. J. Hermann. 634 Wash'n St. 15.	Aug. 29.	Sept. 12.	Oct. 1.
TELLURIUM G. & S. M. CO. Amador Co., Cal	Wm. H. Seery. Ont'Clay & K'rny. $1 00.	Sept. 3.	Oct. 5.	Oct. 26*
Tehama Cone. Schell Creek.	W. W. Steteon. 414 Cal. St. $2 00.	Aug. 2.	Oct. 1.	Oct. 19.
VICTORIA & INP. M. CO. Utah T.	Wm. H. Watson. 302 Montg'ry St. 10.	Aug. 14.	Sept. 18.	Oct. 12*
Washington & Creole M. Co. Ely District.	F. D. Cleary. Merchants' Ex. 50.	Sept. 9.	Oct. 19.	Nov. 11.
Yuba Gravel M. Co. Nevada Co., Cal.	J. A. Gordon. 108 Battery. 25.	Sept 17.	Oct. 21.	Nov. 11.

MEETINGS TO BE HELD.

Name of Co. Location.	Secretary. Office in S.F.	An'l or Sp'l.	Date.
Baltimore American. Washoe.	J. L. King. 411 Cal. St.	Annual.	Oct. 7.
Cook & Geyer. Storey Co., Nev.	C. H. Fish. 419 Cal. St.	Annual.	Oct. 14.
Emma Hill Cone. M. Co. Utah.	L. C. Fowler. 302 Montg'ry st.	Annual.	Oct. 7.
Eureka Con. M. Co. Eureka Dist.	W. W. Traylor. 419 Sansome St.	Annual.	Oct. 14.
Eureka G. M. Co. Nevada Co., Cal.	R. Wegener. 414 California St.	Annual.	Oct. 17.
"420" M. Co.	H. O. Howard. 523 Montg'ry St.	Special.	Oct. 7.
Exchequer M. Co. Washoe.	D. T. Bagley. 401 Cal. St.	Annual.	Oct. 21.
Floral Springs W. Co. Pioche District.	E. McGuffin. Express Bld'g.	Annual.	Oct. 7.
Heckendorn Ax Co.	L. Leorne. 513 Jackson St.	Special.	Oct. 26.
Indue G. and S. M. Co.	John Fowler. Merchants' Ex.	Andnal.	Oct. 19.
Julia O. & S. M. Co. Washoe.	A. Noel. 419 California St.	Annal.	Oct. 14.

LATEST DIVIDENDS—Within Three Months.

Name of Co. Location.	Secretary. Office in S. F.	Amount.	Payable.
Belcher M. Co. Washoe.	H. C. Kibbe. 419 California St.	$2.00.	Sept. 10.
Black Diamond Coal Co. California.		½ per cent,	Oct. 1.
Crown Point G. & S. M. Co. Washoe.	C. E. Elliot. 419 California St.	$3 00.	July 5.
Eastport Coos Bay Coal. Oregon.	I. L. Pool. Merchants' Ex.	$5 00.	Sept. 14.
Keystone Quartz M. Co. California.	L. Vesaria.	50.	July 10.
Mahony G. & S. M. Co. Idaho.	T. J. Owens. 402 Mont'gry, St.	$1 00.	Aug. 7.
Meadow Valley M. Co. Ely Dist., Nev.	T. W. Colburn. 419 California St.	$1 00.	June 20.
Raymond & Ely M. Co. Ely Dist., Nev.	A. J. Moulder. 419 California St.	$7 00.	Sept. 10.
Pioche S. M. Co. Ely Dist., Nev.	C. E. Elliot. 419 California St.	$1 00.	Aug. 10.

—* Advertised in thie journal.

Stock Sales for Week Ending Oct. 3—S. F. Stock & Ex. Board.

NAMES OF COMPANIES.	Past.	Shs. in ft.	FRIDAY. Shs | Prices.	SATURDAY. Shs | Prices.	MONDAY. Shs | Prices.	TUESDAY. Shs | Prices.	WEDNESD'Y Shs | Prices.	THURSDAY. Shs | Prices.	Tot'l Sh's Sold.	Decln Advnc
Adame Hill				55 1¼@ 1¾				100 1½	155	
Alpha	$	300	20 50 @34	80 35 @36	60 35 @36	5 36	10 33	30 30 @31	235	3
Alpa		800	20½ 100 43c	50 43c		225 4½@ 4¾	90 4¾	165 4¾@ 4¾	630	½
American Flag	$	2600	11½ 150 15@15½		120 15¾@16	705 16 @16¾	1125 16 @16¾	350 19 @20	2450	4½
Arizona & Utah	*	1900	19½ 100 1¾@ 1⅞		70 1½		60 1½	50 1½	280	⅛
Belcher		1040	10 1065 87 @91	367 85 @87	535 84 @90½	815 86½@92	675 84½@86	75 85	3536	6
Baltimore		1200	20 140 2¾						140	
Baltimore Ann	*	1200	20							
Bowery	$	1000	30 50 1¼		100 1	50 1	100 1	130 1	380	¼
Bacon										
Buckeye						10 2½			10	
Best & Belcher		224	100		300 6½@ 7		50 6		400	
Bellevue	$	8100	2½ 25 2½					25	25	
Belmont			150 6 @ 6¾		360 5½@ 5¾	245 5½@ 5¾	160 5	815	1¾	
Chollar	*	800	10 575 54½@60	200 56 @60	145 55 @57	50 57½@60	165 54½@57	575 50 @51	1710	9
Caledonia	*	5000	4 860 31 @33	635 30½@32	300 28¾@30½	455 26 @27½	580 21 @23	575 19 @22	3465	11
Cons. Virginia	*	1150	205½ 755 55 @60	290 64 @65	950 70 @77	855 60 @70	630 56 @60	320 46 @52	3798	8
Confidence	*	130	192		250 7 @ 7½				250	
Crown Point	*	600	166⅔ 385 110@113½	401 110 @115	850 102 @110	140 102 @106	755 85 @100	792 75 @88	3523	25½
Central		70	357			30 10	85 9		115	
Calaveras		3200	6¼							
Condor	$		50 1½			110 1 @ 1¼	200 67½@ 1½		410	
Chapman	$		12		50 1¼	300 1¼	700 1¼		1050	
Chief of the Hill		1000	30 590 10 @10¾	130 10½	50 10¾	840 10¾ @11¼	760 10¾ @11¼	450 18 @19	2820	8¾
Cederburg		1200	20		100 7	400 7 @ 7½	80 7 @ 7½	50 7 @ 9	630	
Dancy		2000	12							
Eureka Cons	*	1000	30 305 19 @19½	215 18¾@19	300 18 @18¾	110 17¾@18	365 17¼@17½	165 17¼@17½	1440	1¾
Eureka		1650	12				50 14		50	
Exchequer	*	400	20	30 13			5 14	10 12½	45	
Eclipse	*	700	20			200 10			200	
Empire M. Il	*	1200	16 1195 53½@ 6¾	785 6½@ 6¾	530 6¾@ 6¾	445 6¾@ 7	350 6 @ 6¾	860 6¾@ 6¾	4165	¼
Excelsior	$	4500	2⅝							
Gould & Curry	*	1200	4 55 177 @185	17 176 @180	20 177	62 175 @182	82 160 @175	179 130 @147	415	38
Golden Chariot	*	750	14¼ 30 10½	55 11	25 11½	90 14 @15	360 16 @20	380 18 @19	940	8½
Globe	$	1600	12½	20 75c	15 90c				35	
Con. Gold Hill	$		40							
Hale & Norcross	*	400	4 65 72 @75		295 71 @73	100 72 @76	75 72 @73		535	
Huhn & Hunt	$	3600	8¾ 150 5 @ 5¾	350 5 @ 6¾	50 5¾	300 5¾	100 6½	310 5½@ 6	1260	⅞
Hermes	$		50 11½			150 7½@ 8	30 8¼	150 9½	230	2
Ida Elmore	*	300	17½ 300 10 @11			250 10¾@11	500 12 @12½	200 12 @13	1250	6
Imperial	*	184	543¾ 970 6 @ 7	900 6¾@ 7	1115 6¾@ 7	510 6¾@ 7⅞	815 5 @ 5½	1390 5½@ 7¾	5630	⅛
Ingomar	$	1000	40 200 2½	210 1¾	100 1⅝@ 1¾	100 1¾			610	
Independent		1800	14			100 45c			100	
Ivanhoe	$					300 3			300	
Julia	*	2000	15 250 5 @ 5¼	450 5	695 5¼	650 5¼@ 5½	600 5½@ 6	950 6 @ 6¼	3595	1
Justice	*	3000	7 70 7 @ 8	105 7¾@ 8	110 7¾@ 7¾	60 7⅝@ 7¾	170 7 @ 7½	550 5 @ 6	1095	2
Kentuck		95	121		10 200	5 200	50 50c		20	
Knickerbocker	*	1200	20				350 4¾@ 4½	485 4 @ 4¾	1750	
Mammoth		1800	20				50 50c		50	
Meadow Valley	$		2¾ 1605 23⅞@25	1352 25 @26¼	930 25 @26¼	795 23 @24	745 23⅛@23¾	275 23½@24½	6195	½
Mahogany		720	13¾ 25 6	50 5¾@ 6	450 5 @ 6	10 5	155 5 @ 5½	60 5½	750	½
Mocking Bird					25 1½				25	
McMahon										
Newark	$		1130 5 @ 5¼	300 4⅞@ 5	515 4⅞@ 5	200 4¾	170 4½@ 4¾	170 4¾@ 4¾	2575	¾
Ophir	*	1400	12 240 60 @67½	400 65½@69	245 67 @75	590 61 @76	120 61 @63½	260 55 @60	1855	7½
O. H. Treasure	$	800	26¾ 220 4½@ 4¾		150 4¾@ 5	115 5¼@ 5¾	50 2¾	30 5½	563	¾
Overman		1200	10¾ 70 60 @60½	65 60 @60½	55 57 @58	35 55 @56		70 45 @46	295	14½
Occidental	$	800	12½	300 10 @11						
Pioche	$	1000	20 210 17¼@18	100 18 @18¼	385 18 @18¼	195 17¼@17½	425 16 @17	280 15¾@16	1590	2
Page & Panaca	$	2400	16⅞ 1000 2¼@ 2¾	290 2½	50 2½	385 2½		285 1⅞@ 2	2015	⅜
Pes Vine	$	1000	30					100 70c	100	
Phenix			230 3⅝	650 3⅝@ 4¼	515 4 @ 4¼	1320 4⅛@ 4¼	50 3⅞	250 3⅞@ 4	3013	⅜
Pioche West	$		200 4⅝		310 4⅝		25 4½	225 4½	535	⅛
Raymond & Ely	*	4000	7¾ 335 160 @163	220 158 @163	300 150 @155	253 150	470 140 @146	530 128 @126	2138	27
Savage	*	800	20 95 95 @100	150 90 @93	535 84 @90	356 84 @89½	700 79 @84	355 71 @75	2190	25
Seg. Belcher	*	1600	40 175 85 @88	566	40 63 @65	145 62 @63	35 65 @60	135 48 @50	533	18
Sierra Nevada	$	3000	7¾ 450 15½@16½	225 15¾@17	150 16¾@17¾	250 16½@17	265 15½@16	438 14 @14¾	2453	1¾
Succor	*		3 7600 10 3¾				20 4		30	
Silver Hill			300 7	60 7	250 7 @ 8	235 8	250 8¾@ 8¾	350 8½@ 9	1445	½
St. Patrick		1800	12¾							
So Charlot		660	300¾					100 1¼	100	
Seg. Caledonia	*									
Trench			20 250							
Wash. & Creole	$	200	150 250 4¼	300 4½@ 4¾	65 4¼	50 4¼		100 3½	765	¾
Woodville		1400	20 200 3	115 3 @ 3¼		50 3¼	115 3 @ 3¼	100 3¼	580	¼
War Eagle	*	1000	10			100 7	400 7 @ 7¼		500	
Utah						50 3			50	
Yellow Jacket	*	1200	25 741 81 @87	320 81 @82	120 76 @79	315 75 @80	690 68 @81	570 59 @68	2756	19
Yule Gravel		400	25							

NOTES.—†—California. *—Washoe. ‡White Pine. §—Ely District. ¶—Eureka District. ‖—Idaho. ¦—Nearly.? —Over.

S. F. Stock and Exchange Board.

THURSDAY, Oct. 3d, 1872.

Salee at the Stock Board for the week ending Wedneesby the 25th ult., amounted to $2,000,000; Meadow Valley and Chief of the Hill were the features. This week etocke have been generally depressed with comparatively few salee at low prices. There eeems to be but little dispoeition to operate and a general etagnation of the mining ehsre market is the result. The amonnt of money disbursed as dividends by mining companiee in September was $522,000, against $339,400 during the same month last year; $172,500 in 1870; $123,700 in 1869; $246,000 in 1858; $397,500 in 1867. Asseeements levied thue far thie month are as follows: Greenville M. Co., Plumae, Co. Cal., 50 cents; Pauper M. Co., Idaho, 50 cents; Imperial M. Co., Waehoe, $1; Justice M. Co., Washoe, $2; Altona Gralel M. Co., Grass Valley, Cal., 10 cents. In our list of assessments levied last month, in our last week's issne we neglected to mention that of the Natoma M. Co., Nevada, 50 cents; Consolidated Virginia, Washoe, $3; Mahogany M. Co., Idaho, $2; and Cederburg let Southerly Ex., Co., 4 cents; Excelsior S. M. Co., Nye Co., Nev., 10 cents; Ledy Franklin M. Co., Alpine Co., Cal., 50.

Friday ealee were light and pricee low. Belcher fell $3; Chollar, $6; Caledonia, $1.50; Gould & Curry, $10; Ophir, $3; Jacket, $5; Imperial, $1; Empire Mill, 50 cents; Hale & Norcross, $6; Overman, $1; Savage, $10; Seg. Belcher, $10; Alpha, $2.

On Saturday stocks were irregular eome being higher and others lower. From highest rates of previous morning Cons. Virginia advanced $7, Ophir $4, Alpha and Meadow Valley each $2, Imperial, Justice and Sierra Nevada each $1. Savage declined $7, Gould & Curry $6.50, Belcher and Yellow Jacket each $3, Exchequer $2, Chollar Potosi, Ida Elmore and Raymond & Ely esch $1.

Monday, ealee were small and no improvement in prices. Ophir rose on the afternoon Board $9; Cone. Virginia, $9; and Belcher, $5. Caledonia declined $1; Crown Point, $5; Savage, $6; Overman, $3; Yellow Jacket, $2.

Tueeday, market etill dull. Prices generally closed lower than on previoue day, Belcher declined $4; Crown Point the same; Caledonia $5; Cons. Virginia, $10; Yellow Jacket, $4; Ophir, $13; Raymond & Ely, $2; Meadow Valley and Savsge, each $2.

Wednesday, no improvement in market; afternoon prices closed with Reymond & Ely $13 lower; Crown Point $10; and othere in proportion.

To-day pricee ehow a still further decline and many etocks are lower than they have been for monthe. This will be eeen hy reference to the columne of our Stock Table which shows that few stocks are higher than they were laet week, moet of them being lower.

Below is news from the prominent minee later than that to he fonnd in our Mining Summary:

BELCHER.—A letter of the 28th ult. eays the south drift, 1000-foot level is in 214-feet, and the face shows quartz mixed with eome ore. Thie level is turning out better than was anticipated. The stopes on the 1100-foot level are looking well. Hoisting throngh ehaft will be commened as soon as station can be timbered and chute put in. Air-boxes are heing pnt in on the 1200-foot level, in order to reeume work on that level, and sinking another winze further south for the purpose of ventilation. The incline is now down 581 feet bolow the 850-foot level, but still in very hard ground. Drift north from the incline on the 1000-foot level is in 126 feet, still in porphyry and quartz. The drift northeast from the incline on the 850-foot level is in fifty-two feet. Thie drift is being run for the purpose of sinking a winze to the 100-foot level. The new ore-dumpe, tracks and ewitches sre now completed. On the 2d inst. the car samples ran $101.

CHOLLAR POTOEI.—During the week ending Sept. 29th, 1,980 tons of ore were extracted and sent to mill, of an average aseay value of $34.52.

SAVAGE.—For week ending Sept. 29th 926 tons of ore were extracted, aesaying $25.74 per ton; 1,241 tons were sent to mill, and 150 tons remsined on dumps.

HALE & NORCROSS.—From this mine, during week ending Sept. 28th, 728 tone of ore were extrscted, 600 tons sent to mill, leaving 803 tons on dumpe. All the damage caused by the recent fire has been repaired. There are no material changes in any portion of the mine.

RAYMOND & ELY.—On the 29th the Superintendent shipped $33,476; on the 1st inst., on September acconnt $33,286; previons shipments in September, $302,094; making a total for the month of $335,570, equal to $11,185.66 per day. Two day's work wss lost on account of breakage of main driving wheel of the new mill. The mine continnes to improve from the 433-foot level down. The following letter, which we clip from the *Stock Report*, explains itself:

SAN FRANCISCO, October 3, 1872.

Raymond & Ely Trustees and Stockholders: I am entirely familiar with the claim of the Kentucky Silver Mining Company at Pioche, and with ite location and works. The locations of all the claims now asserted against your Company by the Kentucky are subsequent in point of time to your locatione, by virtue of which you entered into possession. Besidee this, I am satisfied from the position, course and dip of your lods, that it wae and ie impoesible for the Kentucky Company to reach your lode or works from their ehaft without drifting through a heavy wall or body of country rock. There ie not the elightest cause of alarm. Respectfully youre. JAMES H. HARDY.

From the EMPIRE mine $318,074 was ehipped on the 25th ult. The NORTH STAR mine reduced 155 tons of ore during the week ending September 28th, and left 20 tons on the dump. The CHIEF OF THE HILL is looking well; last bullion shipment $5,000. Car eamples from the Pioche assay $207 per ton.

MINING SUMMARY.

THE following ie mostly condeneed from journals puhlished in the interior,in proximity to the minee mentioned

California.

ALPINE COUNTY.

I X L.—Alpine *Chronicle*, Sept 21: This week they have heen taking ore from the face of the tunnel valued at $3,000 per ton.

AMADOR COUNTY.

EAGLE QUARTZ MINE.—Amador *Ledger*, Sept. 28: Workmen have stripped off the earth from the ledge for 30 ft. parallel with the lead and abont 12 ft. down on the face of the rock.

AMADOR.—A very rich discovery was made last week on the 270-ft level of the Bunker Hill and it extends up to the 170-ft. level. The rock is well charged with free gold and very rich in sulphnrets. There is rock enough in sight to run a 40-stamp mill for 4 years. The present rock is paying from $50 to $75 per ton. The Keyetone is extracting its regular $35,000 to $40,000 every month. The Original Co. is running a 40-stamp mill and taking ont a great amount of bullion.

LOOKS FINE.—The rock in the ehaft being sunk on the mine eonth of town is looking remarkably fine. A few days since the workmen struck a vein that exhibits free gold in nearly every peice that has been examined.

FOLOER—Thie mine ie heing thoroughly proepected.

BUTTE COUNTY.

LONO FLUME.— Oroville *Record*, Sept. 28: Hendricke & Co. are putting in a flume, 6 ft. wide, extending from their claim, at the head of Oregon Gulch, to the river, 1½ miles.

CALAVERAS.

UP COUNTRY.—Calsverae *Chronicle*, Sept. 28: MOSQUITO DIST.—Herryhousen Bros. crushed 17 tone yielding $45 per ton. In the mine of S. Smith & Co. at 50 ft., levele are being run showing a body of ore 110 ft. in length and 9 ft. wide, the faces of the levels exhibiting the ssme size and quality of ore. Over 300 tone are on the dump; no stoping having heen done as yet and the levels are only 5 ft. wide. The first-claee rock paid $42 per ton; No. 2 is expected to mill $10 per ton.

The etopes of the Grasshopper turn out more and richer rock than expected.

WEST POINT DIST.—At the Ohio Cons. an old tunnel connecting with the shaft, is being retimbered for drainsge purposes. Hoisting works will be put up immediately.

Forty tons of rock from the Blazing Stsr paid $64 per ton.

Excellent ore is heing exposed at the Lone Star and plenty of it. The Joeephine looks well. Zacatero, idle.

RAILROAD FLAT DIST.—The new machinery at the Wolverine ie in running order. The mine is in first rate working condition and the levels, stopes and hottom of the mein ehaft, show large quantities of very fair pay ore.

Petticoat shaft 440 ft. deep; the north level is in nesrly 400 ft. with ore appearing in the face and widening.

The Sanderson cleaned np $1,700 this week, the reeult of 36 tons of ore.

GWIN.—A recent clean up after a run of 12¼ days, yielded over $10,000.

RAILROAD FLAT.—San Andreas *Citizen*, Sept. 28: Prussian Hill improving. Last week there was a large lot of ore crnshed. Lewis Fairchild & Co. have a fine veinover 9 ft. thick. The level has been run from the hottom of the shaft 90 ft., showing a splendid body of ore. At a late crushing of 18 tons of rock, $45 per ton was realized. There are 250 tons on dump.

VALLECITO GRAVEL CLAIM—This claim yielded last week, from only a partial clean-up, $5,000.

ANOELS.—Mr. Potter, of the Big Mine, intende euspending the stamps for a few days, to renew the foundation of his hoisting-works. He will also put in new pumpe in the 600-ft. ehaft.

SCIEFFORD—This mine hss 12 ft. in width of fine-looking quartz, which abounds in sulphurets, and prospects well.

LLOYDS' QUARTZ MINE.—This claim ie down 30 ft., exposing a solid ledge of paying rock, 3 ft. wide. The rock ehows gold to the naked eye all the way down.

COPPEROPOLIS.—The Union Copper Claim has 10 or 12 men at work roasting rock.

SHEEP RANCH MINE.—Ferguson and Wallace hsd a olean-up last Sturday of $2,000. Their rock averaged $60 per ton.

LLOYD'S GRAVEL CLAIM.—This claim ie progressing favorably, and the lead is hetween 200 and 300 ft. wide; 11 men at work.

KERN COUNTY.

COUNTESS OF TYROL.—Havilah *Miner*, Sept. 21: Work will recommence on the Conntess of Tyrol next week.

BRIOHT STAR.—A new lead of unusual richness hae lately heen struck. Its owners have eome 30 men at work. The new 10-stamp mill will be completed Tuesday next.

THE NEW DIST.—Prospecting on an exten-

sive scale ie going on in Grizzly Mountain Dist., with conciderahle success.

LOS ANGELES COUNTY.

Bullion.—Los Angelee *News*, Sept. 21: There were 42 bars of Eclipse bullion received at the depot yesterday.

NEVADA COUNTY.

Empire. — Grase Valley *Union*, Sept. 25: Since the strike made a week ago we learn $30,000 hae beeu realized. The rock being crushed yields $40 to the ton, with the ledge in the drift showing as rich as wheu first strnck.

Rich.—A wheelharow load of gravel from the Redding, the other day, yielded 100 ozs. of gold.

Idaho.—The regular clean-up on Mouday last of the blanket washings, exclneive of the battery, for 12 daye' crushing of 15 stampe, produced $17,000 in gold, or a trifle over $1,416 a dsy.

Knights of Malta.—(Same paper, of 29th): The miners commeuced blasting on Friday, ou the southeast side of the ehaft, 90 ft. from the surface. The ledgo at thie point averagce from 6 to 10 ft. in thicknece.

Daist Hill.—34 loads of qnartz from the second level south, at 250 ft. on the incline, was cruehed and cleaned np on Mouday, and resulted in a yield of $41.25 a load.

Rising Star.—Nevads *Transcript*, Sept. 26: Since Mr. Moran took charge the lower tunnel has been run from 449 to 535 ft., and the middle tnunel cleaned ont snd ropaired for 350 ft. In thie tunnel for 250 ft. the ledge averagee from 4 to 5 ft. in thicknees, and they are running a chnte to get at the rock. They have 40 tone on dump.

PLACER COUNTY.

Salsig.—Auburn *Herald*, Sept 28: The rock they sre taking out presente every appearance of being richer than the laet cruehing, which yielded over $60 per ton.

Pans Out Well.—Placer *Argus*, Sept. 27: Last week the St. Patrick crushed 30 tone of rock—producing $4,297.76.

SIERRA COUNTY.

Brush Creek.—Downieville *Messenger*, Sept. 28: The owners of the Brush Creek, at the Mt. Honee, have pnmped the water out preparatory to prospecting it thoroughly.

Sierra Buttes.—The Sierra Buttes Co. are bnsy pntting in s foundation for their new mill. They havo 227 men on their pay-rolls.

SISKIYOU COUNTY.

Will Start.—Yreka *Union*, Sept. 21: The new mill of the Eliza Co. will be ready to stsrt up by the 1et of Oct.

TUOLUMNE COUNTY.

Sprino Gulch Mine.—Sonora *Democrat*, Sept. 28: We learn a rich etrike wss made on Tuesday. At 60 ft. the vein is 8 ft. thick and roported rich through out.

Nevada.

ELKO COUNTY.

Superior Dist.—Elko *Independent*, Sept. 28: Hendereon and De Witt have run a tunnel 60 ft. and expect every moment to etrike the ledge. The width of the ledge on the surface is between 6 and 8 ft. The ore is hase or galena with eome eulphurete. The next location is the George Washington; depth of shaft 18 ft. The width of the ledge is not determined.

The shaft of the Eaet ie ahont 18 inohes wide on top.

Bull Run.—During laet week 5 of the most prominent mines—the Montana, Tiger, Potosi, Burning Moscow and Uncle Ben—were bonded to partiee who mean hueineee.

Cope.—Cor. same: The Hunter main shaft is down 20 ft., through a nice looking vein averaging 15 inches in width. Eight tone have been worked, the pnlp aeeay going $365 in silver and $25 per ton in gold.

Another recent discovery is the Sonthern Light. The ledge is 12 ft. wide on which a ehaft has beeu eunk 15 ft., the last 4 ft. of which has procured some extremely rich ore, the aseays going from $300 to $1,200 per ton in gold and silver.

The Great Easteru has a large ledge in sight, on which a tunnel hae been run a considerable distance.

On Argenta Hill.—The Independence Co. hae heen for the laet 2 months engaged in running a tunnel to tap the ledge at a depth of 140 ft. It ie in cloee to the vein, having to-day atrnck a etratum, 6 inches wide, of good ore.

The Excelsior.—North ehaft is down 37 ft. through a good ledge and the bottom looks hest of all. The Sonth drift adit-level is run over 150 ft. The ledge is 14 inches wide and would mill $80 to the ton. There is a splendid pile of rock on the dump.

The Susquehanna.—Ledge crope out for a quarter of a mile in length and is fully 6 ft. wide. A shaft hse been snnk 10 ft. and a tunnel rnn 95 ft., which has nnwatered the mine at a depth of 35 ft. The ore ie of a low grade, aesaying about $35 to the ton.

EUREKA.

Silver West Cons.—Eureka *Sentinel*, Sept. 22: From 24 to 27 tons of bullion ie ehipped every third day. The average value of the bullion ie ahout $290 per ton.

Ruby Hill S. Co.—The tunnel ie in 227 ft., and there is ore in the face with indicatione of soon approaching a body of the same qnality ae that worked by the Eureka Cone.

The Furnaces.—At the Richmond but one of the furnaces ie in blaet, producing six tons of hullion per day from 36 tons of ore smelted. At the Silver West 59 tone of bnllion have been made in six daye, worth $280 per ton. At the Eureka Cons., four furnaces are in blaet. The daily yield ie 15 tone of bullion worth $400 per ton.

Lemon Mill.—Thie mill went into active opsration ou Monday, and is working to a charm.

Jackson Shaft.—Thie perpendicular shaft ie down 300 ft., and ie well timbered throughout. A drift hae been etarted southerly towards the old Jackeon works.

Welsh Kino.—A vein of ore shows itself in the face of the workiugs.

ELY DIST.

Review.—Ely *Record*, Sept. 22: W. F. & Co. ehipped during the past week $115,755.05 in hullion.

Huhn & Hunt.—The tunnel ie in 300 ft., and in that dietance four ledgee have been etruck. On the firet drifts have been run to the eset and the west. The drift running east ie in about 15 ft., and at the end a perpendiculsr ehaft has beeu sunk 46 ft. In this ehaft ie a vein of ore 3½ ft. wide that will work from $400 to $500 per ton, and which will be stoped ont when milling faoilities have beeu secured. Further on in the tunnel we etrike the second ledge. On one side of the tnnnel this ledgo ie ¾ of a foot wide, and on the other it ie 1½ ft. The rook looke extremely rich. The third ledge ie abont 2 ft. wide, end some very good ore hae been extracted from it. The fourth ledge ie sbont 10 ft. from the fsce of the tunnel, and was hut recently struck. A proepecting drift hae been run to the east seversl ft. The ledge is abont four ft. wide, and hae every appesrance of containing first-class ore. Work ie heing proseecnted vigoronely day and night. A perpendiculsr shsft hse been commenced on the hill-eide about 90 ft. from the month of the tunnel, over which hoieting worke will he erected.

Bowery.—The principal work performed in the last two weeks hae been in cribbing the ebaft, which is 200 ft. deep.

Magnet Mill.—To-day the mill will commence working on a contract to crueh 1,000 tons of ore for the Chief of the Hlll mine.

Pioche Champion.—The Supt. hae a contract let to sink a etraight shaft 300 ft. This shaft will be eunk about 130 ft. above the old one. The mine ie looking well.

Arkansas.—The whole face of the weet drift at the 250 ft. level ie a maee of ore which aeesye hetween $300 and $400, and ie 3½ feet wide. Ore ie being tsken out ae faet as poseible from this drift. The incline is down 275 ft. and the ledge looks No. 1 at that depth and retaine a uniform width of three ft.

Pioche Phenix.—Sinking on the new ehsft and making three ft. per day; aleo msking three ft. per day on the winze in the old worke. The hoieting worka for thie Co. are nearly finished snd will lesve S. F. on the 1et of October.

Chief East Ex.—Mr. Hardy, Supt., hss beeu einking on it. At 50 ft. they lost the ledge, but after drifting 13 ft. it was found agsin, snd a body of ore tapped which runs up into the hundrede.

Sultan.—Thie mine ie about 400 ft. from the ehaft of the Peavine. The ehaft ie 100 ft. deep with ore in eight that aseays $200 to the ton. They hsve ou the dnmp several tone of good milling ore.

First Whistle.—The Washington and Creole Co., having all ite machinery placed and in good order, blew ite first whistle on Wedneeday, 18th.

Mazeppa.—At 140 ft. the mine produces ores that assay from $100 to $1,000 per ton.

Excelsior.—A winze has been eunk on the pitch of the vein, about 150 ft. from the shaft, and a ledge stnck that would astonish any mining expert in thie camp.

Alpe.—The Sup., ia having the shaft timbered. The machinery for the hoieting works having arrived a full force ie at work getting the mine in readineea to take ont ore ae soon ae poeeihle.

Sunbeam.—Is timbering ite ehaft and getting it in good working order.

The Hermee Co. have all the machinery for the hoisting works on the ground and have already erected a good eubetantial honee.

The Chief of the Hill is looking better than ever; 5 loads sent off yeeterday seeayed from $150 to $350 per ton.

HUMBOLDT.

Bullion.—Unionville *Silver State*, Sept. 28: Amount ehipped from the Arizona, since our last issue, wae $6,005.

Adams.—The tnnnel ie in 160 ft. The ledge is very regular and well-defined the whole length, and the ore of excellent quality.

Central Dist.—Mnllen & Co.'s mill approaches completion. The battery is up, and all the machinery in poeition except one settler, which ie on the way. In the Teameter in the lower tunnel a vein has heen expoeed, nearly 4 ft. wide, carrying very rich ohlorides, and occaeionally a small bunch of galena.

Sacramento Dist.—A rich ledge has heen discovered; it ie a blind one about 20 inches wide and well defined as far ae developed. The ore containe a high percentage of silver besides being literally covered with gold.

Emily Lenge.—They commeneed operatione a few days ago, and have struck a deposit of ore of fair qnality. A eample aesayed containe $150 in eilver and $18 in gold per ton.

Potoei.—A contract has been let for running 50 ft. of tunnel.

REESE RIVER.

North River Tunnel.—Reese River *Reveille*, Sept. 21: Running a cross-cut to cut the Sunnyside ledge. In about 12 ft.; rock very hard. The drift on the North River ledge ie in 25 ft. further than at the time of our last report; ledge looka well; rock good.

Freehold.—The shaft is heing etill eunk for the purpose of opening a new level.

Saratoga.—A crushing ie being had at the Manhsttan mill.

Moroan & Muncey.—The ledge at the 300-ft. level is about 2 ft. thick and the ore coming ont ie of the very best quality.

Savannah.—The hoieting works sre nesrly completed and will be started up during the coming week.

Kino Alfred.—The shaft is down 50 ft.; working night snd day.

South America.—The old levele have been cleaned out and work has commenced on a ehaft to be eunk from the 300-ft. level.

Saybrook.—A cave occurred in the 150-ft. level this week of ahout 60 tone of esrth.

Lone Star.—Some good ore coming out.

Whitlatch Union.—Breaeting on the ledge.

Oregon.—The heavy operatious throngh this shaft are continned with unabated vigor.

Grove Tunnel.—First rate ore coming from the different levele.

Belmont—Belmont Co.—Tho contractore who took the work in the Canfield sre sinking and pushing forward the lower levele faet. Firet installment of machinery for the hoieting worke on the Highbridge arrived a few daye eince. A Cameron eteam pump will be put in thie mine.

El Donano.—Ground wae hroken to-day for thie Co.'e new mill. They are crowding men in their 2 minee, the El Dorado South aud Arizons, in hoth of which large breaste of ore are already exposed. The large chimney in the El Dorado measuree over 80 ft, all of which is good milling ore. Working 40 men.

Monitor Co.—Increasing their force daily. This Co. have their ore houee filled, and large hreaete of fine ore resdy to take out. Working 35 men.

Josephine Co.—Thie is a new compsny, incorporated for the purpose of working the exteneione of the El Dorado South and Canfield minee. They have a shsft down 110 ft.

WASHOE.

Local Summary.—Gold Hill *News*, Sept. 28: The Savage dsily yields 190 tons, worth $26 per ton. The incline is down 184 ft. helow the 1,500-ft. level, and einking is harder than at our lset report. Work on the 1,500-ft. level is almoet suepended for the preeent. The ore body on the 661-ft. level of the old worke ie heing hreaeted out both north and south, and is yielding finely.

Jacor Little.—A large body of good milling ore ie developed in the upper tunnel, and the Supt. is in S. F. making arrangments for a 20-etamp mill.

Ophir.—Sinkiug the shsft is suspended for the preeent. A new ststion hss beeu opened at the 1,460-ft. level, and a drift etsrted for the ledge. The work of prospecting the 700 and 1,100-ft. levels is progressing finely. The new developments sre proving very estiefsctory.

Hale & Norcross.—General prospecting operstions are vigorously proeecnted in the two lowest levele. The deepening of the incline ie continued. New pnmps of improved capacity are heing put in position.

Chollar-Potosi.—Dsily yield 170 tone, worth $31 per ton. The ore breaste in the Belvidere, Blue Wing, and other ore-producing eections are looking and yielding finely.

Cons. Virginia.—Work on the excavatione for the new hoisting worke ie being pushed with vigor. The croee-cute on the 500-ft. level are being driven ahead throngh low grade ore. The main north drift on the 1,167-ft. level ie heing pushed eteadily forward with the face iu porphyry.

Belcher.—Daily yield 260 tone. The ore hreaste at the 1,000-ft. level ehow improvement. The main incline is einking at a good rate and the 1,100-ft. etation will he ready for ore hoieting in ahont 2 weeks.

Crown Point.—Daily yield 460 tons, from the 1,100 and 1,200-ft. levele. The winzes and croee-cute indicate the ore hody at the 1,300-ft. level to he of great width, and the ore ie of fine quality.

Utah.—The new shaft designed to tap the eastern ore hody, hae attained 170 ft.

Sierra Nevada.—The ore hreasts in both the npper and middle portions are looking and yielding finely, keeping the mill eteadily running. Cleaning out and retimbering the drifte in the 500-ft. level is progreeeing finely.

Occidental.—Work in the lower main aditie continued without ceesation.

Gould & Curry.—Good progress ie made in einking the incline. The 1,600-ft. station is opened and a drift started for the ledge. Prospecting the different levels and drifts is progreesing.

Silver Hill.—Sinking the main ehaft ie carried on continuously. Drifting west on first level is continued. The ledge is expected to be cut with this drift within 3 or 4 days.

Julia.—The shaft is down 900 ft. and the sinking reeumed. The main weet drift on the 800-ft. level is in 135 ft. The hoieting works are nearly completed.

Overman.—It will be two or three weeks before operations will be reeumed.

Woonville.—The erection of the new hoisting works ie heing driven ahead energetically.

Imperial-Empire.—Sinking the incline is progressing finely. The 1,700-ft. station is opened and a main drift started for the ledge.

Buckeye.—The new ore development contiuuee improving, the einking of the main incline progreeses and the eump is ahout completed.

Red Jacket.—New shaft down nearly 30 ft.

Insurance. — Work is progreesing finely. Some good ore is heing extracted, though the extent of the ore body is undetermiued.

Kentuck.—Daily yield 65 tons.

Yellow Jacket.—Daily yield 20 tons. Drifting north at the 1,300-ft. level.

Knickerbocker.—Msin weet drift in 144 ft., the face showing streake of quartz.

WHITE PINE.

Bullion.—White Pine *News*, Sept. 21: The shipment during the paet week, was $5,243 81.

Treasure Hill Mines—Eberhardt & Aurora Co.'s Mines.—Sinking on the Eberhardt and Blne Belle ehafts, and are down 190 ft. The South Anrora tunnel is heing pushed ahesd to connect with the De Paee chamber, which is expected to be made in a few daye.

Beecher Cons.—The ore iu the Blaiedel worke hae improved during the week. Shipping ahout 30 tone daily to the Manhattan mill.

Sunbeam.—Working in the Moscow shaft in a body of good ore.

Mammoth.—The hody of ore in which work has been done for eome time has improved in quality, and the mine showe hetter than at any previoue time. Assorting ore for ehipmeut to mill.

Noonday.—Preparing to ehip ore to mill.

East Shenovoan.—The drift to form a connection between the air ehaft and South drift ie heing pushed ahead fast.

Copper Glance.—The northwest drift ie being pushed forward and breasting out ore continues at the same time. Drifting from the bottom of the north ehaft to make connection with the northwest drift. Ore of good grade met with.

Silver Hill Mines.—Silver Plate.—The workinge generally are looking well. The ore taken out has improved.

Western Slope, White Pine Mountain.—Trench.—Working 6 men in the eset drift. The ledge ie 3 ft. wide of $200 ore. In the north drift a new strike hse been made—the ledge heing about 18 inchee wide, very rich-showing horn eilver.

Outside Dists —Schell Creek.—The Tehama M. & M. Co. hse a large force at work on the mill and mine and making very good developments of their property. The McMahon worke 10 men, and has about 400 tone of good milling ore on the dump.

In Silver Cañon snd Centerville the miuee are looking well; and about 20 men sre employed on the Clayton, taking out 3 or 4 tona per dsy of good milling ore, which goee over $100 per ton. The Grace hae a large smouut of good ore in eight and on the dump. The mill at Centerville will start up ahout next Wednesdsy, on ore from the Clsyton.

The Silver Gste hsa eome very good ore on dump; snd the Fairview has also very rich ore.

Robinson Dist.—The Canton Co.'e furnace is expected to etart up in a few days. The mines in the new etrike are looking well and are improving in quality snd qusntity of ore. Coneiderable prospecting is going on. We are informed that the Hayes mine hae been sold to s S. F. Co. for $50,000.

Mills.—Bio Smoky.—Shnt down to make necesesry repairs. Will start up in a few days on ore from the English Co.'e mines.

McMahon.—Schell Creek *Prospect*, Sept. 21: Running tunnel and taking out considerable fine ore.

Kavanaoh Tunnel.—Working eteadily with good prospects of soon cutting the main ledge of the hill.

Jupiter.—Working on tunnel and shaft taking ont ore of good quality.

Morton.—Grading and etriping for future work.

Schell Creek.—Engaged on main tnnnel which ie in about 200 ft. Ledge expected eoon.

Queen Spring Mines.—Labross Tunnel.—Working conetantly.

El Capitan.—No change.

Silver Chabiot.—Will etart up next week.

Ruby Hill Diet.—Working eteadily.

Arizona.

Yavapai Co.—Prescott *Union*, Sept. 14: Lynx Creek is producing a great deal of gold dust, Mr. Crawford worked 10 daye with a rocker, and the reeult wae $90. Pointer, Shelton and others have heen and are doing well. The creek-hed, for eome 10 or 12 miles, is being worked.

At Weaver 30 men are at work in the plscers; Marcus & Co. are rnnning their araetras, and all are making money.

Colorado.

Bullion.—Denver *Western Miner*, Sept. 21: The ehipmente for the week ending Sept. 12th have amounted to ahout $75,000.

Caribou.—Denver *Tribune*, Sept. 25: The Carihou mill, Middle Bolder, has ehipped $20,000 worth of silver to New York within the last few days.

Our Mines.—Georgetown *Miner*, Sept. 19: Larson & Young are working the west half of the Commonwealth, near Mill City, and taking good ore from a large vein.

Work on the Wild Wagoner and Hiawatha tunnele, Mill City, is being pushed with energy.

The Cliff is heing operated ou quite extensively.

The Victoria, Republican Mt., is being worked hy shafting and tunneling. The shaft on the lode, a week or two eince, was 45 ft. in depth, and the tunnel to strike the vein 65 ft. below the eurface, wae in about 60 ft. from the mouth, and probably about 30 ft. from the vein. The crevice on the Victoria is about 14 ft. wide. Palmer & Nichols ehipped on the 11th inet. two hars of hullion. One 713 60-100 ozs. 938 fine, and the other 1,020 ozs., 932 fine.

Mines and Mining in Colorado.

The First Discoveries.

The region now embraced within the limits of Colorado, first begsn to attract public attention in 1858. A party of miners from Georgis, under the lesdership of Green Russell, are credited with the first gold discovery in what wss then known as the "Pike's Pesk country." This discovery was made on Dry Creek, a few miles south of the present site of Denver, and was followed by others on Cherry Creek, and at different points along ths Platte river above the confluence of these two streams. Reports of these discoveries, of course greatly exsggerated, were not long in reaching the Missouri river; and immediately thereafter excited gold-hunters began to wend their way towards the new El Dorado. The trials, vicissitudes and sufferings of those early pioneers have furnished abundant material for most thrilling history. The progress and development of the mining interests of this region are thus describ-ed hy a gentlemen, a resident in the mining district :—The first important gold discoveries wsre followed by a large influx of population to the mining region. During the first two years operations were confined to the placers in various localities and to the washing of surface dirt of a few gold lodes in ths vicinity of what is now Central City. During the succeeding year, explorations were rapidly and widely extended, and discoveries were made, at intervals, throughout the whole foot-hill region, from Wyoming (then Nebraska) on the north, to New Mexico on the south — a distance of more than 300 miles.

The Mineral Region.

This mining region has a width varying from forty to sixty miles, hence including about fiftssn thousand squars miles. Subsequent explorations and developments have established ths following facts relative to this great mining region of Colorado, namely :— First, That the plain country adjacent to, and along the entire lsngth of, ths eastern base of the mountsins, is underlaid with inexhaustible beds of coal, of the lignits olass, which is of such superior quality as to adapt it for all requisite uses, whether for steam, smelting or domestic purposos. Soms of these coal deposits are found in horizontal, others in vertical heds, varying in thickness from fifteen inches to fifteen feet. Bordering these coal measures are deposits of fire-clay, equal in quality to any in the world, and in quautities sufficient to supply the wants of the nation. The same belt furnishes suppliss of limestone, sandstone, gypsum and iron ore. This is ths outlying belt of ths mineral region. Second, That the lower foot-hills for a distance of ten to twenty miles from the plains, are traversed by copper-hearing veins, in nearly all of which a trace of gold or silver, or both is found, and in paying quantities in some of them; and, Third, That back of these, extending to the Snowy Range, and including some districts beyond the Range, are found the great gold and silver-bearing veins, which, together with the placers, have hitherto constituted the bullion-producing source of Colorado.

These veins extend east and wsst, showing many changes of character in different localities, and are believed to exist along the Range, with possibly some interruptions, from the northern to the southern boundary of Colorado. Previous to 1865, the region of country immediately surrounding Central City was the great gold-producing section, hy its placer and lods mines. The only other sections of Colorado which produced gold were Park, Lake and Summit counties, whers rich placer minss were and are yet worked successfully. Tho mines worked in these sections wsre gold mines — producing gold containing but little silvsr. In 1865, howsver, rich silver lodes were discovered in Summit county, and in 1866 others in Clear Creek county, more particularly in ths vicinity of Georgetown. The latter have so steadily increased in production as to make them the great rival of the gold mines of Gilpin county, in ths production of the precious metals. In 1870, in Boulder county, silvsr lodes wsre discovered and worked np to this dats successfully.

The Ledges.

In ths autumn of 1871 extensive deposits of silver ore were opened up in Park county; also gold and silver mines in Conejos county. Nearly all the gold veins carry a large amount of silvsr; many of the silver veins carry some gold, and others carry copper, lead and zinc. A large area of the mineral region has not yet been explored, and new discoveries are made every year. This wealth is open aliks to everybody, whsther of foreign or native birth, for purchase or occupation; the only condition be-ing, that in order to secure a government title to a claim, the applicant must either be a citizen of the United States or must have declared his intention to become a citizen. The mines of ths Tsrritory are now worked at depths varying from one foot to seven hundred feet. The mines thus far discovered, if thoroughly opensd and persistently worked to their full capacity, would yield in silver and gold bullion upwards of $25,000,000 annually. In the gold and silver region already discovered, alono, there is a fiold for the employment of a popula-of many thousands. Not one-third of the field in Middle and Northern Colorado has been occupied, and the whole sonthsrn region is comparatively undsveloped.

Systems of Mining.

Lack of an economical and intelligent system of mining; lack of rsasonable snd adequate reduction-works; excess of prodigsl and unscientific experiments, and lsck of railroad fscilities, hsvs in times past militsted against the profits of mining in Colorsdo. All these impediments have either disppeared or are rapidly disppearing. Mining hss been systematized, and is conducted fsr more economically than hith-erto. The cost of reducing refrsctory ores hss declined from $75 to $25 per ton. The completion of extensive smelting works alresdy projected at the base of the mountains, will make a still furtber improvement in this particular. Railways are completed, and in operation, to and along, the base of the mountains, and are in process of construction to the very heart of ths mining centers. Finally, unliks many other mining regions, this entire belt is well-wooded and watered. Situated under the shadow of the Snowy Range, snmmer showers fall upon it, and the streams are constantly swollen during the summer by the melting snows. The thousand little valleys among the foot-hills up to the Range are fertilo, and the grassy glades afford the finest pasturage in the world. The season is short for the cultivation of cereals—but soil and climate are unexcelled in adaptation to the dairy, the growth of vegetables and culture of small fruits. Gilpin county, the smallest in extent of all the counties, and perhaps least adapted to agriculture, had, during the past season, thirteen hundred and twenty acres of land undsr successful cultivation—this apart from the grazing lands.

Undeveloped Regions.

Aside from this belt, which has been briefly outlined, there are known to be deposits of gold and silver in the parks, and beyond the Snowy Range. There may bs mines as rich, perhaps richer, west of the region described than any yet discovered within it. That region is yet to be explored and prospected. In addition to the mines above noted, there are in various parts of the Territory soda and salt spriugs, from which an almost unlimited yield might be derived, aud soms of which have already been made available. As soda and salt are both used in the reductiou of ores, their presence in the Territory is of great importance in connection with the mining intsrsst.

Production of the Mines.

When it is taken into consideration that Colorado has had no other exportation than from her mines since the settlement of the Territory, it cannot fail to impress the reader with her immense wealth, and how important an influence their present highly-successful developments are having on her rapid and unexampled growth and prosperity. Their present yield has been nearly doubled in the past two years. Wages of laborers in mining districts range from $2.50 to $3.50 per day; of miners, from $3 to $7 per day. Board is from $6 to $8 per week, but men board themselves who choose (and there are many such), for $3 to $3.50 per week. As an example of what the mines, undar all their disadvantages may be made to produca, and do produce, it may be added, that while not more than three-fifths of the mals adult population of Gilpin county are engaged in mining, the yield of bullion in that county for 1870 was $1,997,575; the population of the census was 5,480. Thus will be seen a prodnction of $365 a year for every man, woman and child in the county. Allowing three—a very low estimate—to each family, $1,095 was ths average family income for the year. Such, very briefly, is the mining region of Colorado; so extensive, so rich and varied in resources, so attractive in all its features and auxiliaries, that is offered to the frse occupation of industrious and law-abiding people, from all parts of the world.

North Star Mining Co.

Ths annual meeting of the North Star (Grass Valley) Gold Mining Company was held on the 25th inst., and resulted in the re-election of the old Board as follows: A. K. P. Harmon, Thomas Bell, William B. Bourns, J. W. Gashwiler and John Faull. Subsequently, Mr. Harmon was chosen President; D. A. Jennings, Secretary; and Stephen Moore, Superintendent. Ths company have worked 6,601 tons of ore, yielding 8,735 assay ounces gold, valued at $153,349, or $17.55 per ounce; net value of sulphurets worked, $8,324; from tributors, $2,945; from ore crnshing, $2,495; from premium on hars, $296; from miscellaneous sources, $9,898—making total receipts of $177,-307. Adding $1,243 for value of supplies on hand at commencement of year, gives a grand total of $178,550. The total disbursements for the ysar aggregate $182,687, or $4,137 in excess of the receipts, which is the amount of ths present liabilities. At the commencement of the last fiscal year, the company owed $13,879. This indebtedness has not only heen wiped out, but the sum of $18,644 has been expended iu permanent improvements at the mine and mill, while dividends of $27,000 have been paid to stockholders. The other disbursements for mine and mill supplies, labor, taxes, insurance, etc., show an aggregate of $123,164. As there aro 3,000 shares in the mine, of the par value of $100 each, stockholders have reaped 9 per cent. iuterest for the year on their investment. During the previous year, stockholders received $76,500 in dividends, against $6,000 in 1869-70 and $45,000 in 1868-69. The mine paidits first dividend, after incorporation, in June, 1868. Thus in four years it has paid $154,500, but in the mean time it has collected $60,000 from stockholders, leaving a net profit of $94,500, or $31.50 per share. This is less than 8 per cent. interest per annum on the capital stock.

The Army Worm.

Entomologists would tell us that "army worm" was simply the vulgar name for ths *Leucania unipuncta*. Howevsr vulgar it may be, we prefer to say army worm, or as it is sometimss called, grass worm. It derives its name from the fact thst whsn it appears to the injnry of the agriculturist, it comes in countless thousands or millions, and voraciously devours all vegetation in the form of leaf or grass in its progress.

Having made havoc of the fields in which they first issue from the pupæ state, they takeup their march for adjoining fields in countlsss multitudes and lay waste as they advance, everything green that they can appropriats, nor are they at all dslicats in their tastes or very discriminating. Thsir gensral habit is to travel and devour by night, hiding as best they can by day; bnt if famishing for food, will travel by day.

Ths van of ths army of invaders and devourers advances at the rate of from two to six rods an hour; so that unless discovsrsd in season will oftsn do great damage befors thsir presence is known or suspscted. The best bar to their progress is a doubls furrow, in depth, by ths plow, leaving a perpendicular or slightly ovsrhanging side which they are unable to ascend.

When a multitude have collected in the ditch, sprinkle dry straw over thsm and firs it, which kills them and loaves the ditch opsn and ready for another legion of ths advancing army, which a few times repeated destroys ths grsater part moving in that direction.

THE ARMY-WORM.

Ths sggs from which are hatched ths pupæ, are deposited by a moth or miller in shape and size, as repressnted by the cut. They are more usually deposited on dry uplands in seasons in which a wet wintsr has bsen prsceded by a succession of dry ones, the accumulated moths of the dry winters being forcsd out of their low land bresding places, by sxcessive moisture and seek better grounds in which to securs the perpetuation of their kind.

In such cases thsy go as an army of millers, generally unseen, becauss their flight is in the night, and lighting down upon a given spot deposit their countless eggs, upon the surface of the ground, around the stalks, and among any species of vegetation they may find. On hatching, and while quite small, they require but little food and move hut little; in a few days, however, they becoms ravsnous, and take np their line of march.

They are common to many parts of the Atlantic States at certain seasons, and a variety of the same species is known in California, and an army of thsm in the space of a few days we are informed, not many weeks since, destroyed to the extent of 200 acres of sugar beets for the Sacramento Beet Sugar Company at their farm four or fivs milss east of Sacramento, before their ravages could be checked.

However, the company still have a thonsand or more acres of beets, and will turn off sugar in a few weeks and ths months following by the thousands of barrels.

Benefits of Invention.—In the course of his recent speech at the Mschanical fair in Newark, N. J., Horace Greeley said: About twenty-one years ago I groped my way up a dark stairs in Fulton street, New York, to see the sewing machine. Elias Howe, Jr., the inventor, sat there, wild and seedy-looking, frightened at the approach of a stranger. He thought I had come to steal his idea from him. When I told him I had not come to take his sewing machine, but to tell people there was a sewing machine, he became communicative, and told me what he hoped from his wonderful combination of the needle and the shuttle. Now there are a million sewing machines in use, and six immense factories are busy turning out more to meet the demand. I believe that, as we improve in our lightening of human labor, by deputing the heaviost muscular work to that faithful servant, steam, that we will also improve the condition of wages and labor; that ths system of weekly pay now in vogue will give way to even a better systeu, where the laborer will have a personal and direct interest not only in the quantity but the quality of his work, and that he will have a coöperstive interest in the work which capital now commands. Thus labor and capital will be brought gradually and quietly into better and nobler accord.

Mining Timber Manufactory.

This establishment for ths manufacturs of mining timbers, says the Carson [*Appeal*, was srected some thres years ago, and is situated just east of town on the Lovejoy rsnch, and so nesr ths railrosd, that the cars load on a side track that pssses by, and closs to the building. This enterprise was startsd and is owned by a combination of gentlemen interested in mines, mills, and ths V. & T. R. R., and figurss largely in ths development of the mines on the Comstock lode by greatly rsducing the expenss of framing the timbers used in all those mines; for it is estimated that one machine working ten hours a day, will do ths work of forty mechanics. It reqnires but five operatives to do this work, and they need not all be skilled workmen. From the cars the timber is taken into the building in which a large circular saw is running, passed to and cut off about the right length, by a man whose business it is to operate this saw. It is thsn taken by two laborers to the framers, laid upon this heavy iron frame which revolves on a hinge onsquartsr of a circls. Here it is hastily measured, fastened solid in place by two scrsws, and thsn passed hy ths operator to this unique and complicated portion of the machine, who, with his hands on ths reins, drives with as much sase and prscision as a skillful horssman can drive a well trained steed.

When all is ready he turns his timber loose to meet ths knives and saws that are to maks it fit for use in ths mines. In its passage it first encounters a complication of revolving knives and saws, combined in such a manner that the saws cut the shoulder on each end of the stick at any length you wish, and at the same time the revolving knives cut the wood out at tho proper depth for ths tenon, and is cut just alike at the top and bottom of ths timber at the same time. Ths operator then passes it on to a pair of circular saws, one on sach end, and is cut off true and of ths required length. The machinery is thsn reversed, the timber runs back, the carriage containing it revolves a quarter circle and is run forward again to meet ths knives and saws, passing through the samo process as befors. It is then run back and is a complete mining timber, ready for use. Ths screws are loosened, the timber loaded ou a car at the door and shipped to ths mines. Its capscity for ten hours labor is about 40,000 feet.

The machinery is driven by a stsam engine, aud the chips and sawdust falling into an openiug helow the machinsry, pass to the furnace and are used for fuel to keep up the fires. The machinery is perfect in all its parts, and the entsrprise a success to its owners and a great benefit to the miners. In 1864–5, the inventors, Msssrs. Hockholzsr & Denver, erected a similar establishment at the Savage mine in Virginia City, and we are informed that it savod the mins $80,000 in a single year. The erection and operating of these works in Carson is a double saving to the mine owners, the greatest of course in diffsrence in the cost of machine and hand labor; but another considerable item of importance is the freight to the mines from hsrs. On framed timbers thers is no dead freight, while timbers shipped whole and worked at the mins are subject to much loss in cutting up. The ownsrs of this enterprise are meeting with splsndid successs, as they dessrvs to.

Railroad Timber.

The Sauta Cruz *Sentinel* learns from Mr. C. W. Davis, who has had considerabls experience in railroad car-building, that white fir is a first-class material for building truck, platform and passenger cars. It is supsrior in point of strength, elasticity, hardness and durability; when thoroughly seasoned, as is well known by wagon-maksrs, who use this timber for wagon beds, a nail or spike can hardly be driven into it. Mr. Davis for over two years was the car-builder for the Market Street Railroad, San Francisco, and during that time built all ths cars of ths road, up to its transfar with the Southern Pacific; he also had charge of their works, and built ths turn-tahle, and the depot at Menlo Park, etc., and during that tims had occasion to use large quantities of Eastern ash, oak, hickory, and other hard woods, and his opinion is that fir is superior for ths various wood-purposss in railroad and car-building, where the bsst of durabls, hard, tough wood is necessary.

A car bolster is gsnerally 8 or 10x12 inches square, by 9 feet long, and the sills are 4x8 and 4x10, and 40x60 feet long, according to the length of the car, and it is required that tho timber be of the best material. The Eastern wood, on account of long passage, steaming in a ship's hold, has no life—it dry-rots, or hecomes more or less brittle, consequently a better wood is needed, which the fir of Santa Cruz snpplies. Railroad and car builders may do well to maks a note of this.

Olives.—The yield of olives this year, at the San Diego Mission, will hardly equal that of last season, bnt ths fruit is of a fine qnality, the olives being very largs and plump. A quantity of oil will be made, and as last year, a considerable lot will be pickled for homs sale and for sxportation.

Useful Information.

Combustibility of Iron.

The combustibility of iron is shown by any means that exposes a large surface to the action of the atmosphere. For that purpose, Professor Magnus, of Berlin, devised the method of using a magnet, to which iron filings readily attach themselves like a beard, all radiating from the poles in each a manner as to leave small interstices. On igniting these with an alcohol lamp or gas burner, they continue to burn most brilliantly; and if the experimenter waves the magnet, a rain of fire is produced.

If no magnet can be procured for the experiment, a bunch of cotton wool may be saturated with alcohol, placed on some support, and the alcohol ignited. Some fine iron filings, placed on a sheet of paper, are allowed to fall in a fine stream on the burning mass, when they burn with brilliant scintillations, showing that iron is combustible if only the supply of air is sufficient.

Still more remarkable is the experiment showing that iron is more combustible than gunpowder. A mixture of fine iron filings and coarse gunpowder is thrown on a small quantity of burning alcohol. As the iron falls through the flame, it takes fire and burns with its characteristic color and scintillations. The gunpowder falls through the flame without taking fire, and lies quietly in the bottom of the saucer until the alcohol is nearly consumed, and the flame is brought into contact with it, when it flashes, showing that it was the powder, not the iron, that passed through the flame without taking fire.

The influence which the minute size of the particles, by which a large surface is exposed to the air has on the combustibility of a substance is well illustrated in pyromorphic iron. If the oxide of iron be reduced, by passing over it a hot current of hydrogen the metallic iron so obtained, when preserved in a well-closed bottle, is left in such a fine state of subdivision as to take fire spontaneously when allowed to fall through the air.

If the oxygen of our atmosphere were not largely diluted with nitrogen, iron and steel would burn like tinder, and our stoves take fire as well as the coal in them. This is proved by the well-known experiment of burning a piece of iron in a bottle, or in a stream of pure oxygen gas.

Coal Oil Lamps Injurious to Milk.—It will interest some of our very precise housekeepers to learn that one of our dairymen, whose butter has a high reputation in this market, informs us there had lately been some complaint about it, the cause of which he for a long time was unable to discover, but finally traced it to the fumes of the coal oil lamp, used in lighting the milk-room. It shows (if such a word is proper) the extreme sensitiveness of milk to the least impurity in the atmosphere, and its rapid power of absorption. The difficulty was entirely remedied by putting in a tin ventilating tube, leading from the top of the chimney to the outside of the roof. The butter was not afterward complained of. He writes us: "It may as well be stereotyped, that it will not do to use a lamp in a dairyhouse, without providing a way to carry off the fumes."—*Exchange.*

Insect Songsters.—The chirping and singing of the cricket and grasshopper are frequently spoken of; but they do not sing—they fiddle. By rubbing wings and legs together—each in a manner peculiar to the species—these insects produce the sounds which characterize them. Perhaps our best instrumental performer is the "katydid." Each wing contains a little tambourine, and by the opening and shutting of the wings they are rubbed against each other, and produce the sound of "katy-did-she-did," which can be heard a long distance, and gives the insect its name.

Dried Canteleups.—The Visalia *Delta* mentions a lady in that place who is in the habit of drying cantelenps and muskmelons for winter use, the family preferring them to dried peaches, pears, etc. They are eaten dry, or when soaked for making pies their peculiar flavor is brought out in all its original richness. The melons are taken when in full flavor, before too ripe, cleaned out inside, the rind shaved off, and the balance sliced up for hanging on poles, like pumpkins.

A Short Rope vs. a Long Rope.—A very long rope will drag down by its own weight, and as the power of the pull is always exerted in the direction of the rope, the pull exerted by a long rope, not horizontal, but downward, will always be at a disadvantage. In conveying power by a rope, if the rope is so supported as to be horizontal for its whole length, there will be no appreciable difference in the effect of the pull whether the rope be long or short.

A Novel Traveling Trunk.—An ingenious mechanic has invented a traveling trunk. Taking hold of the handle and lifting one end from the floor, a sharp pull draws out a hand-bar similar to those by which a hand-cart is drawn or propelled, and at the same time two strong wheels drop beneath. The trunk is at once a box on wheels, and the traveler can draw it away independent of porters or expressmen.

Prepared Wood Hangings.

Some four or five years ago an enterprise was started at the East which had for its object the introduction of wood as a substitute for paper hangings. The project was only partially successful, from the fact that in handling such thin sheets, many times thinner than ordinary veneers—say from 150th to 250th part of an inch in thickness—no care could prevent them from becoming cracked and otherwise injured, thus entailing large loss of material.

This trouble has now, however, been overcome, by covering the backs of the sheets with cloth or manilla paper, immediately after they come from the machine. This process is accomplished by machinery and the use of heavy pressure. Wood so prepared is easily handled and as readily placed upon a wall as common paper hangings. The material is cheap, and is said to be both durable and elegant. Papering can now be provided at a cost of $1.00 per roll of thirty square feet, for the common woods, and for fancy or high priced wood according to quality. Walls so prepared are not affected by damp or dryness; they can be washed and their natural colors are said to be perceptibly heightened by age. Some of the most elegant vestibules, halls, libraries, etc., in Boston, are finished with these improved wood hangings.

Among the woods employed in this manufacture are white oak, brown and white ash, whitewood, wild cherry, plain black walnut, yellow birch, silver birch, rock maple, bird's eye maple, curly maple, blister maple, mahogany, mottled black walnut, Hungarian ash, satinwood, butternut, red cedar, Spanish cedar, etc. The logs, as furnished to the saw-mill, are of different lengths and sizes. They are first placed in a large tank of water, for the purpose of soaking and softening. When taken out they are steamed, and are then passed to the machine that cuts them up into fine veneer-sheets from the 150th to the 250th part of an inch in thickness.

Statistics of the Iron Industry.—The completed returns of the ninth census, just sent to press, show the following facts in regard to the several branches of iron industry in the United States during the year ending June 1, 1870: Pig Iron—386 establishments, 574 blast furnaces (with a daily capacity of 8,357 tons melted metal), employing 27,554 hands, producing 2,052,821 tons of pig, of the value of $69,640,498. Bloomary Forges—82, employing 2,902 hands, producing 110,808 tons of blooms, of the value of $7,765,623. Foundries—2,653, employing 51,297 hands, and producing to the value of $99,834,218. Forges—102, employing 3,561 hands, and producing to the value of $8,147,669. Establishments producing bar, rod and railroad iron, nail, plate, etc., 309—employing 44,643 hands, and producing to the value of $120,301,158.

Ornamenting Crockery.—A gentleman in New Haven, Conn., invented a machine for printing in colored and gilt enamels on china and pottery of all kinds which, it is claimed, will revolutionize the whole business of ornamenting crockery, reducing the cost to a small fraction of what it now is. He has applied for patents in several foreign countries as well as in the United States.

To Clean Silver or Gold Lace.—Lay the lace smooth on a woolen carpet or piece of woolen cloth, and brush it free from dust, then burn rock alum and powder it fine, and afterwards sift it through a lawn sieve; then rub it over the lace with a fine brush, and in so doing it will take off the tarnish and restore it to its brightness, if it be not too much worn on the threads.

How to Clean Alabaster.—Take ground pumice-stone of the finest quality, and mix it up with verjuice; let it stand for two hours, then dip in a sponge and rub the alabaster therewith; wash it with a linen cloth and fresh water, and dry it with clean linen rags. Any kind of marble may be done in the same manner.

Cement for Steam Boilers and Gas Pipes. This cement, offering a greater impermeability and more strength than the unmixed cement generally used, is prepared by an intimate mixture of six parts of graphite finely ground, three parts of slacked lime, eight parts of sulphate of baryta, and seven parts of linseed oil varnish.

Borax for Ants.—Somebody has discovered that powdered borax will drive away ants only when it has been deprived of its water, which can only be done at a considerable degree of heat. Perhaps this may account for the failure which many report as attending this mode of attempting to drive ants from their pantries.

Paper Clothing.—Boston is beginning to import Japanese paper clothing. The paper from which the articles are made is wholly waterproof, is thin and light, an overcoat weighing only two pounds. The goods are capable of being washed several times, and will last a number of months.

The Meteoric Collection of Prof. Shepard, at Amherst College, comprises 146 meteoric stones and 93 meteoric birons of undoubted origin and a large number of doubtful meteorites. This is one of the most valuable collections extant of these waifs from other worlds.

Good Health.

The Science of Eating.

Henry Ward Beecher, besides performing the immense labor of pastor and preacher to the Plymouth Church, Brooklyn, fills also the position of a professorship at Yale College. In one of his lectures the art of eating is treated upon in his usual felicitous manner. He said, in regard to the stomach, that everybody feels that he must not be a glutton nor a gourmand, but there is very little discrimination and very little observation as to the quantity and quality and the times and seasons of eating.

Preachers may be divided into two great classes—the sanguineous class, who cannot eat much if they are going to think or speak, and the class who have the extreme nervous temperament, who cannot speak or work unless they do eat. On Sunday morning, when I wake, my first thought is that it is Sunday morning, and this very idea of it takes away my appetite. I go down, drink a cup of coffee, and eat an egg and half a slice of toast. That is all I can eat. Then I preach, and, if I have not done very well, I am hungry; but if I have done very well, I cannot eat much dinner. That is because there is a reaction of the nervous influence of the system.

The whole system is working so much by the brain and the nerves that the stomach does not crave anything. Just as great grief or fear, or any other extreme passion takes away appetite, so does active preaching. Ordinarily, I take but a moderate dinner on Sunday. Supper with me is at five o'clock in the afternoon, and I usually take a cup of tea and a small piece of cracker. That is all I can take. Then I go to my evening work, and when I get through I sometimes am satisfied to take nothing but an orange, which I eat to give my stomach something to do until morning, and to keep it from craving—for often a fit of craving will give one a nightmare as quickly as overfeeding will. At other times I feel a strong appetite, and then I eat. Perhaps once out of five Sundays I eat more just after preaching, morning or evening, than I do all the rest of the day put together. The system indicates it, and, therefore, I am not harmed by it. It does not disturb my sleep, and digestion goes on perfectly.

Now, the point I take is, not that you shall follow this, but that you shall find out accurately, in regard to your own eating, what obstructs and what does not obstruct your mental operations. If you go to your study after a hearty breakfast, and you find it takes you from eight o'clock to eleven before you really get into your work, you may be pretty sure that you have overloaded your stomach, and that the energies of your system have been so busy in the work of digestion that you could not call them off to do brain-work. But if you get up from the table after a comparatively light meal which requires but little digestion, and when you go into your study find that you can apply yourself at once to your labor, it is because you have eaten in due proportion to the needs of your system. Eating is to the work of the human body just what the firing up of an engine is to traveling. Eating is the means to an end. It is not a habit, nor a social custom merely. It is not a question of luxury.

Alarming Increase in Use of Morphine.—The use of morphine is increasing at an alarming rate in New York, and we learn from physicians that very many deaths attributed by friends, in the papers and elsewhere, to other causes, are the result of indulgence in morphine. The other day a prominent New Yorker was reported dead. The telegraph bore tidings of his sudden decease in every quarter, but assigned no cause. An inquiry since, set on foot by friends, has revealed the fact that he had become as much a slave to morphine as many are to rum. He had purchased and consumed 15 grains a few hours prior to his death. I have a friend now lying very low from the use of this dangerous drug. Twenty years ago an ignorant physician gave it to him in large quantities to allay pain. He was brought to death's door, when skilled doctors rescued him and gave him warning that further indulgence would surely kill him. Now, when once again brought low, after having been nearly restored to health, he confesses that he has been surreptitiously using morphine, purchasing it of a well-known New York druggist. His friends are so indignant at the latter, that they propose to prosecute him. There is a law forbiding the sale of morphine to any one without a physician's prescription. Such a prosecution would unquestionably have a most salutary effect upon the unprincipled druggists of the metropolis. *New York Letter.*

Consumption.—An English physician has written a book to prove that "consumption *always* originates from the breathing of prebreathed air;" and, though that may be putting it rather strongly, there can be no doubt that re-breathed air is one of the most fruitful sources of this and many other forms of disease. Dr. Roux says, that the French, by daily using copper cooking utensils, take copper enough into their system to render its detection in the blood an easy matter.

A Few Words From A Tobacco Hater.

We have in the East a correspondent who is somewhat positive in his opinions and who talks out. In the following extract from one of his letters he suggests a plan to prevent the formation of the tobacco habit, and also presents an idea in regard to the influence of mind on body, which may interest some of our readers:

"Nothing more nasty and disgusting than tobacco habits. Cords and cords of fools getting 'chawed up and spit out' by the vice every day—so disgusting that you want them half a mile off when they talk to you. Guess we have got to go further back in education, and begin on children while their mothers are babies, by some sort of hypodermic process. Old 'Conversation Alcott' (famous Yankee imitator of Coleridge, cramming himself with eccentric sayings and epigrams before going into company at a dollar a head, and then uncorking like a champagne bottle) said once, 'all great thoughts come from the stomach'; and pretty true, though Delphic also, as the stomach is very much under the control of thought. I have for years known that a man can think up an ulcer on his leg, if he sticks at it long enough. Boys will always catch tobacco till their mothers get sense enough to educate them 'from the stump,' literally and not let them idly run into it."

New Method of Making Beef-Tea.—In order to meet the daily-felt want of concentrated fluid meat food, a want not supplied by beef essence as ordinarily made, Dr. H. C. Wood has invented the following process, and found in practice that it works well:—Take a thin rump steak of beef, lay it upon a board, and with a case-knife scrape it. In this way a red pulp will be obtained, which contains pretty much everything in the steak, except the fibrous tissue. Mix this red pulp thoroughly with three times its bulk of cold water, stirring until the pulp is completely diffused. Put the whole upon a moderate fire, and allow it to come slowly to a boil, stirring all the time to prevent the "caking" of the pulp. In using this do not allow the patient to strain it, but stir the settlings thoroughly into the fluid. One to three fluid ounces of this may be given at a time.—*Canada Lancet.*

Vegetable Growths in the Ear.—Since the year 1844, when the attention of the profession was first called to the subject, the growth of minute fungi in the ear has been reported to be a common cause of disease of that part. The meatus, canals, and tympanum are sometimes covered with the growth in the form of white or yellow mold on their surfaces. Prof. Seely of Cincinnati reports in the "*Clinic*" three cases of diseased ear in which he detected the fungus Aspergillus. Tinnitus, inflammation, and the accumulation of wax are the attended symptoms. The treatment consists of the application of a solution of carbolic acid, five grains to the ounce of water. As it is found impossible to transplant the ectophytes to a healthy ear by inoculation, we suspect they are the effects of disease rather than the cause.—*Pac. Med. Jour.*

Vegetable Hair Dye.—As most of the mineral and metallic hair dyes in common use, are deemed poisonous, the following from the *Scientific American*, may be acceptable to some:

"Among organic dyes which can be prepared by any one is that obtained from the green walnut burr, the epicarp of the fruit of the *juglans regia*. For this purpose the burrs are soaked in water and pressed. The liquid thus obtained is then evaporated and the dye precipitated as a black powder, which can be used in any convenient form of hair dressing. Dr. Kurtz says that large quantities are used in Greece, and are also exported thence for this purpose. The Greeks also make a dye by adding alum to the expressed juice, and use this to give a dark and marketable color to the cattle exported to Marseilles and other places where light colored stock is at a discount.

Animalcules in Buttermilk.—Dr. J. P. Brown, of Galt, Ontario, in the *Canada Lancet* for August, gives an account of a family poisoned by drinking buttermilk, which on examination with the microscope, was proved to contain immense numbers of animalcules. He thinks the germs which produced them were taken in by the cow in the water which she drank, and found their way into her blood through the lacteals. The symptoms were those of narcotico-irritant poisoning, viz.: vomiting, purging, cramps, stupor, etc. We think it much more probable that the organisms were produced in the milk after it was taken from the cow.

Quack Advertisements Prohibited.—The posting of placards of quacks and quack medicines has been prohibited in the streets of Chicago. Why cannot San Francisco follow the good example? Many of these placards are an offense against decency, apart from the imposture which they involve.

Ventilation.—Dr. Angus Smith gives a good rule for ascertaining the amount of carbonic acid in the air of houses: "Let us keep our rooms so that the air does not give a precipitate when a 10½ ounce bottleful is shaken with half an ounce of clear lime water," a sanitary regulation which can easily be carried out.

MINING AND SCIENTIFIC PRESS.

W. B. EWER.....SENIOR EDITOR.

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ILLUSTRATIONS AND REPORTS OF MINING ENTERPRISES WANTED.—Drawings or photographs of mining works that are of general interest to our readers are solicited for publication in this journal. Official reports of Companies, and description of mines of importance, of special interest, are also desired. Sketches of any new method and discoveries will be very acceptable.

San Francisco:

Saturday Morning, Oct. 5, 1872.

Gold and Legal Tender Rates.

SAN FRANCISCO, Thursday, Oct. 3d, 1872.—Legal Tenders buying, 88; selling, 88¾. Gold in New York to-day, 116.

Table of Contents.

ILLUSTRATIONS.—Vile's Patent Rein-Holder; Peacock's Patent Ventiduct; The People's Pump, 209. The Army Worm, 214. Cape Horn, 217.
EDITORIALS.—Work in Our Gravel Mines; The Sun's Heat, 216. The Needs of Commerce, 218.
CORRESPONDENCE.—From our New York Engineer, 210.
MECHANICAL PROGRESS.—Tide Power; Notes of Mechanical Progress; Wintergreen Oil in Java; Influence of Cold Upon Iron; Steel Boilers in England; A Steam Paving Tool; Closed Cupolas; Soldering Iron to Brass; Steel vs. Iron in Cold Weather. 211.
SCIENTIFIC PROGRESS.—Oxygen as a Stimulant; An Artificial Mirage; Effect of Change of Barometric Pressure on Human Beings; The Leaf a Vicarious Organ; Binary Stars—Supposed Interesting Discovery; A New Iron Product—Iron-Steel; Sunlight in Ocean Depths; The Occupants of Space. 211.
MINING SUMMARY from various counties in California, Nevada, Arizona, and Colorado. Mining Shareholders' Directory. 212-3. Market Reports, 220.
USEFUL INFORMATION.—Combustibility of Iron; Coal Oil Lamps Injurious to Milk; Insect Songsters; Dried Canteloups; Prepared Wood Hangings; Statistics of the Iron Industry; Ornamenting Crockery; To Clean Silver or Gold Lace, 215.
GOOD HEALTH.—The Science of Eating; Alarming Increase in Use of Morphine; Consumption; A Few Words From a Tobacco Hater; New Method of Making Beef-Tea; Vegetable Growths in the Ear; Vegetable Hair Dye; Animalcules in Buttermilk; Quack Advertisements Prohibited, 215.
MISCELLANEOUS.—Notes on the Reduction of Gold Ores; A Worthy Enterprise; Magnetic Wells; 210. Mines and Mining in Colorado: North Star Mining Co.; Mining Timber Manufactory; Railroad Timber; 214. The Lead Veins of Southern Illinois; 217.
Tea from a New Source; Vineyards of the Foothills; Compliments to a California Boat Crew; 218
Patents and Inventions; New Incorporations and Meetings and Elections; 220.

MARYSVILLE FOUNDRY.—This foundry has been running ten hours a day regularly since the first of January, and for the last two months has been obliged to run over time to keep up with the increasing demand for work. They have cast, up to the present time this year, over two hundred tons of hard iron into shoes and dies for various mills through this and adjacent States and Territories. The facilities for doing this class of work have been lately increased as it became necessary to do so. A large amount of other small work is also being turned out.

There is now being built at the foundry a 10-stamp mill complete with 16x36 engine, improved patterns, pans, settlers, retorts, etc., for the Wyoming S. M. Co., Tintic District, Utah, (a Cincinnati company); also an improved Stetefeldt furnace with conveyers, feeders, dry kiln, etc. D. P. Bell of San Francisco acts as Superintendent, and under his supervision the buildings and machinery are being constructed. This gentleman has erected quite a number of the Stedefeldt furnaces and the Salt Lake people may expect to see a fine mill.

Receipts at State Fair.

The following is a comparative statement of tickets sold at the Park and Pavilion for 1870, 1871 and 1872:

	1870.	1871.	1872.
Park.....	$11,201.38	$11,843	$15,388.50
Pavilion....	8,867.50	8,086.50	8,964.00
Total....	$18,068.86	$19,929.50	$24 352.50

There is no doubt had the managers of the various lines of travel to Sacramento, seen fit to have issued tickets at the rates they have on former years, the receipts would have been largely increased.

Work in Our Gravel Mines—A Successful and Promising Enterprise.

Our auriferous gravel mines, both hydraulic and drift, appear to have prospered well thus far the present season. From the more northerly counties, in particular, very favorable accounts reach us; the mines along Slate Creek and its tributaries having done especially well. About La Porte, Howland's Flat, Hepsidam, and Whiskey Diggings, a better summer's work has been made than for many seasons past. The North America group of claims situate near the latter place having, it would appear, taken the lead. These claims are situate at the head of the basin, and have always been regarded as the principal feeders to the rich localities immediately below. They consist of several hundred acres, and were sold last winter to an English company, who, having since operated them with more system and vigor than ever before, will, as soon as practicable, proceed to open them up and work them on a very extended scale. This would have been done before now but for the delay in perfecting negotiations for the transfer of the property, which were prolonged quite into the winter, and a failure to provide working capital at the start for collecting and preserving the water and putting the grounds in condition to be worked to their full capacity.

Notwithstanding this failure and delay, these claims, under the capable and energetic conduct of Superintendent Morgan, have been brought into good shape and made to yield handsomely. A working force of seventy-five men is now employed, which is being increased as fast as suitable hands can be obtained, it having been found impossible to procure even indifferent miners there the past summer, though liberal wages have been offered. The new and present working tunnel—several others having been run—is now in a distance of 2,400 feet—a substantial tramway, with turn-out, having been laid along its entire length. This tunnel has been made of large dimensions, to give room for the employment of mules for hauling in and out the cars. At a point 1,900 feet in from its mouth a main gangway 350 feet long has been run off at nearly right angles on each side. From each of these a set of sub-gangways, 70 feet apart, have been advanced, running parallel with the main tunnel; the layer of auriferous gravel being cut up into long strips in this manner to insure more ready drainage and afford sufficient breasts or surface for the drifters to attack it. Through all these gangways an iron track is laid down, over which the cars are run in from the main tunnel to receive their cargo. In working out these strips of gravel the drifters begin at the main gangway and advance to the upper end, a distance of from four to five hundred feet, taking off one-half of it as they go along; having reached the end they turn about and excavate the remainder, taking up the car track as they come along. Left without support, the superincumbent mass behind settles gradually down upon the rocks and debris left in the rear of the miners, it being very seldom that any caving or sudden subsidence takes place. A strip of gravel 30 feet wide is left standing next the main tunnel, for prominent support.

While these opened sections are in course of removal, other main gangways are thrown out four or five hundred feet in advance of the first, it being desirable that these be completed sometime before required for use, in order to drain off the ground, these old river channels making at some points a great deal of water. In the meantime the central adit is carried forward for the double purpose of securing advance exploration and partial drainage.

The ancient channel at this point appears to have reached an extraordinary expansion and to be, at the same time, extremely rich in gold. It has now been cross-cut by the gang-ways opened, for a distance of nearly a thousand feet without any signs of either edge, and it is possible this may not be one half its entire breadth, such was the magnitude of these mighty Pliocene Rivers!

Not only the inner extremities of the lateral, but also of the sub-gang-ways and working tunnels are all in gravel of high grade, which it is believed will wash up from $2.50 to $3 per car load. For some months past Superintendent Morgan has been running out from eight to nine thousand car loads per month, with the prospect of making the number 10,000 the present month, and increasing it shortly to 15,000. An immense quantity of gravel has accumulated in the spacious dump yards of the company, there having been but little water for washing, since the most of it was taken out.

With the advent of the rainy season it is expected some, and possibly a considerable amount of this gravel may be put through the sluices, though it is not likely the whole of it can be washed up before next spring.

Next season, the water, of which the company have a sufficiency on their premises, will probably be properly husbanded, insuring means for steady washing. Then also one or more of the tunnels already run including perhaps, a new one now in course of construction, will be made available for working purposes adding immensely to the aggregate production and accruing profits of the property. In reaching a condition so satisfactory, the North America grounds have not been exempt from the troubles and mishaps that have usually attended the development of this class of properties, a circumstance that should give encouragement to those still engaged in this somewhat hazardous but very hopeful branch of mining.

The Sun's Heat—The Late Heated Term.

It is well known to most if not all our readers, that astronomers at the present time do not now, as in times past, confine their attentions wholly to the aspect of the heavenly bodies as they appear through a telescope; but that by the use of a combination of the telescope or other optical appliances with that wonderful instrument known as the spectroscope, they are able not only to determine the *appearance* of the heavenly bodies, but they can also learn something of what is actually transpiring upon the surface of the most distant orbs whose light reaches the earth even in so small a quantity as is indicated by the least of the stars visible to the naked eye.

By this contrivance they are able to make a most accurate study of the gaseous envelope of the sun. The spectroscope tells them with most unerring certainty, that the outer portion of this envelope consists mainly of hydrogen gas, not in an active state, but for the most part in a simple incandescent condition — in other words, as a red-hot gas. Of course, it is blown about like the earth's atmosphere, and through similar agencies, but with a violence inconceivably greater than ever attends the most violent tornadoes in our own atmosphere.

Besides hydrogen vapor, other glowing vapors are also observed, in lesser quantity, and lower down towards the more denser portions of the sun, among which may be mentioned the vapors of magnesium, sodium, iron, and, in fact, nearly all the elements which exist upon the earth, besides others, of which no counterpart is known.

We have already said that the upper and most universal vapor envelope of the sun is hydrogen; but early last spring it was noticed by a number of distinguished Italian observers, who are making a daily examination of the sun their specialty, noticed that magnesium was beginning to appear in unusually large quantities. It was first observed upon one side principally, but it gradually spread, until by the last of June it covered almost or quite the entire surface of that luminary.

How long this unusual appearance continued we are not informed, or whether it continued into or through the remarkable "heated term," which has been so strikingly experienced the past season, both in this country and Europe, and which came upon us about a month earlier than usual. However that may be, certain weather-wise individuals in Europe drew the inference therefrom that this unusual degree of heat was brought about by this remarkable occurrence of magnesium vapor in the sun. The Italian observers, so far as we have noticed, made no such inference, and have taken no pains to contradict it.

That this sudden appearance of magnesium vapor in the sun would render the surface of its cromosphere both hotter and more brilliant cannot be doubted; but whether so much so as to effect the temperature of so distant an orb as the one we inhabit may admit of considerable doubt, especially when we consider

The Philosophy of the Development of the Sun's Heat Upon this Earth.

Several theories have been put forth to account for the heat developed by the sun on the earth, but none have yet proved entirely satisfactory. It is a peculiarity of the sun's heat that as we ascend to higher regions of the atmosphere the sun's rays become less powerful. From this fact it is inferred by some that however hot the rays of the sun may be when they leave that luminary, they lose their heat in space and become intensely cold; but that on entering a resisting medium, like the earth's atmosphere, they are again heated by the friction produced in passing through that atmosphere. When we reflect that the rays of light enter our atmosphere at a velocity of 183,000 miles a second, we may well conceive of the production of heat by such contact. If we consider light as merely a mode of motion, that motion must be imparted to the atmospheric particles, and *hence* the heat.

But whatever theory we adopt for the *development* of sun heat upon the earth, all are agreed upon certain phenomena accompanying such development and largely influencing its intensity and permanence, and these developments are greatly if not wholly due to terrestrial and not astronomical causes, a fact which would go far to nullify any supposable influence on the earth by any accidental change in the sun's temperature.

All are familiar with the fact that sun heat passes through perfectly transparent glass as readily as through space, but that reflected heat can only pass through glass by radiation. It is thus, only, that we are enabled to increase the temperature of our hot houses by sun heat, and retain a large portion of the heat through the night.

Invisible vapor in the atmosphere possesses the same power of transmitting the direct rays of the sun, and retaining their reflected rays. Condensed vapor, as in clouds, intercepts both the direct and reflected rays. Hence when the rays of the sun fall upon the earth, the heat which they develop is retained just in proportion to the amount of moisture in the atmosphere, whether visible or invisible. This vapor acts like a cloak to retain the heat, or like the glass covering of a hot house.

The cool nights of our hot California summers are due to the fact that we have but little vapor held in suspension in the atmosphere. The moist atmosphere of the Atlantic States holds the heat which has accumulated during the hot summer day, like the glass roof of a hot house; while the absence of that moisture in California allows it to freely radiate into space.

The moisture in the earth's atmosphere is largely influenced by the variable nature of the winds and air currents which bring moisture or dry air according to the direction and topography of the country from which they come.

Now if we examine the meteorological indications of the past summer we shall find that an unusually large amount of moisture has been present in the atmosphere of both Europe and America. This fact has been especially noticeable in California, where rain indications have been unusually prevalent during all the past season. The rains held out unusually late last spring, and even the present indications bespeak the early appearance of the fall rains.

From the above facts it would appear much more reasonable to refer the remarkable heat of the past summer to the action of terrestrial causes, as above, than to the especial chemical action which appears to have been in such active operation in the sun's cromosphere during the time.

It is possible, however, that the unusually large elimination of magnesium vapors reported by the Italian observers, may, through magnetic or some similar cause, have so acted upon the earth's atmosphere as to have in part produced the meteorological disturbances to which we have attributed the unusual severity of our late heated term.

DISPUTED TITLE.—We have been shown a letter from Nathaniel Merriman to the Secretary of the Pacific Mining Bureau, stating that parties are now in San Francisco trying to dispose of the North Pacific lode in Colorado District, Jefferson county, Montana, and that it does not belong to them. We are requested to state that the writer of the letter says that the North Pacific is nothing more nor less than the Argentum lode, and that the owners of the latter intend contesting right to said lode.

VIRGINIA CITY RAILROAD.—The first through passenger train from Reno to Virginia passed over the road on the 1st inst., and trains will hereafter run regularly between these points, doing away with stages between Carson, Virginia and Reno. A full description of this important local road will be found in the letter of our correspondent L. P. Mc. in next weeks' issue.

Cape Horn.

In onr illustration we present one of the most notahle objects of interest in the great Northwest. It was photographed by C. E. Watkins, Yosemite Art Gallery, S. F., and engraved hy R. S. Bross of N. Y., expressly for the columns of *Crofutt's Western World;* and we are indehted to that paper alike for the engraving and the accompanying word description of the beantiful scene presented.

Cape Horn derives its name from the danger in passing; it is a bold promontory, situated on the north side of the Columhia River, in the Territory of Washington, about midway between the Cascades and the Dallos. The rivor bends aronnd it from the North-east, the channel keeping mid-stream, in which aro nnmerous rocks that rise above, or near to the surface of the watcr, which, together with the high winds that often blow a strong gale "around tho horn," dashing the waters into a foam against the rocks, make the passage a dangerous one, even for the most skillful oarsman.

This promontory is of hasaltic formation — liko most others on the Columbia—and riscs near two hundred and fifty feet perpendicular from the water's edge, and extending about a mile in lcngth, the lower part projecting several hundred feet out into the river. Near the snmmit, and from many crevices of the cliff, a kind of fir or stnnted cedars are to be seen, which add materially to the charm of this otherwise most romantic locslity.

Only a short distance ahove Cape Horn—on the South, or Oregon side of the river—is situated another perpendicular rock of peculiar hasaltic formation, "Rooster Rock," and still another, which riscs from the middle of tho river for some hundreds of feet, called "Lone Rock." At another poiut a tiny stream of sparkling water pours over the cliff in one unhroken fall, seven hnndred feet in height.

Our illustration represents a small party of pleasure and curiosity seekers, on a pleasant afternoon, when the wind had lulled, who have snccessfully ronnded the Cape, and are abont landing at the hase of the promontory, while above them—kind of guard of honor—soars the intensely hlarneyed hird of the nation—the American Eagle. Near the party are to be seen some of these peculiar basaltic formations which are common to the Columhia—formations that many eminent geologists like so well to tell us *all about;* hnt, since the *learned* report on the Cardiff Giant, reports should be taken with many grsins of allowance.

CAPE HORN ON THE COLUMBIA RIVER.

The Columhia River is navigable a distance of one hundred and thirty miles, from the Ocean to the Cascades, the head of tide water. At the Cascades, Dalles, and several other places, railroads have been bnilt aronnd the falls and dangerous rapids, which connect with steamhoats of light draft, which run np the Columbia and its numerons trihntaries for seven or eight hundred miles distant.

There are three general ranges of mountains west of the Rocky Mountains, running in a northern and southern direction; the Cascades are a continuation of the Sierra Nevada Mountains of California, and are the central range. The eastern range is ahove the great falls of the Columbia. The western is along the shore of the Pacifio Ocean, called the Coast Range.

The Colnmbla has three lsrge fslls in the distance of seven hnndred miles; the Cascades, one hnndred and thirty miles from the ocesn; the falls of the Columbia, forty miles above the Cascades; and the Kittle Falls, five hnndred and thirty miles above the Colnmhia. Besides these falls, there are many dangerous rapids. On the Southern Colnmbia, Lewis, or Snake River, as it is more commonly called, which unites with the main river a few miles above Old Fort Walla Walla,—now Wallula—there are two great falls, known as the American and the Shoshone, the latter being three hnndred and sixty-two feet perpendicular, with cliffs towering on each side 1,000 ft. from water's edge.

The Cascade Range is the most important of the three ranges of mountains named, and derives its name originally from the great number of beautifnl cascades which pour ont of almost every ravine and crevice of the mountains, many times from the very snmmit presenting in the sun's rays a grand constellation of glittering jewels.

For varied and remarkable scenery the Colnmbia River, for one thousand miles from its month, is certainly the most notable of any river in the world. The most magnificent views of earthly scenery are presented from different points. High mountain peaks, covered with perpetual snow, are to he seen in all directions. Among these peaks the most notable are Mt. Hood, Mt. Jefferson, Mt. Adams, Mt. St. Helen, Mt. Rainier, and the Three Sisters. The sight is grand beyond description. At places, the country, as viewed from the river, looks barren and worthless, and the wsters move sluggishly towards the sea. At others, the country presents the most besntiful appearance, with gsrdens, vineyards, crops and herds—a perfect Elysium. Agsin it is covered with thick forests of heavy timber—or the broad, rich bottom lands are awaiting the hnshandman to yield a thousand fold the seed sown. Another view, and we have the suhmerged forests; then again, the towering hasaltio cliffs rising on each side from one thonsand to fifteen hnndred fcet in hight, through which the river runs with a rapid current. Many beautiful cascades are to be seen on each side, while passing along this narrow channel; some of these in their fall from the hights, are lost in spray before they reach the river below, while others come pouring down from over the cliff, hnndreds of feet ahove in one nnbroken sheet. Many of these falls would present at a distance the appearance of a monntain-glacier, were it not for the fine sheets of epray, which are wafted by the winds in clonds hundrede of feet away.

The climate in the Valley of the Columbia and its trihutaries is unnsnally healthy, and unrivalled by any in the Union.

THE COMSTOCK LODE.—A communication from onr correspondent L. P. Mc., on the snbject of the mines of the Comstock will appear next week. We are also preparing engravings of the Sutro Tnnnel, which will prohahly appesr the week following.

TAHOE.—Colonel Von Schmidt's survey brings all of Lake Tahoe within the boundaries of California, much to the disgust of the Nevadians.

The Lead Veins of Southern Illinois.

At the time the lands of Senthern Illinois were thrown upon the markst hy the General Government, a portion were reserved from sale as the mineral reserved lands, of which fact ths ore specnlators were not long in taking advantage; and soon the connty of Pope, now Harding and Pope, were filled with explorers, expecting the realization of immense fortunes, with but a small outlay of capital, and but little amonnt of labor. The utter failure of all such nndertakings, leaving bnt a hole in the gronnd, and that not even of sufficient depth to constitnte a good well, threw a damper upon the mining interest of this section, and cansed it to slumber for years; at the same time it led some to investigate the relative claims this section had to a mining district. A correspondent now writes that the counties of Harding and Pope have run ning through them several well defined lodes of argentiferous galena, which must prove, whsn judiciously worked, immensely remunerative. Some three years ago, some capitalist, acting upon this opinion, took hold of an old shaft, long ahandoned, reopened it, and demonstrated clearly that at least there was one paying lode in this section. So soon as the fact was made known these counties again filled with mining speculators, some unfortnnately entertaining certain follies held by the pioneers of this country, which time and labor have long since exposed, for it is now a well-known fact that every outcrop of a lead associate and sven lead itself must not necessarily lead to a rich deposit of lead, and some character of veins do not increase in productiveness with an increass of depth, and that there are certain other kinds that will givs out altogether. On the other hand, it is equally certain that in those lodes which have heen cansed and filled out hy a force from below, we may he certain of a large increass of ore as we increase the depth, and at no depth yet reached have they given out. These facts shonld he known, for there exist in this section outcrops of lead and lead associates, and a system of cross courses of feeders not yet proven, on which a large and unprofitahls outlay will he made, and consequently the mining interests of these counties partially msde to pay the penalty of almost complete ostracism from the monsyed circles of our country. There is not a douht but that there is a system of well defined rake veins of galena sulphate of lead running through these counties, their general coursa a little east of north, of considsrahle extent and of immense wealth, of which the fact should bs known that it requires largs means, sound jndgment, watchfnl economy, and unflagging perseverance, and when these prereqnisites are hrought to bear, it will be a safe investment and largely remunerative, and will he one of the importaut industrial pursnits of this section, and add much to its wealth.

VICTORIA.—A dispatch of the 30th ult. says: Reports have reached this city of more discoveries of rich silver mines abont forty miles from Fort Hope, Fraser River. Specimens have been assayed and prove to be enormously rich. Great excitement is said to exist on the Lower Fraser.

A RECENT clean up of the Gwin mine, Calaveras County, after a run of twelve and a half days, yielded $10,000.

SIX mining ditches are heing made at the San Gahriel mines, Los Angeles County, at an aggregate cost of $200,000.

NATIVE copper has been discovered at Pyramid Lake, Nevada.

The Needs of Commerce.

No. 1—Postal Telegraphy.

The great commercial desiderata of the day may he summarized as cheap and quick transportation and cheap and quick correspondence. Day after day gigantio efforts are heing made to secure the former by the network of railroads now fast overspreading every land, and hy the lines of maguificent steamers that ply between the principal ports of the world. To effect it the merchants of our age undertake works that of old would be esteemed those of Titans. They span the most mighty rivers, tunnel the highest mountains, and uniting seas separated for thousands on thousands of years, sever continents whose bond of union is as old as the world. But although the want has long heen felt, very little has been done towards securing

Quick and Cheap Transmission of Thought.

The wonderful system of communication introduced through the medium of the electric telegraph has been in existence for upwards of ninety years, yet how much has heen done in all that long time to popularize it? We may well auswer, at least as regards America, absolutely nothing. The fact is a reproach to our civilization and intelligence. In Europe, in this respect, they are

Far and Away in Advance of Us.

The English mercantile community has far more influence over the legislature than has ours. The result is that whenever their interests are at stake their voice is always heard, and it carries an influence with it which no government can afford to disregard. Previons to 1869 all the telegraph lines of Great Britain were in private hands. The result was overcharge to those who made use of them, and uncertainty and delay in the delivery of messagea. The ratea were regulated hy distance, and in some instances were enormoua. In London the average time occupied in delivering a dispatch was two hours. But when the Government, under an act of Parliament, took possession of them, in the beginning of 1870, the revolution was complete and thorough. The oharges were made uniform, whatever the distance—twenty-four cents for the first twenty-five words, with a greater charge for every five words, waa fixed as the rate, and for this you might send a telegram any distance within the Empire of Great Britain. Measages were delivered in all parts of the principal citiea in ten minutea—one-twelfth of the time which they previously occupied. Wires were put up iu parts of the country that private enterprise had been unable to reach before, and the increase in the numher of messagas sent and in the receipts has been no less remarkable than the administrative changes. The numher of mesaages sent in the year ending the 31st of March, 1872, was 12,473,796. In the second quarter of 1871 the excess in the number of dispatches over the same quarter of the former year was 20 per cent.; in the third quarter, 26 per cent.; in the last quarter, 29 per cent., and in the first quarter of this year 36 per cent., while next year the numher of messages is expectod to be 16,120,000, yielding upwards of $5,000,000, an advance of 30 per cent. on the former year. The expenditure is calculated at $3,216,000, leaving a profit of $1,784,000, one of over 55 per cent., or five per cent. on stock created for their purchase. While the mercantile class and the community in general in Great Britain have received such henefits from this system, and while they have heen such a success pecuniarily, we here in the United States are struggling in

The Toils of a Giant Monopoly.

The whole telegraphic system of the United States is in the hands of a few companies, who, heiug oxposed to no competition, charge what rates they please, and make giant fortunes. One of the largest of them last year declared ôividends amounting, as near as we can rememhor, to upwards of four millions of dollars. Even a fourth of this would be enormous. The halance is

A Tax Levied on Trade and Commerce.

Telegraph rates should he no higher here than they are in England. Yet what ia the fact? In England, or Great Britain, rather, you can send a message upwards of seven hundred miles for one cent a word. In the United States it would cost from five to ten cents per word for a similar distance. The rate from this city to New York and some of the principal States of the East is $4 for ten words, and 27 cents for every additional word above ten. To Tehama, in this State, a distance, counting the turn made around the hay, of ahout 330 miles, it is 25 cents for ten words; to Truckee the same; to Moline, Nevada, 50 cents, and to Salt Lake 75 cents. Now it will always remain thua while the telegraph is in private hands. We must have

The Telegraphs Owned by the Government

Under a system similar to that prevailing in England, and then we shall he able to have a reduction of the rates to at least one-third of the prcsent. With the telegraph in the hands of the General Government, dispatches could he eent to any part of the Union without having to pass through the hands of different companies, and the honefits of the telegraph could he extended to hundreds of places, nay thouaands, which are now wholly cut off from the outer world through the want of this indispensable agent of civilization and commerce. The profits of the large stations could he applied to the maintenance of the small ones. Of the

Immense Advantage of the System,

When properly managed, we can have at present hut a very faint idea. Fancy, however, a merchant, a manufacturer or a farmer in any part of the Union heing able to commnnicate at a reasonahle rate with a husiness correspondent in any other part. Instead of heing ohliged to make use of the postoffice, and incur a delay of from two to fourteen days in ohtaining information, to him of the first moment, he can have it all iu less than as many hours. It would save millions of dollars, and many a house would he saved from certain and irretrievable ruin by its agency. The postal telegraph should

Take the Place of the Postoffice,

And under a proper system of working it would. With the concentrated organization which it would have when managed by the Federal Government, and with the advance of science and inventive skill, postoffices would soon become mere recollections of the past. There is no reason why letters may not hy and hy he forwarded as cheap by telegraph as now by the ordinary post. The printing telegraph of Bonelli, which prints 300 dispatches an hour, euahles them to be forwarded with three times the expedition of the ordinary telegraph and this system may even he improved on. There is no reason why the marks and dots now made use of should not be made to signify words as well as letters, nay, even sentences. In mercantile correspondence, for instance, a system of sentences could he devised to suit all the wants of trade and commerce, each of which could he represented hy the marks now in use, and which, hy the aid of the printing telegraph, might he printed at the station to which they were sent, without further trouble. Or merchants could invent such a system for themselves. Then instead of sending three or four hnndred messages a day hy one line, we could send twice as many thousands; and the cost of sending these thousands would not he any greater than under the present system. Then we could have a numeral system of

Sending Money by Telegraph,

Which would be hoth safe and expeditious. An office here receiving, say ten thousand dollara in gold, conld make that fact known in New York in a very ahort space of time, and the New York office could pay it as soon as sent to the New York merchant. If the matter was agitatcd, the

Universal Voice of the People

Would be in ita favor. Congresa has had such a system under consideration for several sessions, hut the voice of the monopoly has always atifled the voice of the people. The vast majority are in favor of it, and it should be no longer delayed. The next session of Congreas should witness the adoption of a system which shall soon become as great a necessity as the psotoffice itself.

Tea From a New Source.

The Engliah tea gardens extend along a line of 1,000 miles, on the foot-hills of the Himalaya Nevadas of India. The plant thrivea best at Darjeeling, where snow covers it for more than two months of the year. The country waa a dense jungle, the home of elephants and tigers. To get a clearing for a tea garden, costa twenty-fold the price of ready-cleared land in our foothills. The soil and climate of our mineral belta are equally adapted to tea. But, aa in India, the plant must he irrigated, if you pluck its leaves; woll up inside the snowline the best qualities of tea are raised in China; and the law will hold good in our country. The failure of the Schnell plantation in El Dorado county was due to improvidence and untoward circumstances of a peculiar character.

The soil and climate proved to be all right. But the Japanese lahor-contracts were broken, and the waters of irrigation were charged with iron and sulphur, which killed the young tea plants. The proprietor was involved in financial troubles and lost his property, through failure of remittances from Japan, to which country he returned. The experiment, however, settled the question in the affirmative. Can we raise our own tea in California? We can do on the foothills of our Nevadas, all that English enterprise has done and is doing, on the same kind of foothills of the snowy Himalayas.

Twenty millions of pounda of teas, superior far to China, were shipped in 1871 to London; giving attestation of most brilliant success. The teas of India bear higher prices than those of China; and this ia probably the reason why none has heen shipped to the American market. Aasam is a country 1,000 miles away to the eastward of the region we have heen describing. Tea has been raised there for 20 years past; and now ita production is very large, though, owing to peculiar circumstances, the public traces no record of the quantity. Tea is grown there, on the hot and humid hanks of Brahmapootra, a tributary of the Ganges. It is therefore rank and niggery. It is nnfit for beverage. But it fctches the highest prices for all that! The English market is full of apurious teas, home-made and foreign, that never came from the tea plant. They are chiefly for adulteration. But an ounce of Assam mixed with a pouud of Spurio, gives it a flavor that greatly promotes its value. Hence its price. It is bought only by grocers, who use it solely for doctoring. It is never for sale to the public. Lahor is cheap in India. In this respect California has disadvantages.

The only way to overcome it, is to encourage co-öperative Associations among the Chinese, after the fashion that has necessitated the farming out of the strawberry beds of Santa Clara. It is not the farming that costs, American device can overcome that, hut the leaves require hand-picking and careful selection. New sources of irrigation must also he found. The mining waters of our ditch-system will not answer. They deposit a ring of metal around the young plants, that throttles them heyond recovery.

Thus we have the whole story of our disadvantages. And after all, the fact remains patent, that our soil and climate are adapted to tea growing, and American ingenuity has overcome more ohstacles than stand in our way to achieving success in raising tea for Home Consumption.

Vineyards of the Foothills.

[Written for the Press.]

That our Eastern readers may form something of an idea of the importance that the vineyard interests of Californiia are likely to assume at no very distant day, we give the remarks of a correspondent of the Stockton *Independent*, writing from Gold Spring, Tuolumne County, in which he speaks of the vineyards to be found within the circle of two miles of foothill lands.

When it is understood that these foothills occupy the whole western base of the Sierra Nevada, more than three hundred miles in extent from north to south, and with a breadth of from five to fifteen miles, and nearly every acre suitable for vineyards, and that at present not one twentieth part is devoted to any description of culture, something of an idea can be formed of the opportunitiea yet open to the immigrant of the Atlantic States and European countries.

The Grape Interest.

Before leaving Stockton you requested me to examine into the vine-growing interest in the neighhorhood of Columhia and Gold Spring, the extent of the vineyards, the quantity of fruit produced and the quality and adaptahility for making wine, etc. I am, therefore, pleased to send you the following:

I first visited L. F. Jarvis on his vineyard called Vine Spring Vineyard, at Gold Spring. It contains 40 or 60 acres, planted with vines, a large portion heing yet young and not in full hearing. He has produced, for the last three years, about 7,000 gallons of wine each year, also a quantity of raisius and other dried fruit from his fine orchard. This year Mr. Jarvis will produce about 10,000 gallons of wine, or 60 tons of grapca.

John Moore has the next vineyard of ahont five acres, which will produce 20 tons of grapes. Mr. P. M. Trask has the next vineyard, just ahove Gold Spring, overlooking that place, and is located on high ground with a fine view of the surrounding country. He has 15 acres with vines, or 15,000 vines, that produced about 6,500 gallons of wine. The vineyard looks very finely. There ia also a very fine orchard of peaches, apples and pears, and some fine large fig trees. Mr. Trask will have 45 tons of grapes thia year.

Mr. John King's vineyard adjoins this ranch, which produces 15 tons of grapes. Mr. McNichols is next, and produces 15 tons also. Next to this is the Gold Spriug Vineyard, owned by Mr. Caverone, with a production of 50 tona of grapes. Mr. Daniel Johnson's vineyard, one mile from Columhia, produces 25 tons of fruit.

Mr. A. D. Champney's Mayflower Vineyard on Table Mountain, near Springfield, has 35 acres in vines and a fine fruit orchard. Only 10,000 of the vines are in bearing and will produce this year 5,000 gallons of wine, or 35 tona of grapes. Mr. Newbumer's vineyard joins this. It has five acres in viues and will produce 15 tons of grapes.

Mr. George White's vineyard, jnst below Springfield, of 15 acree, and several other vineyards in the same locality, will produce 45 tons collectively. At Shaw's Flat, one mile from there, are also several small vineyards capahle of producing 15 tons or more of fruit; and helow Columhia, on the Sonora road, is Mr. Bird's vineyard, and several others, which will produce together 35 tons of grapes.

The vineyards in the vicinity of Yankee Hill produce some 7,000 gallons of wine or 50 tons of fruit. Parsons Bros. at Columhia, have six acres in vineyard that producea 15 tons of grapes, and in the same locality there are some other small vineyards which produce from 10 to 15 tons or 1,500 gallons of wine.

The vineyards near Summit Pass will produce 10 tons of grapea, and Mr. Rheme's vineyard, near Columhia, about 16 tons of grapes.

Circle of Two Miles.

The entire product of the locality mentioned, all within a circle of two milcs will amount to 471 tons of grapes or 70,850 gallons of wine. This estimate is made at the very lowest possihle yield, and I feel satisfied that if the entire grape crop of this locality were collected that could he made available at this poiut that it would amount to not less than 100,000 gallons of wine; hesides a large quantity of hrandy could he made.

I have examined the wine produced in the majority of the vineyards mentioned, and am satisfied that the grapes grown on them will make excellent wine, hut most of the wine is spoiled in its manufacture. To manufacture a good wine it requires a great deal of experience and thorough knowledge of the material from which the wine is to be made.

The hest method to advance this great interest is the establishment of a large wine house hy some one who understands the husiness thoroughly, where the wine grower can sell his grapes and not be subjected to the risk of making a bad and unsaleable wine. Such an establishment could place a uniform and perfect article in the market, which would not spoil and would be sure of a quick sale at a paying price.

As soon as such an establishment is started in this locality you will see the hills around Columbia and Gold Spring covered with fine vineyards, and the vintners of this locality will find that it is more profitable to sell their grapes to such an establishment than to make poor wine. With a ready market at their door they will find that grape raising is one of the hest paying agricultural pursuits, besides being the most pleasant.

When the importance of the wine-growing interest of this locality is thoroughly understood, you will very soon after see the railroad coming up this valley to freight away the product. Hoping that this will meet the object of your inquiries, I remain yours respectively,

H. W. Q.

Gold Spring, Sept. 15, 1872.

COMPLIMENTS TO A SAN FRANCISCO BOAT CREW. The Sacramento *Union* pays the following compliment to the San Francisco boat "L'Esperance" and its crew:

The four-oared shell, "L'Esperance," which the Pioneer Club of San Francisco rowed in the late regatta, ia regarded by all hoatmen as a model craft. She weighs but 108 pounds, and yet carries the four heavy men composing her crew in the easiest manner possihle, neither burying forward nor dragging aft, and alippiug through the water like a fish. The beauty of it is, that she was huilt hy members of the Club (who are all hardworking men), viz: Geo. H. Strong, M. Long and J. H. Hussey, after a model prepared by Strong, during their houra of leisure in the evening. Hussey alao made the sculls. The hoat could not he improved in any way to suit the crew, and her huildera and ownera rightfully feel proud of her. The crew which rowed in her here on Tuesday have heen in training since the Fourth of July, being determined, if possible, not to suffer a recurrence of the defeat which they then received, and their work has developed in them skill of tho highest order. In a practice trial at the Bay, they made the aame distance that the "St. John'a" crew brag of in two minutes' less time than that crew did, and might have done better if they had had a competitor to press them well. They without doubt form the best crew on the coast, and would probably he able to represent California creditably in a pull anywhere.

The Mining and Scientific Press for 1872 is Still Marching Onward!

Our careful system of compiling, judiciously condensing, and conveniently arranging into regular departments, has heen heartily endorsed. It renders the paper worth more to readers, who can find handily that which interests them most. This plan will be continued in Volume XXV.

The weekly issues of the Press will contain reliahls

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Gives the progress of mining work from week to week in the various counties and districts throughout the principal mining regions of the United States, arranged in alphahetical order. It is the most extensive record of mining operations published in the world. It affords the intelligent miner a rare opportunity to know and profit hy the work and experience of his neighbors. Miners have few sonrces of practical information in their calling, and should embrace every reliahle means for improvement. Mining Operators and Shareholders, at home and abroad, weekly examine our Summary with increased interest and profit.

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Our "Domestic Economy"

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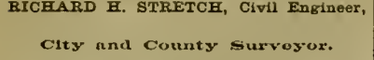
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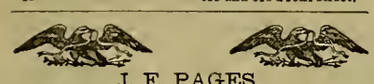
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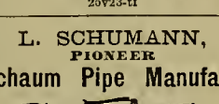
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Office of the San Francisco and Colorado River Railway Company,
NO. 305 SANSOME STREET,
SAN FRANCISCO,.....SEPT. 24, 1872.

TO THE PUBLIC.

THE BOARD OF SUPERVISORS OF THE CITY and County of San Francisco, having passed an Ordinance submitting to the Electors the question of granting a subsidy to our Company, for the Construction of a Railroad to the Colorado River, to connect with the railroads being built from the East, we are now in a better position to ask the citizens of San Francisco to join us and urge the importance of the undertaking; and beg to say:

First—We propose in good faith to build a first-class railroad, with all the dispatch possible, and certainly within the time provided in the ordinance.

Second—We pledge ourselves as men to the fact that we are entirely disconnected and free from all association with the Central or Southern Pacific Railroad Companies or their Managers or Directors, and are in genuine competition with them, and we have no association or connection with any other Railroad Company or combination in existence, and expect to have none, except business or running arrangements with lines from the East and South, which hereafter may desire to exchange business with us.

Third—We invite every citizen of the City and County of San Francisco to subscribe to our stock. Our Books are open to all. Our Company is not a close corporation, and in no sense a monopoly. We particularly invite every Taxpayer to subscribe, at least as much as he will be called upon to contribute to the subsidy, and thus, in a manner, free of legal difficulties, participate in the advantages growing out of the enterprise.

Fourth—A Committee of the Board will be in attendance at the office of the Company, No. 305 Sansome street, to receive subscriptions, and duly authorized parties will wait upon the citizens generally, giving them an opportunity to subscribe.

Fifth—This being an independent and competing road, there can be no reason for those who desire the success of such an enterprise to decline their co-operation, which we cordially invite.

J. MORA MOSS,	JOHN PARROTT,
PETER DONAHUE,	H. M. NEWHALL,
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Full List of U. S. Patents Issued to Pacifio Coast Inventors.

[From Official Reports to DEWEY & CO., U. S. and Foreign Patent Agents, and Publishers of the Mining and Scientifio Press.]

For Week Ending September 3n, 1872.*

Churn.—Melville P. Callender, Astoria, Or.

Wheel-Plow.—William Mason, Monmouth, Oregon.

Mone of Attaching Axles to Hubs.—Peter Bargion, Stockton, Cal., assignor to John Caine, eame place; antedated Angnst 29, 1872.

Combined Latch and Lock.—Vitruviue Frazee, S. F. Cal., aesignor to himeelf and William L. Bovyer, same place.

Door-Lock.—Vitruvins Frazee, S. F., Cal., aseignor of one-half of his right to William L. Bovyer, eame place.

Machine for Cutting Veneers.—Elijah Stone Gilmore, S. F., Cal.

Temporary Folding-Door.—William McMahon O'Brien, S. F., Cal..

Stem and Standard for Fragile Ware.—Frederick A. Will, S. F., Cal.

For Week Ending September 10th, 1872.

Apparatus for Multiplying Power.—John R. Duboie, Virginia City, Nev.

Rolleb-Skate —John A. Todd, Sacramento, Cal.

Bagatelle-Table.—William Evere, S. F., Cal.

Corset.—Henry S. Flood, S. F., Cal.

Governob for Steam-Engines.—Hugh H. Lamont, S. F., Cal., aseignor to Joehua Hendy, eame place.

Hanging-Bracket.—Henry Polley, S. F., Cal., aesignor of one-half of his right to Anthony Rosenfield, same place.

Curtain-Fixture.—Henry Polley, S. F., Cal., assignor to Henry Polley and Anthony Roeenfield, same place.

Vertical Teleoraph-Key.—Arthur B. Shearer, Davisville, Cal.

Machine for Crushino ann Stemming Grapes. Collins Wadhams, Los Angeles, Cal.

*The patents are not ready for delivery by the Patent Office until some daye afterward.

Note.—Copies of U. S. and Foreign Patents furnished by Dewey & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rstes. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency

New Incorporations.

Union Coal Co.—Sept. 26. Location: Kiteap Co., Washington Territory. Capital stock, $100,000. Trnstees—R. C. Page, Harry Prescott, J. F. Atwill, J. G. Bloomer and J. W. Bucklin.

Standarn M. ann M. Co.—Sept. 26. Location: Ely Dietrict, Lincoln County, Nevada. Capital etock, $3,000,000. Trusteee : J. W. Gashwiler, John W. Coleman, Danl. T. Meagher, S. D. Kereider and J. Clem Uhler.

Sanderson G. M. Co.—Sept. 28. Location: Railroad Dist, Calaverae Co., Cal. Capital stock, $1,800,000. Trustaee — John W. Harrison, Henri B. Berriman, James Hay Smith, Wallace Everson, and Harmon Kozminsky.

Branch Mint M. Co.—Sept. 28. Location: Nevada Co., Cal. Capital stock, $2,400,000. Trustees—Samuel Hermann, A. Blair, G. Howard Thompson, Paul Neumann, and C. P. Robinson.

Wahsatch Coal M. Co.—Sept. 30. Location: Kane County, Utah Territory. Capital, $3,-300,000, in 30,000 sharee. Trnstees—Henry Raymond, J. S. Beach and J. R. Duff.

State of Maine M. ann M. Co.— Oct. 1. Location: Amador Co., Cal. Capital, $2,400,-000. Truetees—John Fay, A. C. Morse, J. M. Buffington, H. B. Congdon and H. H. Beach.

The Greenville M. Co. filed on the 27th ult. a certificate of increase of capital stock from $400,000 to $1,200,000.

Meetings and Elections.

North Star Mining Co.—Sept. 25. Trustees: —A. K. P. Harmon (President), Thomae Bell, William B. Bourne, J. W. Gaehwiler and John C. Fall; Secretary, D. A. Jennings; Snperintendent, Stephen Moore.

Sanderson M. Co.—Trustees : Harmon Kozminsky (President), J. William Harrison, Jae, Hay Smith, Wallace Evereon and Henri B. Berryman; William Stuart, Secretary.

Bank of California. — Oct. 1. Directors : D. O. Mills, W. C. Ralston, D. J. Tallant, John O. Earl, Louis Sache, A. Hayward, Thomae Bell, Louis McLane, Nicholae Luning, Wm. Norris, William Alvord. At a meeting of the Board, the following officere were re-elected : D. O. Mille, Preeident; W. C. Ralston, Cashier, Thomae Brown, Assietant Cashier; S. Franklin, Secretary; W. W. Wiggins, Aceistant Secretary.

Alfalfa.—We examined another field of alfalfa the other day, grown on eedimentary land near Sacramento without irrigation. It was eown early last fall where there was some etubble and weeds to protect the young plante from frost. Thie eeason there have been three crops of hay cut from the land and the pasturage that remaine on one field hae been sold at $8 per acre. From the three crope already cut, there hae been gathered five tone to the acre, and at present another ton could be cnt.

Excavator.—The *Sacramento Union* in ite report of the State Fair, mentions the following: On the inside grounde there was one piece of machinery which deservee more than a paseng notice. We allude to Slueser'e eelf-loading excavator, a machine apparently eo eimple and yet so perfectly adapted to its work ae to commend it to the attention of all. It reeembles an ordinary two-horee wagon, and has an apparatus for plowing and loading dirt, which it is claimed it will do with a lighter draft than is required to break the eame ground with an ordinary plow. It is said with one epan of horses it will do the work of ten scrapere. It was worked yesterday morning in the presence of many intereeted parties. The bed of the excavator ie made to hold a cubic yard of dirt, and it was filled several times in less than half a minnte. It ie perfectly nnder the control of the driver, who, eitting in his eeat, can pull one rod which eete the scraper in the ground, another which opene the bottom of the body and lets the dirt out, or another bar which closee the same. For making roads over the level plaine of California, or digging irrigating ditchee, it eeeme to be well adapted. It digs a furrow about 12 inches broad, and may be set as deep ae 14 inchee. It is claimed to work ae well in hard adobe land as in softer soil. A. M. Burns of San Francieco had the excavator on exhibition and entered it for a premium.

Who Makes Castor Oil?—W. W. Montgomery, of Davieville, showe a very fine sample of caetor oil bean. He has thirty tons at home and he wonld be very glad to know where he can find a market for them. Let us hear from the oil people. We shall be very glad to disseminate any information that may be furniehed ue regarding this branch of industry. Perhaps Mr. Montgomery will favor us with particulars of the plant and its culture.

U. S. Mining Laws and Regulations.—Dewey & Co., proprietors of the Mining ann Scientifio Press—the American and Foreign Patent Agents of this city—have published in convenient pamphlet form the United States Mining Laws, and the regulations thereof; showing how mining lands may be purchased, manner of obtaining title to mining claims, and giving all necessary instructions to miners bow to avoid difficulties with adverse claimants. It is a valuable document—one that every person who is interested in mines should have a copy of. It can be had for 25 cents per copy at their office, No. 338 Montgomery street, San Francisco.

San Buenaventura, Aug. 17, 1872.

Messrs. Dewey & Co., San Francisco—Gentlemen : I received the patent specifications, drawings, etc., forwarded by you, and am much obliged for the prompt attendance you have given to all my business.

I remain, very truly yours, E. A. Edwards.

San Francisco Metal Market.

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

Thursday, Oct. 3, 1872.

Iron.—			
Scotch Pig Iron, ₱ ton	$60 00	@	65 00
White Pig, ₱ ton	50 00	@	58 00
Refined Bar, had assortment, ₱ lb.	— 04½	@	— 5
Refined Bar, good assortment, ₱ lb.	— 05	@	— 5½
Boiler, No. 1 to 4	— 05½	@	— 06
Plate, No. 5 to 9	— 06½	@	— 07
Sheet, No. 10 to 13	— 07½	@	— —
Sheet, No. 14 to 20	— 07½	@	— —
Sheet, No. 24 to 27	— 08	@	— —
Horse Shoes	8 00	@	
Nail Rod	10		
Norway Iron	8		
Rolled Iron	5		
Other Irons for Blacksmiths, Miners, etc.	5½	@	6½
Copper.—			
Sheathing, ₱ lb	— 40	@	— 45
Sheathing, Yellow	— 28	@	— 30
Sheathing, Old Yellow	— 12	@	— 12½
Composition Nails	— 28		— 30
Composition Bolts	— 28		— 30
Tin Plates.—			
Platea, Charcoal, IX ₱ box	17 50	@	— —
Plates, I C Charcoal	15 50		— —
Roofing Plates	15 50		16 —
Banca Tin, Shin, ₱ lb	— 50		— 55
Steel.—English Cast, ₱ lb	— 19		— 20
Drill	19		20
Flat Bar	19		20
Plough Points	3 75		4 00
Russia (for mould boards)	12½		15
Quicksilver.—₱ lb	— 55		— 87½
Lead.—Pig, ₱ lb	— 05¾		— 06
Sheet	— 10		— —
Pipe	9		10
Bar	06¾		7
Zinc.—Sheets, ₱ lb	— 11		— 11½
Borax.—Refined	— 27		— 30
Borax, crude	— 5		— —

Leather Market Report.

[Corrected weekly by Dolliver & Bro., No. 109 Post st.]

San Francisco, Thursday, Oct. 3, 1872.

Sole Leather.—The Eastern market is higher, and some tanners have advanced their pricee here. We quote as below;

City Tanned Leather, ₱ lb	26@29
Santa Cruz Leather, ₱ lb	26@29
Country Leather, ₱ lb	25@28
Stockton Leather, ₱ lb	26@29

French skins continue firm. All California skins are nosroe and bring full prices.

Jodot, 8 Kil., per doz	$80	00@	
Jodot, 11 to 19 Kil., per doz	66	00@	85 00
Jodot, second choice, 11 to 15 Kil. ₱ doz	56	00@	75 00
Lemoine, 16 to 18 Kil., ₱ doz	75	00@	77 50
Levin, 12 and 13 Kil., per doz	68	00@	70 00
Cornellian, 16 to 19 Kil., per doz	63	00@	65 00
Cornellian, 12 to 14 Kil., per doz	56	00@	60 00
Ogeran Calf, ₱ doz	54	00@	
Simon, 18 Kil., ₱ doz	60	00	
Simon, 20 Kil. ₱ doz	65	00	
Simon, 24 Kil. ₱ doz	72	00	
Robert Calf, 7 and 8 Kil	35	00@	40 00
French Kips, ₱ lb	1	10@	1 30
California Kip, ₱ doz	60	00 to	80 00
French Sheep, all colors, ₱ doz	8	00@	15 00
Eastern Calf for Backs, ₱ lb	1	15@	1 25
Sheep Roans for Topping, all colors, ₱ doz	8	00@	13 00
Sheep Roans for Linings, ₱ doz	5	50@	10 50
California Russett Sheep Linings	1	75@	5 50
Best Jodot Calf Boot Legs, ₱ pair	5	25	
Good French Calf Boot Legs, ₱ pair	4	50@	5 00
French Calf Boot Legs, ₱ pair	4	00	
Harness Leather, ₱ lb		30@	37½
Fair Bridle Leather, ₱ doz	48	00@	72 00
Skirting Leather, ₱ lb		34@	37½
Welt Leather, ₱ doz	30	00@	50 00
Buff Leather, ₱ foot		18@	21
Wax Side Leather, ₱ foot		20@	22

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* * * This hook, which treete in an intelligent and practical way on almost every topic connected with mining pursuits, should he in the hands of every millman, metallurgist, prospector and miner on the Pacific Coast.—[S. F. Commercial Herald.

* * Besides that, there is much actual knowledge to be gained from a perusal of thie volume, and in this respect alone it will he a valuable assistant to those engaged actively in mining.[—S. F. Chronicle.

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Office of Union Rolling Mills.

Chicago, July 20, 1872.

Mr. L. P. Dodge, Agent for Whelply & Storer—Sir; The Breaker or Crusher we purchesed of you is working to our entire satisfaction. We are not running it up to its full capacity, but es it is, we can easily crush eeven tons of Gaunister per hour. We coneider it the best machine for the purpose we ever used, and cordially commend them to any parties who require such machinery. Respectfully, Wm. Chisholm, Vice Pres't.

N. B.—See illustrated adv. in another column.

An Order for Our New Books from Headquarters.—Messrs. Dewey & Co., San Francisco, Cal.—Gents: Please send a copy of your new work on Indigenous Sugars, to this Department, with duhlicate bills rcceipted, and the amount shall he remitted hy return mail. Yours, respectfully

J. B. Russell, Librarian.

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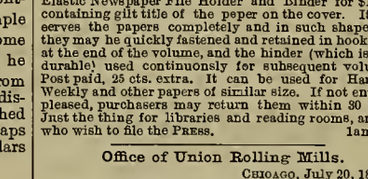

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Mining and Other Companies.

Owing to the time necessary to mail the present large edition of the M. & S. Press, we are obliged to go to press on Thursday evening—which is the very latest hour we can receive advertisements.

Altona Gravel Mining Company—Location

of works, Grass Valley, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 2d day of October, 1872, an essea-ment of ten cents per share was levied upon the capital stock of said company, payahle immediately in United States gold coin, to the Secretary, at No. 23 Merchants' Exchange, San Francisco, California.

Any stock upon which said assessment shall remain nnpaid on the 2d day of November, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall he made before, will be sold on Monday, the 25th day of November, 1872, to pay the delinquent assessment, tog ther with costs of advertising and expenses of sale. By order of the Board of Trustees.

I DAVID WILDER, Secretary.

Office—23 Merchants' Exchange, San Francisco, Cal. oct5-5i

Auburn Gold Mining Company.—Location

of Works, Auburn, Placer County, California.

Notice is hereby given that at a meeting of the Trnsteas of said Company, held on the 13th day of September, 1872, an assessment of twenty-five cents per share was levied on the capital stock of said company, payable immediately, in gold coin of the United States, to the Secretary, at his office. No. 7 Stevenson Building, in San Francisco, Cal. Any stock upon which said assessment shall remain nnpaid on Monday, October 14th, 1872, shall he deemed delinquent, and will he duly advertised for sele at public auction, and unless payment shall he made before, will be sold on Wednesday, November 6th, 1872, to pay the delinquent assessment, together with coste of advertisiug and expenses of sale. By order of the Board of Trustees

GEO. W. DIXON, Secretary.

No. 7 Stevenson Building, corner of Montgomery and Californie streets, San Francisco, California. se21-4w

Beckwith Mining Company—Location of

works, Ely Mining District, Lincoln County, State of Nevada.

Notice.—There are delinqnent npon the following described stock, on account of assessment levied on the 19th day of August, 1872, the eoveral amounts set opposite the namss of the reepective shareholders, as follows :

Names.	No. Certificate.	No. Sharee.	Amount.
Curtis, John A	unissued	1500	$300 00
Kitten, W W	unissued	1500	300 00
Lanins, Kinsey	unissued	1500	300 00

And in accordance with law, and an order of the Board of Trustees, made on the 19th day of August, 1872, so many shares of each parcel of said stock as may he necessary will he sold at public auction, at the office of the Company, Room 5 and 5, No. 302 Montgomery street, San Francisco, California, on Wednesday, the 23d day of October, 1872, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

WM. H. WATSON, Secretary.

Office, Room 5 and 5, No. 302 Montgomery street, San Francisco, California. oc5-3w

Cottonwood Creek Gold Mining Company

Location of Worke, Shasta and Tehama Counties, State of California

Notice.—There are delinquent upon the following described stock, on account of assessment, No. 1, levied on the nineteenth (19th) day of August A. D., 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Sharcs.	Amount.
Crittenden, J L	20	1500	$105 00
King, J L	31	100	7 00
Kenney, C A, Trustee	37	200	14 00
Kenney, C A, Trustee	38	200	14 00
Kenney, C A, Trustee	39	100	7 00
Van Wyck, S M	14	1000	70 00
Van Wyck, S M	15	1000	70 00
Van Wyck, S M	15	1000	70 00
Van Wyck, S M	17	500	35 00
Van Wyck, S M	18	500	35 00
Van Wyck, S M	19	416	29 12
Van Wyck, S M	44	75	5 25
Welch, Wm	3	100	7 00
Welch, Wm	4	1000	70 00
Welch, Wm	5	1000	70 00
Welch, Wm	6	1000	70 00
Welch, Wm	7	1000	70 00
Welch, Wm	10	100	7 00
Welch, Wm	11	100	7 00
Welch, Wm	12	117	8 19
Welch, Wm	41	975	58 25

And in accordance with law, and an order of the Board of Trustees, made on the nineteenth (19th) day of August, A. D. 1872, so many sharee of each parcel of said stock as may he necesary, will he sold at the office of the Company, No. 411 California street, San Francisco, California, on Tuesday, the fifteenth (15th) day of October, A. D. 1872, at the hour of one (1) o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

JOS. L. KING. Secretary.

Office, No. 411 California street, San Francisco, California. se28-3w

Excelsior Silver Mining Company—Lo-

cation of works, Yellow Pine District, Nye County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 26th day of September, 1872, an assessment of Ten Cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin to the Secretary, at No. 640 Washington street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 29th day of October, 1872, shall he deemed delinquent, and will he duly advertised for sale at public auction, and unless payment shall he made before, will be sold on Monday, November 22, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

W. A. KOLLMYER, Secretary.

Office, 640 Washington street, San Francisco, Cal.

Lady Franklin Gold and Silver Mining

Company—Location of works, Silver Mountain Mining District, Alpine County, State of California.

Notice is hereby given, that at a meeting of the Trustees of said Company, held on the 24th day of September, 1872, an assessment of fifty (50) cents per share was levied upon the capital stock of said Company payeble immediately, in United States Gold Coin, to the Secretary of the Company, at 507 Montgomery street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the twenty-eighth day of October, 1872, shall be deemed delinquent, and will be duly advertised for sele at public auction, and unless payment shall be made before, will be sold on the eighteenth day of November, 1872, to pay the de linquent assessment, together with costs of advertising and expenses of the sale.

J. S. LUTY, Secretary.

Office, No. 507 Montgomery street, San Francisco, Cal. oc5

Louise Mining Company.—Location of

Works, Ely Mining District, Lincoln County, Nevada.

Notice is hereby given that at a meeting of the Board of Trustees of said Company, held on the 14th day of September, 1872, an assessment of fifty cents (50 cents) per share was levied upon the capital stock of said company, payable immediately, in U. S gold coin, to the Secretary, at the office of the company, room 5, No. 302 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Saturday, the 18th day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 9th day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees. WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery street, San Francisco, California. se21-4w

Ohio Consolidated Gold Mining Company

of West Point, Calaveras County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 24th day of September, 1872, an assessment of Ten Cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No. 432 Montgomery street, Room No. 1. Any stock upon which said assessment shall remain unpaid on the second day of November, A. D. 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 23d day of November, A. D. 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

W. AUGUSTUS KNAPP, Secretary.

Office, 432 Montgomery street, over Donahue & Kelly's Bank. se28-4t

Pocahontas Gold Mining Company—Location of Works, Mud Springs, El Dorado County, California.

Notice is hereby given that at a meeting of the Board of Trustees of said Company, held on the 17th day of September, 1872, an assessment of fifty (50) cents per share was levied upon the capital stock of said company, payable immediately, in United States gold coin, to the Secretary, at the office of the company, room 4, No. 401 California street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Thursday, the 24th day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before will be sold on Monday, the 18th day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

D. A. JENNINGS, Secretary.

Office—Room 4, No. 401, California street, San Francisco, California. se21-4w

Quail Hill Mining and Water Company—

Location of works, Calaveras County, State of California.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 22d day of August, 1872, the several amounts set opposite tha names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
T S Spring, Trustee	41	120	$600 00
A E Hill, Trustee	40	7	35 00
A E Hill, Trustee	39	120	600 00
A E Hill, Trustee	37	119	595 00
A E Richardson, Trustee	45	60	300 00
A E Hill, Trustee	31	50	250 00

And in accordance with law, and an order of the Board of Trustees, made on the 2d day of October, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, No. 409 California street, San Francisco, California, on the 24th day of October, 1872, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale. T. F. CRONISE, Secretary.

Office, 409 California street, San Francisco, California. oc5-3t

Red Cloud Silver Mining Company—Location of Works, Ely District, Lincoln County, Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 24th day of August, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Frank Cisler	2	100	$25 00
Frank Cisler	4	100	26 00
Frank Cisler	8	100	25 00
Frank Cisler	10	100	25 00
Frank Cisler	14	100	25 00
Frank Cisler	15	100	25 00
Frank Cisler	19	100	25 00
Frank Cisler	22	50	12 50
Frank Cisler	26	50	12 60
Frank Cisler	26	25	6 25
Frank Cisler	27	25	6 25
Frank Cisler	29	26	6 25
Frank Cisler	60	10	2 50
Frank Cisler	61	10	2 50
Frank Cisler	62	10	2 50
Frank Cisler	63	10	2 50
Frank Cisler	64	10	2 50
Frank Cisler	65	10	2 50
Frank Cisler	66	10	2 50
Frank Cister	67	10	2 50
Frank Cisler	68	10	2 50
Frank Cisler	69	10	2 50
Frank Cisler	70	20	5 00
Frank Cisler	71	20	5 00
Frank Cisler	72	20	5 00
Frank Cisler	73	20	5 00
Frank Cisler	74	20	5 00
Frank Cisler	76	20	6 00
Frank Cisler	76	20	5 00
Frank Cisler	77	20	5 00
Frank Cisler	78	20	5 00
Frank Cisler	79	20	5 00
Frank Cisler	80	50	12 50
Frank Cisler	81	50	12 50
Frank Cisler	82	50	12 50
Martin & Lane	35	50	12 50
Martiu & Lane	36	50	12 50
Martin & Lane	37	50	12 50
Martin & Lane	38	50	12 50
Martin & Lane	39	50	12 50
Martin & Lane	40	50	12 50
Martin & Lane	41	50	12 50
Martin & Lane	42	50	12 50
Martin & Lane	43	50	12 50
Martin & Lane	44	50	12 50
J C Lennon	56	60	12 60
J C Lennon	66	50	12 50
J C Lennor	67	60	12 50
J C Lennon	68	50	12 00
R R Givens, trustee	59	50	12 50
C X Hobbs	84	600	125 00
E Skerritt, trustee	85	60	12 50
E Skerritt, trustee	87	100	25 00
E Skerritt, trustee	208	130	32 50
Baldwin Gardiner, trustee	156	10	2 60
Baldwin Gardiner, trustee	163	500	125 00
Baldwin Gardiner, trustee	164	500	125 00
Baldwin Gardiner, trustee	165	500	125 00
Baldwin Gardiner, trustee	166	500	125 00
Baldwin Gardiner, trustee	167	500	125 00
Baldwin Gardiner, trustee	168	500	125 00
Baldwin Gardiner, trustee	169	500	125 00
Baldwin Gardiner, trustee	170	500	125 00
Baldwin Gardiner, trustee	171	500	125 00
Baldwin Gardiner, trustee	172	500	125 00
Baldwin Gardiner, trustee	173	500	125 00
Baldwin Gardiner, trustee	179	200	50 00
Baldwin Gardiner, trustee	180	200	50 00
Baldwin Gardiner, trustee	181	200	50 00
Baldwin Gardiner, trustee	182	200	50 00
Baldwin Gardiuer, trustee	183	200	50 00
Baldwin Gardiner, trustee	184	200	60 00
Baldwin Gardiner, trustee	185	200	50 00
Baldwin Gardiner, trustee	186	200	50 00
Baldwin Gardiner, trustee	187	200	50 00
Baldwin Gardiner, trusteo	188	200	50 00
Baldwin Gardiner, trustee	189	100	25 00
Baldwin Gardiner, trustee	190	100	25 00
Baldwin Gardiner, trustee	191	100	25 00
Baldwin Gardiner, trustee	192	100	25 00
Baldwin Gardiner, trustee	195	100	25 00
Baldwin Gardiner, trustee	197	100	25 00
Baldwin Gardiner, trustee	198	100	25 00
Baldwin Gardiner, trustse	199	100	25 00
Baldwin Gardiner, trustee	200	100	25 00
Baldwin Gardiner, trustee	201	100	25 00
Baldwin Gardiner, trustee	202	100	25 00
Baldwin Gardiner, trustee	203	100	25 00
Baldwin Gardiner, trustee	204	100	25 00
Baldwin Gardiner, trustee	205	50	12 60
Baldwin Gardiner, trustee	206	25	8 25
W R T Peacock, trustee	210	50	12 50
J P Cavellier, trustee	213	50	12 50

Aud in accordance with law, and an order of the Board of Trustees, made on the 24th day of August, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction at the office of the Company, room 14, No. 331 Montgomery street, San Francisco, Cal., on the 16th day of October, 1872, at the hour of 1o'clock P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

EDMUND F. CLARK, Secretary.

Office, No. 14 Stevenson Building, No. 331 Montgomery street, San Francisco. se28-3w

Silver Sprout Mining Company—Location of works and mines, Kearsarge District, Inyo county, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said company, held on the 26th day of August, 1872, an assessment of fifty cents per share was levied upon the capital stock of said company payable immediately in United States gold coin, to the Secretary at the office of the company, No. 318 California street, S. F.

Any stock upon which said assessment shall remain unpaid on the eighth day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the eighth day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. B. WINCARD, Secretary.

Office—Room No. 1, second floor, No. 318 California St., S. F. ag31-4t

Silver Wave Mining Company—Location of works, White Pine Mining District, White Pine County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the Twenty-first day of September, 1872, an assessment of one dollar per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary of said Company, at the Company's office, 418 California street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Saturday, the Twenty-sixth (26th) day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the Twenty-fifth (25th) day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

se28-4t J. W. CLARK, Secretary.

Office, 418 California street, San Francisco, Cal.

Tellurium Gold and Silver Mining Company—Location of works, Pine Grove, Amador County, California.

Notice.—There are delinquent upon the following described stock, on account of assessment (No. 17) levied on the third (3d) day of September, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Wm Vosburgh	4	30	$30 00
John Melone	6	25	25 00
George W Hubbard	7	10	10 00
George W Hubbard	100	10	10 00
William H Cone	9	15	15 00
J McHardy Hay	8	6	6 00
E Whiting	15	10	10 00
E Whiting	16	10	10 00
Henry Austin	20	6	5 00
James Vizina	31	20	20 00
C P Chesley	33	7	7 00
J H Mullins	34	23	23 00
Henry Van Ness	35	10	10 00
Henry Van Ness	36	5	5 00
J R Mead	40	100	100 00
D'Alva Mosse	43	10	10 00
Ahel Wade	55	50	50 00
I L Thuber	65	10	10 00
H H Edmonds	57	12	12 00
T Pritchard	58	10	10 00
A J Baker	61	5	5 00
Isaac Wilson	5	10	10 00
Isaac Wilson	62	10	10 00
Isaac Wilson	96	10	10 00
Judson H Clark	72	20	20 00
George W Ryder	73	198	108 00
H H Wood	74	5	6 00
Richard Ferris	75	3	3 00
Alice C Hinckley	77	10	10 00
William C Hinckley	78	10	10 00
Oscar Burhank	80	10	10 00
Oscar Burhank	81	10	10 00
G S Hall	76	95	95 00
G S Hall	84	10	10 00
G S Hall	85	50	50 00
G S Hall	86	20	20 00
G S Hall	87	10	10 00
G S Hall	88	10	10 00
G S Hall	89	5	5 00
G S Hall	90	5	5 00
G S Hall	105	40	40 00
E B Bunce	91	10	10 00
James Mulrooney	71	6	5 00
James Mulrooney	92	10	10 00
William Weiss	21	7	7 00
William Weiss	22	15	15 00
William Weiss	23	3	3 00
William Weiss	93	25	25 00
Murray & Noble	97	6	6 00
Murray & Noble	99	5	6 00

And in accordance with law, and an order of the Board of Trustees, made on the third day of September, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by the Bore & Co., at No. 327 Montgomery street, San Francisco, California, on Saturday, the 28th day of October, 1872, at the hour of 11 o'clock A. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

WM. H. SCERY, Secretary.

Office, N. E. corner Kearny and Clay streets, San Francisco, California. oc6 3t

Victoria and Imperial Tunnel and Mining Company—Location of works, Little Cottonwood, Utah Territory.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 14th day of August, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Bidleman, J B	67	100	$10 00
Bidloman, J B	68	100	10 00
Bidleman, J B	69	50	5 00
Bidleman, H J	63	2000	200 00
Bidleman, H J	64	1000	100 00
Bidleman, H J	65	600	50 00
Bidleman, H J	66	250	25 00
Coburn, S A	8	50	600 00
Coburn, S A	14	50	5 00
Coburn, S A	15	100	10 00
Coburn, S A	16	100	10 00
Coburn, S A	17	100	10 00
Coburn, S A	18	100	10 00
Coburn, S A	19	100	10 00
Livermore, H G	41	2000	200 00
Raymond, Henry	44	250	25 00
Raymond, Henry	45	250	25 00
Raymond, Henry	46	250	25 00
Raymond, Henry	47	250	25 00
Raymond, Henry	48	250	25 00
Raymond, Henry	49	250	25 00
Raymond, Henry	50	250	25 00
Raymond, Henry	51	250	25 00
Tilden, Thomas	52	200	20 00
Tilden, Thomas	53	200	20 00
Tilden, Thomas	54	200	20 00
Tilden, Thomas	55	200	20 00
Tilden, Thomas	56	200	20 00
Tilden, Thomas	57	200	20 00
Tilden, Thomas	58	200	20 00
Tilden, Thomas	59	200	20 00
Tilden, Thomas	60	200	20 00
Tilden, Thomas	81	200	20 00
Washburn, C A	20	500	50 00
Washburn, C A	21	500	50 00
Washburn, C A	22	500	50 00
Washburn, C A	23	100	10 00
Washburn, C A	26	50	5 00
Washburn, C A	27	50	5 00
Washburn, O A	28	50	5 00
Washburn, C A	29	25	2 50
Washburn, C A	30	25	2 50
Washburn, C A	31	25	2 50
Washburn, C A	32	25	2 50
Virgin, B J (unissued)		3050	457 50

And in accordance with law, and an order of the Board of Trustees, made on the 14th day of August, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the company, Room 5, No. 302 Montgomery street, San Francisco, Cal., on Saturday, the 12th day of October, 1872, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

WM. H. WATSON, Secretary.

Office—Room 5, No. 302 Montgomery street, San Francisco, Cal. se21-3t

Winnemucca Chief Silver Mining Company—Location of Works, Humboldt County, State of Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 19th day of June, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
John Robins	159	100	$15 00
John Robins	160	100	15 00
John Robins	161	100	15 00
John Robins	162	100	15 00
John Robins	163	100	15 00
John Robins	164	100	15 00
John Robins	165	100	15 00
John Robins	166	100	15 00
John Robins	167	100	15 00
John Robins	168	100	16 00
John Robins	176	100	16 00
John Robins	177	100	15 00
John Robins	178	100	15 00
John Robins	179	50	7 50
John Robins	209	500	75 00
John Robins, Trustee	9	500	75 00
John Robins, Trustee	19	500	75 00
John Robins, Trustee	20	500	75 00
John Robins, Trustee	21	100	15 00
John Robins, Trustee	22	100	15 00
John Robins, Trustee	23	100	16 00
John Robins, Trustee	24	100	15 00
John Robins, Trustee	26	50	7 50
John Robins, Trustee	28	50	7 50
John Robins, Trustee	27	50	7 50
T F Cronise, Trustee	111	500	75 00
T F Cronise, Trustee	112	500	75 00
T F Cronise, Trustee	113	200	30 00
T F Cronise, Trustee	114	200	30 00
T F Cronise, Trustee	116	200	30 00
T F Cronise, Trustee	116	200	30 00
T F Cronise, Trustee	117	200	30 00
T F Cronise, Trustee	118	100	16 00
T F Cronise, Trustee	119	100	15 00
T F Cronise, Trustee	120	100	15 00
T F Cronise, Trustee	121	100	16 00
T F Cronise, Trustee	122	100	15 00
T F Cronise, Trustee	123	100	15 00
T F Cronise, Trustee	124	100	15 00
T F Cronise, Trustee	125	100	15 00
T F Cronise, Trustee	126	100	15 00
T F Cronise, Trustee	127	100	16 00
T F Cronise, Trustee	128	100	15 00
T F Cronise, Trustee	129	100	15 00
T F Cronise, Trustee	130	100	15 00
T F Cronise, Trustee	131	100	15 00
T F Cronise, Trustee	132	100	15 00
T F Cronise, Trustee	133	100	15 00
T F Cronise, Trustee	134	100	16 00
T F Cronise, Trustee	136	100	15 00
T F Cronise, Trustee	136	100	15 00
T F Cronise, Trustee	137	100	15 00
T F Cronise, Trustee	138	50	7 50
T F Cronise, Trustee	139	50	7 50
T F Cronise, Trustee	140	50	7 50
T F Cronise, Trustee	141	50	7 60
T F Cronise, Trustee	142	50	7 60
T F Cronise, Trustee	143	50	7 50
T F Cronise, Trustee	144	50	7 50
T F Cronise, Trustee	146	50	7 50
T F Cronise, Trustee	146	50	7 50
T F Cronise, Trustee	147	50	7 50
T F Cronise, Trustee	148	50	7 50
T F Cronise, Trustee	149	50	7 50
T F Cronise, Trustee	150	50	7 50
T F Cronise, Trustee	151	50	7 50
T F Cronise, Trustee	152	50	7 50
T F Cronise, Trustee	163	50	7 50
T F Cronise, Trustee,	154	50	7 50
T F Cronise, Trustee	155	50	7 50
T F Cronise, Trustee	156	50	7 50
T F Cronise, Trustee	157	50	7 50
T F Cronise, Trustee	172	100	15 00
T F Cronise, Trustee	173	100	15 00
A O Peachy	62	3000	460 00
A C Peachy	53	1000	150 00
J H Crossman	74	200	30 00
J D Minor	11	100	15 00
M S Thompson	12	100	15 00
J J Lynn	13	100	15 00
C W Carter	14	100	15 00
M S Bonnifield	15	50	7 60
M S Bonnifield	17	50	7 50
T J Poulterer, Trustee	28	500	76 00
T J Poulterer, Trustee	29	500	75 00
T J Poulterer, Trustee	30	500	76 00
T J Poulterer, Trustee	32	500	75 00
T J Poulterer, Trustee	33	500	75 00
T J Poulterer, Trustee	34	500	75 00
T J Poulterer, Trustee	35	500	76 00
T J Poulterer, Trustee	36	500	76 00
T J Poulterer, Trustee	37	500	75 00
T J Poulterer, Trustee	38	500	75 00
T J Poulterer, Trustee	39	500	75 00
T J Poulterer, Trustee	40	500	76 00
T J Poulterer, Trustee	41	500	75 00
T J Poulterer, Trustee	42	500	75 00
T J Poulterer, Trustee	43	600	75 00
T J Poulterer, Trustee	44	600	75 00
T J Poulterer, Trustee	46	600	75 00
T J Poulterer, Trustee	47	500	75 00
T J Poulterer, Trustee	48	500	76 00
T J Poulterer, Trustee	49	600	75 00
T J Poulterer, Trustee	60	500	75 00
T J Poulterer, Trustee	51	500	75 00
T J Poulterer, Trustee	76	600	75 00
T J Poulterer, Trustee	76	200	30 00
T J Poulterer, Trustee	77	200	30 00
T J Poulterer, Trustee	78	100	15 00
T J Poulterer, Trustee	79	100	15 00
T J Poulterer, Trustee	80	100	15 00
T J Poulterer, Trustee	81	100	15 00
T J Poulterer, Trustee	82	100	16 00
T J Poulterer, Trustee	83	100	15 00
T J Poulterer, Trustee	84	50	7 50
T J Poulterer, Trustee	85	50	7 50
T J Poulterer, Trustee	87	50	7 50
T J Poulterer, Trustee	88	50	7 50
T J Poulterer, Trustee	89	50	7 50
T J Poulterer, Trustee	91	50	7 50
T J Poulterer, Trustee	93	36	5 25
T J Poulterer, Trustee	95	26	3 75
T J Poulterer, Trustee	98	25	3 75
T J Poulterer, Trustee	109	26	3 75
T J Poulterer, Trustee	110	25	3 75
T J Poulterer, Trustee	169	100	15 00
T J Poulterer, Trustee	170	100	15 00
T J Poulterer, Trustee	171	100	15 00
J Clem Uhler, Trustee	54	500	75 00
J Clem Uhler, Trustee	56	500	75 00
J Clem Uhler, Trustee	57	500	75 00
J Clem Uhler, Trustee	58	500	75 00
J Clem Uhler, Trustee	59	200	30 00
J Clem Uhler, Trustee	60	100	15 00
J Clem Uhler, Trustee	61	100	15 00
J Clem Uhler, Trustee	62	100	15 00
J Clem Uhler, Trustee	63	100	15 00
J Clem Uhler, Trustee	64	100	15 00
J Clem Uhler, Trustee	65	100	15 00
J Clem Uhler, Trustee	66	100	15 00
J Clem Uhler, Trustee	67	100	15 00
J Clem Uhler, Trustee	68	50	7 50
J Clem Uhler, Trustee	69	50	7 50
J Clem Uhler, Trustee	70	50	7 50
J Clem Uhler, Trustee	71	50	7 50
J Clem Uhler, Trustee	72	50	7 50
J Clem Uhler, Trustee	73	50	7 50
J Clem Uhler, Trustee	180	500	75 00
J Clem Uhler, Trustee	181	500	75 00
J Clem Uhler, Trustee	182	500	75 00
J Clem Uhler, Trustee	183	500	75 00
J Clem Uhler, Trustee	184	100	15 00
J Clem Uhler, Trustee	185	100	15 00
J Clem Uhler, Trustee	186	100	15 00
J Clem Uhler, Trustee	187	100	15 00
J Clem Uhler, Trustee	188	100	15 00
J Clem Uhler, Trustee	189	100	15 00
J Clem Uhler, Trustee	190	100	15 00
J Clem Uhler, Trustee	191	100	15 00
J Clem Uhler, Trustee	192	100	15 00
J Clem Uhler, Trustee	193	100	15 00
J Clem Uhler, Trustee	194	100	15 00
J Clem Uhler, Trustee	195	100	15 00
J Clem Uhler, Trustee	196	100	15 00
J Clem Uhler, Trustee	197	100	15 00
J Clem Uhler, Trustee	198	100	15 00
J Clem Uhler, Trustee	199	50	7 50
J Clem Uhler, Trustee	200	50	7 50
J Clem Uhler, Trustee	201	50	7 50
J Clem Uhler, Trustee	202	50	7 50
J Clem Uhler, Trustee	203	50	7 50
J Clem Uhler, Trustee	204	50	7 50
J Clem Uhler, Trustee	205	50	7 50
J Clem Uhler, Trustee	206	50	7 50
J Clem Uhler, Trustee	207	50	7 60
J Clem Uhler, Trustee	208	50	7 50
L L Robinson	210	600	75 00

And in accordance with law, and an order of the Board of Trustees, made on the 19th day of June, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, No. 409 California street, San Francisco, California, on the 20th day of August, 1872, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale. T. F. CRONISE, Secretary.

Office, 409 California street, San Francisco, California.

At a meeting of the Board of Trustees held this day, the above sale was postponed to Mondsy, the 16th day of September, 1872, at the same place and hour.

T. F. CRONISE, Secretary.

San Francisco, Cal., August 19, 1872.

POSTPONEMENT.—At a meeting of the Trustees, held this day, the above sale was postponed to Wednesday, the 15th day of October, 1872, at the same hour and place. T. F. CRONISE, Secretary.

San Francisco, Cal., Sept. 16, 1872.

THE PATENT Novelty Mill and Grain Separator

Is one of the greatest improvements of the age for cleaning and separating grain, while it combines all the essential qualities of a First-class Fanning Mill. It also far excels anything that has been invented for the separation of grain. It has been thoroughly tested on all the different kinds of Mixed Grain. It takes out Mustard, Grass Seeds, Barley and Oats, and makes two distinct qualities of wheat if desired.

For further information apply to R. STONE,
eow-hp 422 Battery street, San Francisco.

From ALL SIZES 3 to 30 Horse Power. **Hoadley's PORTABLE Engines** Sole Agents TREADWELL & Co

"THE HOADLEY" is the Perfection of the Portable Engine. For sale, with or without wheels, at Machinery Depot of TREADWELL & CO., Market, head of Front street, San Francisco. 14v24 eowbp

Rubber and Oak-Tanned Leather **Belting**

New Stock, just in; Pawtucket manufacture; stand ard quality—warranted *the best*. Come and see and get prices, or give it a trial. Sold low by

TREADWELL & CO.,
12v24 Market, cor. Fremont St., San Francisco.

FOR SALE.

An interest in a Valuable Invention.

A NEW, FOLDING, CHILD'S CARRIAGE.

Call and examine at 628 Pine street.

M. ANSIGLIONI, San Francisco, Cal.

N. B.—The above invention has been protected by Caveat. 9v25-2m

English and American **Hardware!**

A Large, Fresh Stock just received. The old friends of the house especially, as well as our later patrons, are invited to send in their orders. We are prepared to fill such satisfactorily and promptly.

TREADWELL & CO.,
3v26-eowbp San Francisco.

Machinists and Foundries.

ESTABLISHED 1851.

PACIFIC IRON WORKS,

First and Fremont streets,

SAN FRANCISCO

IRA P. RANKIN, A. P. BRAYTON,
GEO. W. FOGG, Superintendent.

Steam Engines and Boilers,

MARINE AND STATIONARY,

IRON AND BRASS CASTINGS

Mining Machinsry of Evsry Description,

And all other claeesa of work generally done at first-olase eetablishments, manufactured by us at the lowest prices, and of the best quality.

☞ Particular attention paid to Jobbing Work and Repairs.

N. B.—Sole Agents for sale of HUNTOON'S CELEBRATED PATENT GOVERNOR.

18v20-3m GODDARD & CO.

FULTON

Foundry and Iron Works.

HINCKLEY & CO.,

MANUFACTURERS OF

STEAM ENGINES,

Quartz, Flour and Saw Mills,

ayes' Improved Steam Pump, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

N. E. corner of Tehama and Fremont streets, abeve Howard street, San Francisco. 3-qy

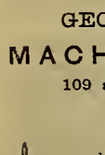
---

GEORGE T. PRACY,

MACHINE WORKS,

109 and 111 Mission Street,

SAN FRANCISCO.



These Works have lately been increased, by additional Tools, and we are now able to turn out any kind of work, equal to and cheaper than any establishment in the State; that is to say:—

STEAM ENGINES,

Flour and Saw Mills,

QUARTZ MACHINERY

Printing Presses,

AND MACHINERY MADE OF EVERY DESORIPTION.

Improved Safety Store Hoists,

Fitted with Cutting's Patent Oams, unequaled for safety, convenience and cheapness. This Hoiet can be built for about half the price of any other in uee. To be seen at HAWLEY & CO.'S.

ALSO, MANUFAOTURER AND SOLE AGENT FOR

Pracy's Celebrated Governor.

TURNING LATHES, Etc., constantly on band.

4v23tf

UNION IRON WORKS,

Sacramento.

ROOT, NEILSON & CO.,

MANUFACTURERS OF

STEAM ENGINES, BOILERS,

CROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR

Dunbar's Patent Self-Adjusting Steam Piston

PACKING, for new and old Cylinders.

And all kinds of Mining Machinery.

Front Street, between N and O streets,

SACRAMENTO CITY.

PACIFIC

Rolling Mill Company,

SAN FRANCISCO, CAL.

Established for the Manufacture of

RAILROAD AND OTHER IRON

—AND—

Every Variety of Shafting,

Embracing ALL SIZES of

Steamboat Shafts, Cranks, Piston and Connecting Rods, Car and Locomotive Axles and Frames

—ALSO—

HAMMERED IRON

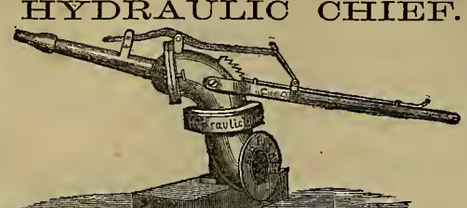
Of every description and size.

☞ Orders addressed to PACIFIC ROLLING MILL COMPANY Post Office, San Francisco, Cal., will receive prompt attention

☞ The highest price paid for Scrap Iron 9v143

HYDRAULIC CHIEF.

FISHER'S KNUCKLE JOINT AND NOZZLE IS THE Cheapest and Best Hydraulic Machine in use.



MAOHINES Manufactured TO ORDER, to throw from One to an eight-inch STREAM.

The only reliable party in the Hydraulic business who protects his patrons.

9v23-tf Address F. H. FISHER, Nevada, Cal.

HYDRAULIC MINERS, TAKE NOTICE—I hereby caution Miners and Manufacturers against making, buying, selling or using a Hydraulic Machine or Joint known as the Little Giant, manufactured and sold by R. R. & J. Craig and Richard Hoskin, as the same is an infringement upon the invention of the machine known as FISHER'S HYDRAULIC CHIEF, secured by Letters Patent, No. 110,222, dated Dec. 20, 1870. All parties participating in such infringements will be rigorously prosecuted. Nevada, Jan. 13th. F. H. FISHER.

CAMERON'S

MINING STEAM PUMPS.

DAVID STODDART,

114 Beale Street, - - - - - - - - - SAN FRANCISCO.

THE LIGHTNING MILL.

THE

LIGHTNING MILL,

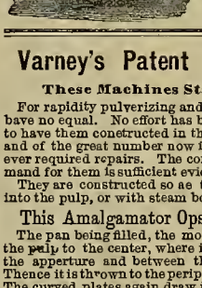
For Pulverizing Quartz, "Charleston Rock," and all Native Phosphates, Flint; Feldspar, Iron Ore, Manganese, Antimony, Carbon, Corundum, Old Crucibles, Barytes, Brimstone, Slate, Soapstone, Graphite, Glass, Marble, Plaster, Anthracite and Bituminous Coals, etc.

WM. STEWART'S

Patent Bone Mills and Crushers.

For Grinding Bones, Rock, Quartz, and all hard substances; also, Corn, Wheat, Oats, Barley, Coffee, Spices, etc.

WALKER BROS. & CO., Twenty-third and Wood Streets, Philadelphia, Sole Manufacturers of Stewart's Celebrated Patent Bone Mills and Crushers, A. W. Straub & Co.'s Patent Revolution French Burr Mill and A. Duval's Patent Centrifugal Pumps.



PORTABLE

DRILLING MACHINES,

THORNE & DE HAVEN,

Twenty-third and Cherry Streets, Philadelphia.

These machines can be placed with as much facility as a ratchet brace, and can be used in any position, at any distance, and in any direction from the power.

The No. 1 is capable of drilling up to 1¼ inches in diameter; the No. 2 up to 1¾ inches; and the No. 3 up to 2¼ inches, and boring up to 4 inches.

Send for Circulars and Photographs.

2v25-3m

Varney's Patent Amalgamator.

These Machines Stand Unrivaled.

For rapidity pulverizing and amalgamating ores, they have no equal. No effort has been, or will be spared, to have them constructed in the most perfect manner and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Oprates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the apperture and between the grinding surfaces.—Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Setlers made on the same principle excel all others They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill-men are invited to examine these pans and setlers for themselves, at the office, 229 Fremont Street, San Francisco.

THEODORE KALLENBERG,

MACHINIST,

and Maker of Models for Inventors. All kinds of Dies Stamps and Punches made. Also, all kinds of Small Gears Cut.

Repairing done on very Reasonable Terms and in the best manner. No. 32 Fremont street, S. F. 19v28-3m

---

☞ BUY BARBER'S BIT BRACE.

Notice is hereby given, that the copartnership heretofore existing between A. J. Severance, Charles W. Randall and J. Gus. Burt, under the firm name of "Severance, Holt & Co.," is this day dissolved by mutual consent. A. J. Severance, having purchased all the interest of his late partners, will continue the business of manufacturing and selling Diamond Drills, as before, under the style of A. J. Severance & Co.

Dated San Francisco, Nov. 24, 1871.

Office, 315 California street. A. J. SEVERANCE, CHAS. H. RANDALL, J. GUS. BURT.

22-v23-tf

THOMPSON BROTHERS,

EUREKA FOUNDRY,

129 and 131 Beale street, between Mission and Howard, San Francisco.

LIGHT AND HEAVY CASTINGS,

of every description, manufactured 24v16qr

SAN FRANCISCO

SCREW BOLT WORKS,

PHELPS BROTHERS, Proprietors,

MANUFACTURERS OF ALL KINDS OF

Machine Bolts, Bridge Bolts, and Ship or Band Bolts.

13 and 15 Drumm Street, San Francisco. 4v24ly

CALDWELL'S

Improved Stop Governor,

Manufactured at the CYCLOPS MACHINE WORKS, 113 and 115 Beale street, San Francisco.

3v24-3m WM. CALDWELL.

H. J. BOOTH & CO.,

UNION IRON WORKS,

(The Oldest and most Extensive Foundry on the Pacific Coast).

Cor. First and Mission Sts.,

SAN FRANCISCO.

Marine, Locomotive and Stationary Engines Quartz Crushing and Amalgamating Machines, Mill Irons and Brass and Iron Castings, of every description, made to order.

Steamboat Repairing, Boiler Making, Turning and Finishing,

EXECUTED WITH DISPATCH.

Beet Sugar Machinery complete in every part—made a specialty.

OIL MACHINERY.

A complete set of Machinery of our own design and patent for extracting oil from Castor Bean, dispensing with Hair Cloth. Also Machinery for Flax Seed Oil, Mustard Seed Oil, and Sun Flower Seed Oil.

MARBLE MACHINERY

For sawing Marble of any thickness or size.

Irrigating Pumps. Steam Pumps.

Plans, Estimates, and Advice promptly supplied.

H. J. BOOTH. GEO. W. PRESCOTT. IRVING M. SCOTT

4v24-1yelamr

THE RISDON

Iron and Locomotive Works.

INCORPORATED.....APRIL 30, 1868.
CAPITAL.....$1,000,000.

LOCATION OF WORKS:

Corner of Beale and Howard Streets,

SAN FRANCISCO.

Manufacturers of Steam Engines, Quartz and Flour Mill Machinery, Steam Boilers (Marine, Locomotive and Stationary), Marine Engines (High and Low Pressure). All kinds of light and heavy Castings at lowest prices. Cams and Tappets, with chilled faces, guaranteed 40 per cent. more durable than ordinary iron.

Directors:

Joseph Moore, O. J. Brenham, C. E. McLane,
Wm. Norris, Wm. H. Taylor, Lloyd Tevis,
James D. Walker.

WM. H. TAYLOR.....President.
JOSEPH MOORE..Vice-President and Superintendent.
LEWIS R. MEAD.....Secretary

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GEO. W. PRESCOTT. C. W. SCHEIDEL. W. R. EOKART.

PRESCOTT, SCHEIDELL & CO.,

MARYSVILLE FOUNDRY.

Corner of B and Fourth streets, Marysville, Cal.

MANUFACTURERS OF

STEAM ENGINES,

STATIONARY AND PORTABLE

SAW AND GRIST MILLS,

Hydraulic Machinery,

Quartz Crushing and Amalgamating Machinery

Of every description, constantly on hand.

Plans and estimates furnished upon application. Repairs upon all kinds of Machinery promptly made, and at moderate charges.

Having unrivalled facilities, we are prepared to make to order, at short notice, anything required in our line.

Specimens of our work may be seen in all the mining regions on this coast.

FOUNDERS AND MACHINISTS.

TYRRELL & CUMMINGS, PROPRIETORS

Union Iron Works,

No. 320 South C street, on the Divide, Virginia, Nev.

Manufacture Mill and Mining Machinery,

From the Smallest to the Largest Capacity, on the Shortest Notice, and Guaranty Satisfaction.

N. B.—Eastern Nevada and Utah Millmen, patronize near home and save money. 11v25-3m

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OCCIDENTAL FOUNDRY,

137 and 139 First st., near the Gas Works, San Francisco.

STEIGER & BOLAND,

IRON FOUNDERS.

IRON CASTINGS of all descriptions at short notice.

NOTICE.—Particular attention paid to the making Superior Shoes and Dies. 3v24-3m

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CALIFORNIA BRASS FOUNDRY,

No. 125 First street, opposite Minna,

SAN FRANCISCO.

ALL KINDS of Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch

☞ PRICES MODERATE. ☜

J. H. WEED. V. KINGWELL.

NOTICE.

THE PROPRIETORS OF THE

VULCAN IRON WORKS

HAVING RECENTLY REFITTED THEIR Shops [with 'New Tools of late and modern improvements, have facilities unequalled by any establishment in San Francisco, for turning out with dispatch all claeeee of machinery used on the Pacific Coast.

The variety and completeneee of our Patterns enable us to eupply the general wante of the Pacific Statee and Territories at the lowest poeeible ratee.

Office—135 and 137 Fremont St.,

BETWEEN HOWARD AND MISSION, S. F.

ARNOT, BIRCH & CO.,
Proprietors.

WM. H. BIRCH, Superintendent.
N. D. ARNOT, Manager.
12v25-tf

Miners' Foundry and Machine Works,

CO-OPERATIVE,

First Street, bet. Howard and Folsom, SAN FRANCISCO

Machinery and Castings of all kinds.

BURLEIGH

ROCK DRILLS

AND

AIR COMPRESSORS.

The Burleigh Rock Drills, which have stood the test of five yeare constant use at the Hoosac Tunnel, and which are now in use in nearly every State in the Union, as well as in Europe and South America, are unequalled in efficiency and economy by any other Drilling Machine. They are of various sizes, and equally well adapted to Tunnelling, Shafting, Open Cut or Quarrying, and will drill six to ten inches per minute in granite. They are driven by steam above ground, or compressed air when under ground. The Burleigh Air Compressor is the best engine yet devised for furnishing the "air motor" for the many purposes to which it is now being applied.

Send for illustrated pamphlet to

BURLEIGH ROCK DRILL CO.,
FITCHBURG, MASS.
25v24-6m

SHEET IRON PIPE.

THE

Risdon Iron and Locomotive Works

Corner Howard and Beale Streets,

Are prepared to make SHEET IRON AND ASPHALTUM PIPE, of any size and for any pressure, and contract to lay the same where wanted, guaranteeing a perfect working pipe with the least amount of material.

Standard sizes of railroad Car Wheels, with special patterns for Mining Cars. These small wheels are made of the best Car Wheel Iron, properly chilled, and can be fitted up with the improved axle and box—introduced by this company, and guaranteed to outlast any other wheels made in this State.

☞ All kinds of Machinery made and repaired.

24v22-3m JOSEPH MOORE, Superintendent.

QUICKSILVER

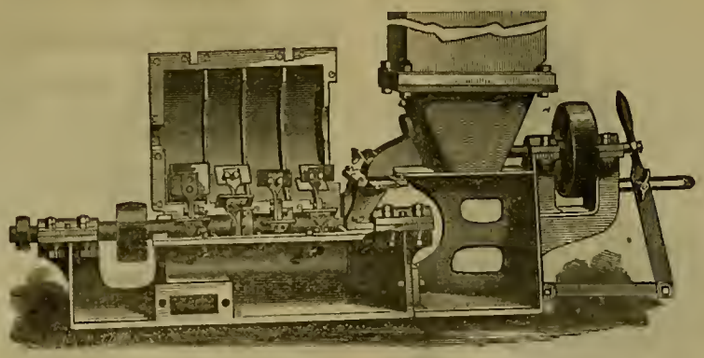
For Sale by

CHARLES LANGLEY & CO.,
Corner Battery and Clay Streets,
SAN FRANCISCO.
6v25-3m

$1,000 REWARD! For any case of Blind, Bleeding, Itching, or Ulcerated Piles that De Bing's Pile Remedy fails to cure. It is prepared expressly to cure the Piles and nothing else. Sold by all Druggists. Price $1.00.

C. F. RICHARDS & Co., Agents, corner Clay and Sansome streets, San Francisco, Cal.

WHELPLEY & STORER'S ORE PULVERIZER,



For Reducing Ores to Fine Powder.

OFFICE OF SWANSEA MELTING AND REFINING COMPANY OF CHICAGO.
CHICAGO, July 15, 1872.

L. P. DODOE, Esq., Agent for Messrs. WHELPLEY & STORER—Dear Sir: Yonr commnnication of the 10th instant is at hand. In reply would say that we have been running a Whelpley & Storer Pulverizer for the last six months, grinding ores of different kinds, some of them exceedingly hard. The operation of the Pulverizer has been, in every respect, a complete success, grinding very fine, with but little power required to drive it, and but slight expense for wearing parts. We cordially recommend them to all parties requiring a Pulverizer for nilningor other operations. Respectfully' J. W. JONES, Superintendent, etc.

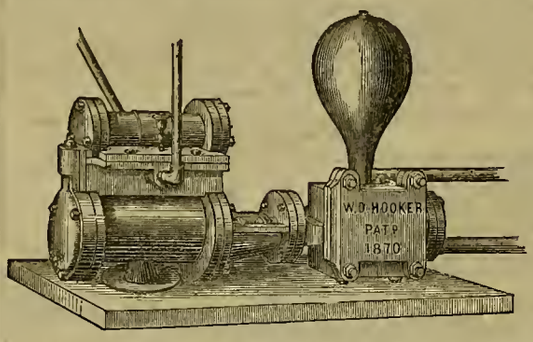
May be seen in practical operation on Mein etreet, between Howard end Folsom, San Francisco.

This Machinery has heen adopted by nearly all the Eastern reduction works for reducing ores.

Partiee purchasing machinery will find it for their interest to examine this before purchasing elsewhere.

9v25-3m GEO. D. WYMAN, Agent Pacific Coast.

Hooker's Patent Direct Acting Steam Pump.



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N. B.—Also manufacturer of Hooker's Deep Well and Double-Acting Force Pump. Received the Silver Medal awarded at the last Mechanics' Fair in San Francisco. 23v24-1am6m-bp

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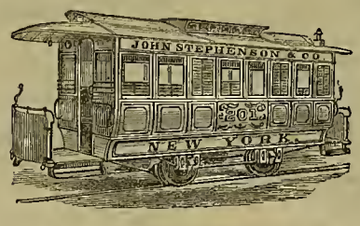

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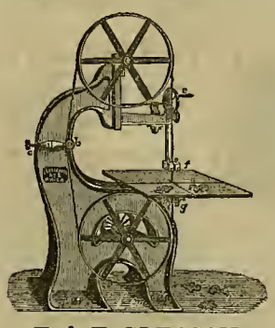

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MINING AND SCIENTIFIC PRESS.—Volume 24 of this excellent mining journal was completed the 29th inst. Hereafter the title of the paper will be MINING AND SCIENTIFIC PRESS.—*White Pine News, Aug. 6th.*

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The Oldest Tunnel Location in Utah Territory.

LOCATED.....JULY 16, 1870

INCORPORATED.....AUGUST 2, 1872

Trustees:

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CHARLES F. MacDERMOTT,
WILLIAM BURLING,
SMYTH CLARK.

Capital Stock, - - $500,000

IN SHARES OF $10 EACH.

THIS PROPERTY OF THE COMPANY CONSISTS of a Mining Tunnel claim 3,000 feet in length by 2,000 feet in width, lying in the celebrated "EMMA HILL," in Salt Lake County, Utah Territory, which hill or mountain divides Big Cottonwood from Little Cottonwood Canon.

In this hill, on either side of the Company's claim, lie the "Emma," "Flagstaff," "Savage," "Davenport," and a hundred other mines whose wonderful production of silver and galena ores is attracting the attention of the mining world.

A tunnel 6x6½ feet is now being excavated by the Company, commencing at a point on Silver Fork (a tributary of Big Cottonwood), and will be extended entirely through Emma Hill, coming out at a point on Little Cottonwood Creek midway between the "Emma" and "Davenport" mines, and distant half a mile northeast from Alta City.

The course of the tunnel is nearly due north and south; will pass under the summit of the mountain at a depth of 1,200 feet, and must necessarily cut at a great depth every mineral lode embraced within the claim.

To aid in carrying on the work, **Ten Thousand Shares** of the Company's stock are offered for sale at $2.50 each.

The money derived from the sale of said shares will be deposited in the Bank of California, and only drawn therefrom to defray the expenses of the company as the work progresses.

It is confidently believed that no assessment will ever be made on this stock.

The amount that sought to be obtained will be sufficient to run the tunnel one thousand feet, within which distance lie many ledges, any one of which should not only insure the payment of dividends, but also furnish the means wherewith to carry on the tunnel to its completion.

The well known commercial firm of Walker Brothers, of Salt Lake City, were the original locators of this claim, and are at present the largest holders of its stock.

A map of the Company's property can be seen and further information obtained on application being made to the subscriber at the Company's office (Jos. L. King, Secretary), No. 411 California street.

oc5-1t SMYTH CLARK.

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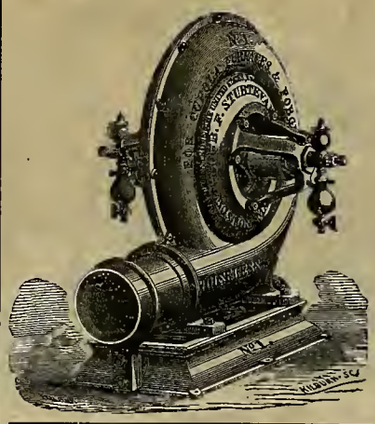

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As its title indicates, this work gives a wide range of information, applicable to all vein miners and workers in precious metals, affording hints and assistance of exceeding value to both the moderately informed and the most expert operator.

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The above work, by GUIDO KUSTEL, is sold by DEWEY & Co., Publishers, Patent Agents and Engravers, at No. 338 Montgomery street, San Francisco.

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Sinks, Monuments, Fountains,
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C. P. R. R.

COMMENCING

Monday, September 16th, 1872.

And until further notice, Trains and Boats will

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7.00 A.M. Atlantic Express Train (via Oakland) for Sacramento, Marysville, Redding and Portland, O. Colfax, Reno, Ogden and Omaha.

7.15 A.M. Oal. P.R.R. Steamer (from Broadway Wharf) —Connecting at Vallejo with Trains for Calistoga, Knight's Landing and Sacramento.

8.00 A.M. Excursion Boat (Sundays only) from Broadway Wharf, connecting with Special Train of S. F. & N. P. R. R. for Cloverdale and intermediate points, returning to San Francisco by 7 P. M.

2.00 P. M.* Stockton Steamer (from Broadway Wharf), touching at Vallejo, Benicia, and Landings on the San Joaquin river.

2.00 P. M.* Steamer Antelope, from Broadway Wharf, connecting at Donahue with Trains for Cloverdale.

3.00 P. M. San Jose Passenger Train, stopping at all way Stations.

4.00 P. M.* Passenger Train for Lathrop, Merced, Visalia, Tipton and Los Angeles, Stockton and Sacramento.

4.00 P. M.* Cal. P. R. R. Steamer (from Broadway Wharf) connecting at Vallejo with Trains for Calistoga, Knight's Landing and Sacramento.

4.00 P. M.* Sacramento Steamer (from Broadway Wharf). Touching at Benicia, and Landings on the Sacramento river.

6.30 P. M. Overland Emigrant Train, Through Freight and Accommodation.

OAKLAND BRANCH.—LEAVE SAN FRANCISCO, 7 00 8 10, 9 20, 10 10 and 11 20 a. m., 12 10, 1 50, 3 00, 4 00, 5 15, 6 30, 8 15 9.20 and *11 30 p. m. (9 20, 11 20 and 3 00 to Oakland only).

LEAVE BROOKLYN (for San Francisco), *5 30, 6 40, 7 50, 9 00 and 11 00 a. m., 1 30, 2 40, 4 55, 6 10, 7.55 and 10 10 p. m.

LEAVE OAKLAND, *5 40, 6 50, 8 00, 9 10, 10 00, and 11 10 a. m., 12 00, 1 40, 2 50, 3 50, 5 05, 6 20, 8.05 and 10 20 p. m.

ALAMEDA BRANCH.—LEAVE SAN FRANCISCO, 7 20, 9 00, and 11 15 a. m., 1 30, 4 00, 5 30, and 7 00 p. m. (7 20, 11 15, and 5 30 to Fruit Vale only).

LEAVE HAYWARDS (for San Francisco), *3 45, 7 00 and 10 45 a. m., and 3 30 p. m.

LEAVE FRUIT VALE, *4 40, 7 35, 9 00 and 11 20 a. m., 1 30, 4 05 and 5 30 p. m. *Except Sundays.

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2 to 10 Horse Power.

Made by the N. Y. Safety Steam Power Co. Has tubular boiler, and therefore is secure against the dangers common to shell boilers without tubes. Power is taken from near the base, which avoids vibration or top-heaviness. Occupies but two feet square of floor space, and is so simple a boy can run it. All its parts are easily accessible—a great advantage. Is complete in itself as a Portable Engine and Boiler, or the engine can be detached from the boiler and run independently, if required. Its main points are **simplicity, safety and economy.** For printing offices, laundries, tanneries, ranches, small repair or machine shops, or for hoisting wherever a small and safe power is required, they are peculiarly adapted. Over 500 are already in use. ☞ Send for circular and price list to **TREADWELL & CO.,** Sole Agents, San Francisco. 11v25eow-tf

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MINING AND SCIENTIFIC PRESS.

An Illustrated Journal of Mining, Popular Science and Progressive Industry.

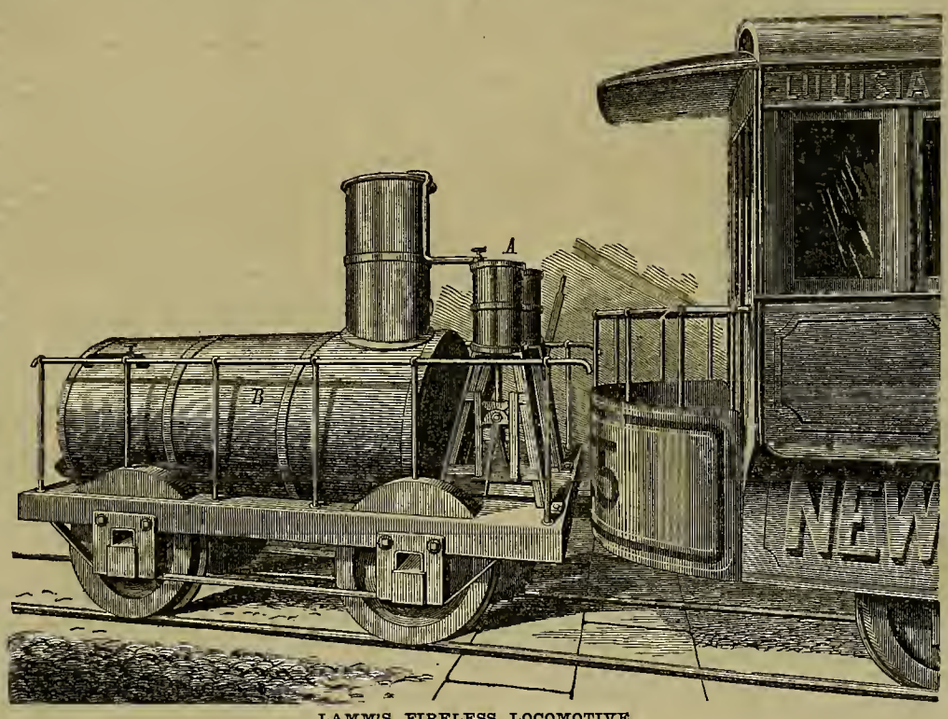
BY DEWEY & CO., Patent Solicitors. SAN FRANCISCO, SATURDAY, OCTOBER 12, 1872. VOLUME XXV. Number 15.

Steam on Street Railroads.

The application of steam power on street railroads has been theoretically considered ever since street railroads were in existence, but until quite recently no practical demonstration of its efficiency has been made. The trouble has been that the use of steam, when generated in a boiler set over an active fire, is accompanied with more or less danger, making it impracticable in a crowded street; and moreover, the engine would require skilled attendants which would make its use so expensive that it would not be a satisfactory substitute for animal power; of course the cheapness of steam power is a great desideratum and if the danger attending it could be avoided a skilled attendant would be unnecessary. And if to these considerations is added that of being able to work fifty or one hundred street locomotives with but one single fire under a large stationary boiler in some out-of-the-way portion of the city, the economy of steam power on street railroads is established.

This has been attained with successful results by Dr. Emile Lamm, of New Orleans, and the machine which accomplishes it is illustrated in the accompanying cut. The invention is called the "thermo-specific" or fireless locomotive. The driving engine, at *A*, is a steam engine of ordinary character requiring no explanation; *B*, is a reservoir large enough to hold about 300 gallons of water and leave steam room above it. It is covered with non-conducting material to prevent the radiation of heat and is made of steel. Inside, from end to end, near its bottom, is a pipe which is perforated with small holes in its periphery, and which is connected with a universal coupling fastened to the front of the reservoir. It is provided with a water cock, steam drum, etc., and proper steam connections with the engine. The apparatus operates as follows: The tank on the trunk or car, is filled with about 300 gallons of water; this same water is heated at the depot at the beginning of each trip by being connected for four minutes to a stationary steam boiler. In this manner enough heat is forced into the water of the tank to enable the car to travel nine miles and have a surplus of power left at the end of each trip. There being no fire under the tank the power begins to diminish as the car moves, and of course an explosion is impossible, because what has once contained the more will contain the less. The pressure in the tank can of course never rise above the point reached at the time at which it is filled, there being no increment of heat.

It requires less skill to drive the thermo-specific engine on the truck or car than it does a horse or mule, for all the driver has to do to stop the car is simply to turn a faucet to the right or left and to apply his break; and to start it again he opens the fancet and lets go. As far as the working is concerned, in obedience to well-known laws, as the pressure in the interior is relieved by the passage of steam into the engine, a portion of the water in the former is converted into steam by the heat with which it is surcharged. This conversion would go on until the temperature in the remaining water fell to 212°. At the place where a railroad on this principle is now running, New Orleans, it is calculated that with the reservoirs now in use, about 50 gallons of water are converted into steam before this point is reached. The loss of heat is said to only equal a loss of pressure of three pounds to the square inch per hour, and as from 60 to 80 pounds more pressure is carried in the tank than is necessary to make the round trip, there is no fear that any detention on the road will render the fireless steam engine powerless. One of these engines drew over four tons and being stopped on a curve of 58-feet radius it was started again with ease, proving that it can make short curves as well as cars drawn by animal power.



LAMM'S FIRELESS LOCOMOTIVE.

The inventor explains the principle of his process as follows: Water boils at 212 Fah., under the pressure of 14.07 lbs. to the square inch, which is the pressure of the atmosphere at the level of the sea. This boiling point of water is not fixed, but increases or diminishes with the pressure upon its surface, so that if we increase, to any given weight, the pressure upon the surface of water, we will also elevate to a corresponding degree its boiling point, and as it is well known that if we drive steam into a body of water it will condense into it until the water boils, therefore steam can be condensed into water at any temperature, provided the water be kept under pressure in a strong iron vessel. Any given quantity of water requires 990° Fah. above 212 Fah. for its total conversion into steam.

Now, if we put 168° of heat above the boiling point into 300 gallons of water enclosed in an iron vessel, the 168° will be seventeen per cent. of the total heat required to convert the 300 gallons into steam at the expense of the whole caloric put into the water. In other words, by opening a valve on top of the iron vessel the surplus heat in it will convert fifty-one gallons of the water into steam, the remaining water falling in temperature during the escape of steam until it has again reached 212 Fah., when it will be in equilibrium of pressure with the surrounding atmosphere, and no more steam escape from it. If, instead of permitting the steam to escape directly into the atmosphere, it be directed into a steam engine, it will drive it as long as its tension surpasses that of the atmosphere.

The cars of the New Orleans & Carrollton Railroad Company are drawn by the fireless locomotive, and the President of the road, Gen. G. T. Beauregard, has made a comparison of the relative expenses of the two systems, and finds a difference of 33⅓ per cent. in favor of the new one. Parties desiring further information on this subject can address the inventor in New Orleans, or the Thermo Specific Propelling Company of America, at the same place.

Malleable Iron Works.—We understand that a movement is on foot for the establishment of malleable iron works at Vallejo. This project is one which will no doubt be of great advantage to the manufacturing interests of the Coast, making it practical to manufacture at least $100,000 worth or upwards of articles on this coast annually which we are now obliged to go East for. There are many small things invented here which require but a small portion only to be made of malleable iron, but for the want of which the whole has to be made elsewhere. For such reasons the amount of manufacturing driven from our home mechanics amounts to a large sum.

Contract.—A contract has been let for the construction of ten miles of railroad, by the San Diego and San Bernardino Railroad Company, on the route northward from San Diego.

Steam Plowing.

We have received the pamphlet of John Fowler & Co., of the steam plow works of Leeds, England. It contains abundant evidence of the complete success of steam plowing in England, and in other places where it has been introduced. That land can be plowed by steam to a depth that would be quite impracticable with animal power and the common plow, admits of no dispute.

We have also in hand a letter from Mr. Lawrence, of Magnolia Plantation, Louisiana, who relates his success with Fowler's steam plow in that State, in the culture of sugar cane. Also a letter in the N. Y. *Tribune* of July 3d, 1872, on the same subject and from the same source.

All these go to prove that plowing by steam is practiced in Europe and in Louisiana, and there ought to be no reason why it may not be as successfully introduced in California. We learn that Mr. Campbell, of Washington, Yolo county, has made a new improvement in the mechanism and working of the Fowler plow, by which its efficiency is claimed to be increased. Mr. Gwinn has promised to have a small set of this plowing apparatus, with steel boiler, etc., made in England especially for this country.

We certainly hope that complete success may attend the improvement, and that Mr. Campbell may realize to the fullest extent his anticipations; for a wider field or a more desirable one could hardly anywhere be presented than in the reclaimed, but soft tule lands of the delta islands of the Sacramento and San Joaquin Rivers.

Japan. — Recent advices from Japan indicate a retrograde movement in the progress of that country, which has been going on rapidly since the numerous innovations on old customs have been introduced by the Americans. One party has been an unwilling spectator to the advance of the people in civilization, and, being a powerful one, has exerted its influence to retard improvement as much as possible. It is hardly probable, however, that this state of affairs will long continue, as the more intelligent people have seen the advantages of higher civilization, and will be unwilling to relapse to their former condition.

Subterranean Gas.—At Salinas City, this week, while boring an artesian well, the workmen struck a gas jet at a depth of 70 feet, which increasing in violence carried out earth and stones loosened by the machinery. The gas has been tested and burns with a clear brilliant flame. The gravel which is thrown up through the pipe has the appearance of decomposed gravel, and the water has a slight taste of sulphur. Salinas City may yet be lighted with natural gas.

New Bedding Material.—It has been found that the bark of the Port Orford or Fragrant Cedar, if suitably dressed, makes an excellent article for bedding fibre. It is thought that it will form a good substitute for soap-root, and, as the supply is unlimited, will be much cheaper.

CORRESPONDENCE.

Notes of Travel in the State of Nevada.

[By our Traveling Correspondent.]

The mines on ths famous Comstock lods hsing ths most important in Nsvada, a trip to tbis section is a very interesting ons, not only to mining men, but to the cssusl observsr, to wbom shafts, levsls, dips, spurs, stc., are known only by nams. Ths proper way to get thers is by ths C. P. R. R., from Ssn Francisco, ss far sast as Rsno, 292 milss; thsn hy Virginia & Truckes R. R. to Virginia, *via* Stsamhoat Springs, Carson, etc., total distance 344 miles. Expenses about $25. Befors giving your readers any description of the mines of Virginia, it may bs as wsll to ssy something of the prominent Nevada towns, passed by on the way thsre. Ths first of thess is

Reno,

The point at which ws verge from ths lins of ths C. P. R. R. It is the county seat of Wsshoe county, and contains abont 800 inhabitants. This conuty (Washos) contains an area of 185 squars milss, and has a popnlstion of 3,000. Ths county of Roop, which adjoins it on the nortb, has an arsa of 350 sqnars milss, is sparssly sstlsd, and over it Washoe county now holds jurisdiction. Taxable propsrty of Washoe county is $2,700,000. The lumbering and mannfacturing intsrests of Reno, are its principal snpport. Thoss interested in this line prominently, ars the Nevada Lumber and Mining Co., Ross & Co., and S. F. Hoole. The latter msntioned, is the proprietor of the Reno Planing Mills, and employs from 25 to 30 men. Hs turns out sashes, blinds, doors and mouldings, and everything in that line. The principal hotsl at this point is well kept by W. R. Chamberlain.

The Virginia & Truckee Railroad

Runs from Reno *via* Steamboat Springs and Carson to Virginia City. The total length is 51¼ miles. Tbe officers of the incorporation are: W. Sharon, President; A. J. Ralston, Vice-President; Bank of California, Treasurer; H. H. Ashley, Secretary; Isaac E. James, Chisf Engineer; H. M. Ysrington, Superintendent. The road is finished and trains began running on ths 1st of Octoher. To any one who has traveled over this road in the old days of staging, it will bs a matter of surprise to see the ingenious manner in which the difficulties havs bsen surmounted with so few tunnels. It will doubtless be interesting to your readers to havs some points connected with ths construction of this road, which I will give briefly.

Washoe Division. Reno to Carson, totsl length of line, 30.75 miles; total length of curved line, 9.03 miles; minimum radius of curve, 410.28 feet; maximum grads, 116 feet per mile; length of maximum grade, 6,500 feet; sum of ascents and descsnts, 1,498 feet; higbest above the lowest point, 711 feet; number of tunnels, 1; lengtb, 400 feet; total length of Truckee River bridge, 480 feet, consisting of one span, Howe Truss, 150, and 11 spans, 30 feet each. Cost of bridge, $25,000. Washoe division was commenced in July, 1871, and completsd Oct. 1st, 1872.

Carson Division. Carson to Virginia City, total length of line, 21 miles; minimum radius of curve, 303 feet; maximum grade, 121 feet psr mils; length of maximum grads, 2 miles; length of grade, 116 fset per mile, 12 miles; sum of ascents and descents, 1,989 feet; highest to lowsst point, 1,684 feet; number tunnels, 5; aggregate length, 2,000 feet; number degrees of curvatnre, 6,220. This division was commenced March 19th, 1869, and finished, Novembsr 28th, 1869. Total cost of road, $3,000,000.

The road will rnn in close connection witb the Central Pacific Railroad, having slespingcars to Carson only, sincs the tunnels nsar Virginia will not admit tbe sleepers. It is to bs hoped that ths Central Pacific managers will soon change their time of leaving San Francisco, so as to bring trains to Reno in the morning. This has been talked of a great deal, and such an arrangement would iucrease tbe travsl, as the trip is now dreaded by most psople, especially those having families. It would be a vsry great convenience to tbe psople of this ssction, and as ths population amounts to 15,000 or 20,000, ths Central Pacific will do well to consult ths wishss of so populous a community. Rates of freight on general msrcbandise between Reno and Virginia will bs $8 psr ton; fare for passengers, $3.

Steamboat Springs

Is a prominsnt place of resort in this State, sspecially for invalids or tourists. The Springs are about twelvs miles from Reno on the line of ths railroad, aud abont the sams distance from Virginia City by the old stage road. The hotsl at the Springs is owned by C. W. Cullins. The place is quits a natural curiosity, but has bsen so often described that the peculiarities of the Springs are well known. A large number of persons ars stopping there at this writing.

Carson City

Lies 30¾ miles nearly south of the town of Reno, on ths above-named railroad. Carson is the capital of the State of Nevada, and contains somsthing over 1,000 inhshitsnts. Ths U. S. Branch Mint of Nsvsda is located here, and both that and ths Cspitsl wers huilt from rock quarried at or nsar ths prison, which is located sast of ths town. Their principal rsources are derived from ths farms to ths south and ths mills to ths north of ths city. Passing from Carson to Virginia hy ths rsilroad, ths next point of intersst that attracts our attention is

Empire Cily and its Mills.

Empire City is locatsd on Carson Rivsr, about three miles east of Carson City, and contains about 400 inhabitants. At this point is located ths

Mexican Mill,

Ths personal propsrty of Msssrs. Hayward & Jones, and is superintended by D. B. Lyman, Esq. This mill has 44 stamps, run hy water-power; a 56-in. turhins whsel does the work. This mill works hy wst-crushing process, and has a daily capacity (24 hours) of reducing 120 tons of ors. At present, engsged in working ors from the Crown Poiut mine, which is dslivered at ths mill by rail, over V. and T. R. R., at a cost of $2 per ton. At pressnt, 32 men ars regularly employed at this mill.

One mile further down ths Carson Rivsr, running east, is locatsd ths Yellow Jacket mill, bnt bstter known as ths

Morgan Mill,

Which is the property of the same parties. This mill is superintended by John Hsnssn, has 40 stsmps, but at present is running hut 30 stsmps; run by steam-power with a 175-horss powsr sngins. This mill hss a reducing-cspscity of 80 tons daily (24 hours) from 30 stamps. Ths ors for this mill is also delivered hy rail. At present, crushing ore from Crown Point mine; 30 men find employment at this mill. Ahout one-fourth of a mile further down ths Carson River is located the largest and most complete mill ou ths Carson, if not in this section of the Stats, known as the

Brunswick Mill.

This property also helongs to Msssrs. Hayward and Jones, and is superintsnded by Mr. R. Elstner, Esq. This mill is run by water power, the water for which ie taken up from tlis Carson river and conducted to two forty-eight-inch Leffel turhins whesls. Tbe main belt is forty-two inches in width, the largest nsed in this country; the macbinery in every compartmsnt in and ahout this extsnsive mill works as smoothly as the works of a watch. There are fifty-six stamps, twenty-six pans for amalgamating and four clean up pans. This mill has a capacity to reduce 160 tons of ore every twenty-four hours. Working on Crown Poiut ors. Thirty-eight men find employment at tbis establishment. The ore is brought to this mill by the V. & T. R. R. Ths distance from this mill to the Crown Point mine, by rail, is sixteen miles.

Rhode Island Mill,

The property of the Crown Point G. & S. M. Co., is located in lower Gold Hill. It contains twenty-fivs stsmps, eight pans for amalgamating, and four settlers. It is driven by a steam engine of eighty-horse power. The ors, after being dumped oncs, is delivered at this mill from tbe Crown Point mine by band-car. The mill has a capacity of reducing fifty tons of ore every twenty-four hours. These works are lit throughout hy pneumatic gas, using twenty-two burners. The mill has no kid glove machinery about it, hnt does its work as neatly as any of the larger ones in the district. J. W. L. Hunt is the Supt.; twenty-one msn are regularly smployed.

Eureka Mill,

The property of the Union M. & M. Co., is located on ths Carson Rivsr, three miles nearly south of Dayton, Lyon County, Nsvada. This mill contains 60 stamps, weighing 968 ponuds each, which, when in motion, drop 75 times per minute. There are 26 largs flat-bottomed pans and 13 sttlers. The machinery of this establishment is driven by watsr powsr, and strange to say one little 52-inch Leffel Turbine whsel does all of the driving; 36-feet fall is ths pressure used. This whesl is differently connected, from probably any othsr in the couutry, a novelty in this section at least. The shaft hes horizontal instsad of vertical (ths old way). It counects ths pans and battsries by two bslts in opposite dirsctions from the whesl, each one driving oue half of the pans and hatteries, as it seldom occurs that both would get ont of ordsr at once. A convenience is obtaiued for repairs by this means nnequalled by any other. With ordinary milling ore, this mill has capacity to rednce 180 tons every 24 hours, and employing 45 men in all capacities. The mill is at present crushing Belcher ore, wbich is transported from the nine at Gold Hill, over the V. & T. R. R., to a point 1¾ miles distant from the mill. From that point the Mill Co. havs built a narrow gauge railroad to their mill; an incline track is built from the top of the mill to the railroad landing, distant 300 feet, with 30 feet grade. The cars are slsvated to ths top of this inclins by wirs rops. The same power running the mill (before described,) runs this incline and delivers the ore at a point near the top of the mill. There it is dumped and and passes throngh screens arranged on an incline, sending the coarse rock to the rock breaker and the balance to ths sslf-feeding batteriss below. V. M. Edgington is Superintendent. S. Fountain was ths architect and builder.

The Santiago Mill

Is just below Empire City, or about five miles from Virginia. It belongs to ths same proprietors as the ahove; has thirty-four stsmps, eighteen psns snd is run by a fifty-six incb Lsffel turbins whesl. A pscnliarity in this mill is that they havs ingeniously turned to account an invention of the olden time in ths shaps of Archimeds's scrsw. Ths mill is so near ths lsvsl of tbe river and discharges its tailings so low down that it was found impossible to ssve tbsm till this system wss introduced. It is simply an Archimeds's screw inclosed in a casing of wood, hooped on ths sams ss a bsrrel. Ths lowsr end is placsd at the point where the tsilings ars discharged from ths mill, snd at the upper psrt is placed a sluics which condncts them into a rssservoir whers thsy are settled snd saved. An agitstor at ths lowsr end of the screw stirs up ths fine particles so as to kssp them in a fit stats to bs raised convenisntly. The mill now crushes eighty tons per day, or ahont 2,500 tons psr month, aud as ths tailings are worth about $5 per ton, this contrivancs savss about $12,500 per montb to ths mill owners. Ths tailings ars rsissd forty feet. At pressnt ths mill is crnshing ore from the Bslcber. D. C. McKay is Supt.

The Douglas Mill,

Is situated in lower Gold Hill and owned by C. C. Stevenson, ths inventer of Stevsnson's psn. Tbe mill has 10 stsmps of 650 pounds ssch, drops 95 times per minuts and crushes 28 tons per day; has one of Brodis's rock hresksrs and four of Stsvenson's patent psns. Tbey sis run 95 revolutions psr minute, and ths motion looks as if it could not bs improved in ths psns, bringing tbs mercury from ths hottom to tbs top, and continually psssing it undsr ths grinding mullers. For good work and sconomy he says he defies competition. Has two settlers and an agitator in mill, and the whole is run over a long string of blankets that ars washed fonr times every 24 hours. The mill is run by an engine from ths Golden State Iron Works, San Francisco, being 12-inch cylindsr hy 2-foot stroke and makes 95 rsvolutions. Steam is furnished hy two boilers 42 inches diamster and 16 fset long; is fnrnished with one of Stillwsll & Bierce's patent heaters and lime extractors, that he considers a great thing for removing the lime and sediment from the water and is a great saving to the boilers.

We noticed a new kind of governor on the sngine, so arranged that if tbe belt breaks or runs off, it immediately shnts off steam from the engine. Tbey are manufactured by Leittisr & Co., Grand Rapids, Michigan. We noticsd one of ths Knowle's stsam pnmps and lots of hose for fire purposes, and so arranged that hose could hs attached in a nnmber of places, to command the wood piled up, and also the out buildings. The mill is working ore from Gold Hill proper, what is called ths old works. Hs informed me that hs had paid nearly $30,000 for ore in ths mines in the past three years, buying all above a certain levsl and mining it himself. By looking after evsrytbing personally he makes ors pay a profit that formerly run the company in debt, and he informed me that he had 3,000 tons of ore piled up at tbe mill. Ws saw a hnge pile of ors and a largs amount of wood piled up for winter nss. This ore contained a large amonnt of slimes, that formerly wsre allowed to run off down the cañon, and he found tbey amounted to abont $300 per montb for his mill. For tbs past three years he has saved them all, and sells them at the mill for from $4 to $5 psr ton. Has a hoarding houss at tbe mill and boards tbe most of bis men; keeps cows, horses, pigs and chickens.

Mr. Stevenson was one of the pionsers of Nevada; crossed the Plains in '59, and while tbe most of his party went on to California he and two others packed their blankets from Dayton, up Gold Cañon to Gold Hill and Virginia City (called at tbat tims Ophir). He afterwards bought mining gronnd in Gold Hill and commenced mining, first with a rocker, then an arastra, and was interested in the first qnartz mill huilt in Storey county. He informed me that he bad worked many adsy in ths mines, and for ths past thirteen years he had been actively engaged in mining and milling, and he found he learned something every day. Liks most of the early miners, fortuns had both smiled and frowned on him, but be was always hopefnl. He employed from 75 to 100 men at the mine and mill, and that hs always looked ovsr everything on the first day of each month, paying off his men; and said he had many msn in his employ that had been with him most of the time from six to seven years. Economy seemed to be ths rule and not the exception.

L. P. MC.

The Wyoming Mine.

Ens. PRESS:—This mine is located about one mile from the town of Nevada, in Nevada Co., California, on Deer Creek; ths ledge contains 2,380 feet and is from three to four fset in thickness, in slats formation. The mine has paid continually for ths last four ysars and the ore has been taken out without the nse of hoistiug works, only an old ship's wench being used for hoisting purposes. Although the process has been ratlsr slow the owners have managed to gst a fair return.

Lately the character of the ore has bsen getting exceedingly rich; a blast made a few days since displayed very rich specimens and high grade snlphurets; the ore continnes to grow richer as the niine is bsing devsloped; the ore now pays from $27 to $30 per ton. At a custom mill a crushing of 185 tons made in July yisldsd $4,625, without ths sulphursts, which is worth $120 psr ton. It is ths intention of the company to erect hoisting works and a mill of their own.

Ths mine is opsned by a tunnel 400 fest long and an inclins of 150 fset. Thres lsvels ars now open with sufficent ore in sight to keep a mill running two years. Ahout 200 tons of rich ore srs now on ths dump; ths mill will bs one of ths hsst with all ths modern improvements. It sssms as thongh ths mines of Nsvada County are about to taks the front rank again for gold quartz mining on account of the many ricb strikes being mads there, for instancs thst in the Wyoming, Eris, Pittshurg and the Empirs of Grass Valley.

JAS. H. BLAIKIE.

The Judd and Crosby Works.

Tbess nsw works for ths trsatmsnt of ors hy roasting, chloridizing and amslgamsting, are rapidly approsching complstion and will bs rssdy to redncs ores soon. In thsss ths Crosby pstsnt furnace, hss bsen constructed under ths immsdiate supervision of ths patsntes, Mr. Crosby, who is one of the propristors of the works. In this the ores will be roasted and desulpherizsd and thsn amalgamsted in tlis Wheeler combination psns, which havs proven in svery way successful, and ars used extensively in California, Utah and Nsvads. Four of tbsss psns are in position, and helow them ars two largs settlers suitably geared and convsnisntly arranged in every particular.

Ths pans, sttlers, and their appurtensncss, except the turbine watsr wheel, were manufactured in California, and ars fins specimens of mechanical workmansbip and very complete in every way.

This tnrbine whesl from an Ohio machine shop is sufficiently large to furnish powsr equal to a forty-horse steam engine, and the stream, west fork of eouth Clear Creek, which supplies the water, is large enough to furnisb abundance for all pnrposss at all seasons.

The ball pulverizer is in position and is from the Hendrie Bro'e foundry and machine shop, Central, one of the Bolthoff patent, the best in use in Colorado.

A Dodge crusher is also in ths mill, rsady for opsration.

The mill huildings are spacious, vsry substantial and conveniently located at the base of Leavenworth monutain, near the soutbwestern limits of the city on tbe west fork of Clsar Crsek.

The site of tbe works are so chosen that the buildings are erected against ths mountaiu side on terraces and so constructed that ores are received in the uppsr department of the mill. From this through all ths processes of redncing, they are falling down towards the lower story where they are amalgamated. The expenses of mucb handling are saved by this arrangement.

Ws are not advised of the sxact capacity of the works but hslieve this to be about fifteen tons every twenty-four hours, and csn offer no opinion upon the value of the furnaces, or the prospects of tbe process generally, but do most earnestly hope thsy will prove a complete success.

Messrs. Judd and Crosby must havs every confidence in their system or tbey would not have spsnt monsy so libsrally in the construction of these fine works.—*Georgetown Miner.*

The Lemon Mill.

The Superintendent and part owner of the Lemon mill, Mr. S. B. Morey, kindly showed ns through tbe works yesterday. Tbe mill consists of 15 1,000-pound stamps, and a little two-stamp battery for sampling ores, six Stevensou pans, three sttlsrs, and two White furnaces, all driven by a fine 14-inch cylinder engine. The mill has recently bsen entirely rebuilt, and to day is as good as new. An addition of 26 fest has been put on the mill, two new pans, one settler, and one furnace have been added. ths battery was taksn down and rebuilt, and even ths engine has had ths cylinder rehored, and yssterday all was runing smoothly as clockwork and steady as the stars. The mill is of the first-class and the furnaces are a great improvement upon anytbing of ths kind in the State. Hsretofore the cylinders of all White furnaces have been revolved by a chain. By an ingenious contrivance of Mr. Morsy, this is accomplished by gearing, and at the tonch of a lever eithsr or both furnaces can bs started or stopped at pleasure in a moment. A great many improvements about the furnaces need to be sesn to be appreciated, especially if any one else contsmplates building a White furnace it would be wsll worth his while to examins the arrangsments at the Lemon. The way in which the pulp is taken from both befors and bshind the mortars, and conveyed to the hopper over the furnaces, ths frams work of the revolving portions of the furnaces, the arrangemsnts for firing the furnaces in front, and tbe othsr arrangement for a fire in the rear, to attack any pulp that the draft may taks from the first firs, before it is thoroughly rohsted, and lastly, the settling chambers, ons 5 by 8 feet, and one 14 by 26 fest, laid up in brick, and the flues from the last of which pass undsr the drying floor, tbus utilizing their remaining heat. The mill is now ready to rednce twenty-five tons of ore per day, and we do not see why just as good work can not be done in the Lsmon as any mill in the country.—*Eureka Sentinel.*

SCIENTIFIC PROGRESS.

The Range of Sound in Moving Water.

In the *Comptes Rendus*, July 22, we have a report of some interesting acoustic experiments made during the early part of the investment of Paris, with the view of the possible establishment of a system of telegraphic communication between the city and country through the medium of the waters of the Seine. The experiments were of three kinds: In the first series a 104-lb. bell, properly submerged, was employed, furnished with an internal clapper, to which was attached a couple of iron wires, by which it could be moved at will. It was placed in a suitable position, one foot from the bottom of the river. Two men were told off to strike it, with the aid of the wire pulleys, at certain predetermined intervals indicated by a watch previously regulated by the observer, who was in a boat, which was allowed to follow the course of the stream, the rudder only being used to keep her in the current. He was provided with an ear-trumpet, which was attached to the side of the boat, and its submerged mouth, covered with membrane, kept constantly turned in the direction of the bell. At a few yards distance from the bell each stroke was distinctly audible, producing a dull sound like a blow upon a drum-head. As the distance increased the sound became weaker; and beyond 1,900 yards it was no longer distinguishable.

In the second series of experiments a large bronze bell, weighing over 8 cwt. was used, and struck by means of a 40-lb. hammer, and moved by pulleys.

Four seamen were told off to manage the bell, and to strike it at prearranged intervals. Some yards distant from the bell a slight metallic sound could be detected, caused, doubtless, by a vibratory movement communicated to the metal of the ear-trumpet by the membrane. As the distance from the bell increased its sound became dull, its intensity diminished rapidly, and at 1,500 to 1,600 yards it was almost inaudible.

Comparing the above results it would appear that the great volume of sound emitted by a bell of 8 cwt. had a less range than the weaker sound produced by a bell of 104 lb. weight.

In the third series of experiments, a small 4½ in. hand-bell was employed. The large bell and the hand-bell were sounded alternately. The sound from the former, as in the second series of experiments, was not distinguishable at a distance of more than 1,600 yards, whilst that of the latter was audible at more than 1,000 yards distance.

The conclusions drawn from these experiments were:

1. That the range of sound in running water even in the direction of the stream, is much less than in still water, as of a lake.

2. That when the volume and depth of sound are greatly augmented, a very small increase, and in some cases even, a decrease of the distance at which the sound is audible are the results.

3. That it is probable that with equal volumes of sound in moving water, the auditory distance will increase with the sharpness of the sound. It is suggested that powerful steam whistles might be used with great effect; but we do not learn that any attempts were made to put this suggestion in practice.

MUSIC AS AN EXPLOSIVE AGENT.—Quite a number of years ago, Professor Tyndall called attention to some interesting experiments which he had made with "sensitive" or "singing flames," as a result of the observed facts that gas-lights will vibrate in a peculiar way under certain conditions when music is made near them. Some time afterward, Mr Abel showed that explosive substances will generally preserve their stability unless their particles are excited to move in a peculiar way. M. M. Champion and Pellstt have now undertaken to prove that as heat alone will not always cause explosives to explode, there must be some musical note or notes which are capable of doing so. One of their experiments was to place iodide of nitrogen in small bags suspended from the strings of a bass viol. When the bow was applied, it was found that the lowest notes occasioned no explosion, while the higher ones instantly did so, at least sixty vibrations per second being required to produce the desired effect.

A CHEAP BATTERY.—Mr. H. Highton communicates the following to the *Mechanics' Magazine*:—It may interest your readers to know that the cheap and simple battery made up as follows is nearly 50 per cent. higher in its potential than a Grove battery, and more than 150 per cent. higher than a Daniell:—For positive, zinc in a solution of caustic potash or soda; for negative, carbon in a porous cell packed with precipitated sulphur, peroxide of manganese and granulated carbon, filled up with dilute sulphuric acid. The internal resistance is rather great, but if common salt be used with the zinc the internal resistance is much less, but the potential only a little more than 10 per cent. higher than a Grove. This is a very cheap and convenient form of battery, and, I think, on the whole, the very best that can be used for ordinary purposes.

PRESENT AND FOSSIL BIG TREES.—Professor Asa Gray, the retiring President of the American Association for the Advancement of Science, gave at the opening session an interesting sketch of his botanical observations at the West, referring particularly to the "big trees" of California, the *sequoia gigantea*, their history, and relation to the fossil trees of geological ages. Of the possible theories respecting these forest phenomena, Professor Gray maintained that they were the lineal successors of a pre-historic race of trees which once crowded the hills and valleys of the world. His arguments are summed up as follows: At the beginning of the tertiary period the northern temperate zone was a region of perpetual summer. Gradually glaciers rolled down from the north, driving all vegetation far to the south. Then a warmer climate came again, and freed the greater part of the northern hemisphere from its fetters of ice. As these melted away vegetation extended northward, but not to its former limits. These facts furnish a clew to the history of the "big trees." If their ancestors were numbered by hundreds of thousands, their fossil remains must exist in the strata formed by the great ice-flood that swept over the northern half of the globe. Research has found the fossil *sequoia gigantea* throughout the miocene formations of northern Europe, and in those of Iceland, Spitzbergen, Greenland, Alaska and the Rocky Mountains. All of these fossil specimens are almost the same as the "big trees" of to-day. This crucial test shows that before man sprang from the dust of the Garden of Eden, according to Genesis, or was evolved from the ape of northern Africa, according to Darwin, the *sequoia gigantea* belted northern America, Asia and Europe, and the islands of the northern seas.

PHOTOGRAPHING THE EYE AND EAR.—Dr. Vogel writes to the Philadelphia *Photographer* as follows: "That the interior of the human eye has been photographed is well known. This experiment is a somewhat cruel one for a living subject; still there are victims who stand it. I know, for instance, a very handsome young lady, whose brother is a physician, who patiently takes extract of belladonna until the pupil has become sufficiently enlarged; the interior of the eye is then illuminated with magnesium-light, and photographed. In a similar manner has the ear been photographed, that is to say, the tympanum only. A tube is inserted, in which is a mirror, inclined at a certain angle. The mirror throws light into the interior of the ear. The mirror is also provided with a central hole, through which the illuminated tympanum can be inspected. A system of lenses projects an image on the sensitive plate, and the picture is made in the ordinary manner."

PERIODICITY OF STORMS.—M. Charles Sainte Claire Deville read not long since a memoir before the *Academie des Sciences*, quadruple symmetries and their application to the study of electric and atmospheric phenomena. He brought forward evidence to show that storms, auroras, etc., almost always occur after periodic intervals of ninety, thirty, and ten days. Also that there is a periodicity attached to the thirteenth, fourteenth, and fifteenth days of the month as shown by the reports of the Meteorological Office. During the last two years, two or more of the days of from the 11th to the 15th of every month have been marked by winds, rains, squalls, thunder storms and auroras. Furthermore, a symmetry of phenomena can be detected at the dates 4th, 13th and 24th of each month, of which M. Devills cited numerous examples.

A PYROMETRIC PAINT.—A paint that changes color according to the heat to which it is exposed would be valuable on parts of machinery which are inaccessible to the touch, but can be seen. The *Journal of Applied Chemistry* recently described the property of certain double salts which vary their color according to temperature, and Professors Thurston and Mayer, of the Stevens Institute, recommend them as a method of indicating a hot journal. Mixtures of iodide of silver and iodide of mercury, also iodide of silver and iodide of copper are proposed as being particularly sensitive. Iodide of mercury alone could also be used. These salts go through a variety of colors from scarlet to black, and would at once indicate the temperature of any part of the machinery coated with them. The suggestion of the accomplished professors of the Stevens Institute may be worthy of a trial.

THE FRENCH ACADEMY OF SCIENCE AND CHARLES DARWIN.—Charles Darwin having applied for admission to the French Academy of Sciences, has been rejected by a large majority. The reasons given for his rejection were solely scientific. M. Moigno said "the Author of the Origin of Species' and 'The Descent of Man,' has too far sacrificed science to renown and reason to imagination, to deserve a place in the first rank of earnest scientists. * * He has fallen too low, especially in his last work, has too much belittled himself not to be made to expiate it. * * In closing itself against Darwin, our Academy of Sciences desired to protest energetically against the abuse which has been made of his doctrines, by such men as Clemence, Royer, Hoeckel and Vogt."

ORGANISMS IN THE ROCKS.—Dr. Jenzsch, of Gotha, who has devoted himself for some years to microscopic lithology, announces that in various kinds of crystalline and volcanic rocks he has discovered minute animal forms in prodigious numbers in a fossil condition. Among them he finds infusoria and rotiferæ intermingled with algæ, and he infers their formation in a large expanse of stagnant water.

IRON DEPOSITED BY ELECTRICITY.—The following conclusions have been reached in the course of investigations into the characteristics of iron deposited by electricity: First, iron and copper when deposited absorb a certain amount of gas, especially hydrogen; second, the volume of the gas absorbed by iron varies between widely extended limits — this, in the case of iron, being sometimes as much as 185 times its volume; third, absorption of gas takes place principally in the layers which are deposited first; fourth, when such iron is heated the disengagement of the gas commences below the temperature of 212°. At this temperature it is principally hydrogen that is separated.

NEW EXPLOSIVE MIXTURE.—M. Violette has made the observation that by fusing together a mixture of the nitrate and acetate of soda, a white hard mass is obtained, which when heated to 350° C. (662° F.), explodes with violence. By plunging into this liquid mixture a lighted body, an explosion instantly follows.

HAILSTORM OF SALT.—Muller states that on the 20th of August, 1870, upon the St. Gotthard Mountain, for five minutes a hailstorm happened to fall, which consisted of round pieces of salt similar in character to those which are found in North Africa.

MECHANICAL PROGRESS.

Photographing the Pulse.

The ingenious apparatus invented by Dr. Ozanam of Paris, for rendering the variable beatings of the pulse visible, is already proving itself of practical value. It consists of a camera lucida, about 10 inches wide, in which a piece of mechanism, moving at a uniform rate, pushes a glass plate, prepared with collodion, in front of a very narrow aperture exposed to the light. In this aperture is a glass tube, in which a column of mercury may rise or fall, as in a thermometer. By attaching to the wrist a rubber tube, filled with mercury, in connection with the tube of the apparatus, the beating of the pulse as received on this artificial artery, and the pulsations are transmitted to the recording apparatus. As the column in the tube acts as a screen, light can penetrate the aperture only where the column is deficient; consequently the prepared plate becomes black under the influence of light everywhere except at such places as the column intercepts it. As the column rises and falls with each pulsation of the heart, these black lines on the prepared plate, pushed regularly forward, will be longer or shorter alternately, and will be successively photographed as being lines perpendicular to a common base, the heart thus being made to register photographically its own pulsations. These photographic representations can be so magnified as to be rendered visible across a large amphitheater; and such is the peculiarity of the apparatus, in its adaptation to different uses, that it may be modified so as to register the variations of respiration, the irregular action of coughing, and similar physiological and pathological phenomena.—*Ex.*

HOW NICKEL PLATING IS DONE.—A coating of nickel adds so much to the beauty and durability of most objects made of cast iron, wrought iron and other common metals, that the following process, published by Stolba, must prove valuable if the deposit is at all equal to that produced by ordinary plating. A quantity of concentrated chlorids of zinc solution is placed in a clean metallic vessel, and to this is added an equal volume of water. This is heated to boiling, and hydrochloric acid is added drop by drop until the precipitate which has formed on adding water has disappeared. A small quantity of zinc powder is now added, which produces a zinc coating on the metal, as far as the liquid extends. Enough of the nickel salt (chloride of sulphate) is then added to color the liquid distinctly green; the objects to be plated are placed in it, together with some zinc clippings, and the liquid is brought to boiling. The nickel is precipitated in the course of fifteen minutes, and the objects will be found to be completely coated. The coating varies in lustre with the character of the metallic surface; where this is polished, the plating is likewise lustrous, and *vice versa*. Salt of cobalt affords a cobalt plating, which is steel grey in color, not so lustrous as the nickel, and more liable to tarnish.

THE STEAM ENGINE AND CIVILIZATION.—In discussing this question the *Quarterly Review* says: The steam-engine, mighty as a slave, is the hardest and most brutalizing of masters. It has called into existence a new class in the social scale, a class unknown save by name a century ago, a class which no great statesman has dared look in the face. This class is that of the operatives, the men, women, and children who are the Helots of the steam-engine. Without that culture of the intelligence which every craft necessarily produces in the craftsman; without that healthy simplicity which attaches to agricultural and open-air employments; shut out from the influence of man, in his industrial and social activity, by the many-windowed walls of the factory; shut out from the light and voice of God, as he speaks in the aspects of nature, the operative class is hourly adding up a terrible score which society will some day have to liquidate.—*Scribner.*

NEW CASE-HARDENING PROCESS.—A resident of Montreal has recently patented in the United States a new process of carbonizing wrought-iron articles. Charcoal, coal dust, oil, bone dust, have each been used for this purpose; but strangely enough, one of the most highly carbonized substances, and one most easily accessible to an iron worker, has been overlooked. This is molten cast iron, and the inventor prepares a bath of it, having previously eliminated any phosphorus and sulphur it may contain. Spiegeleisen is especially recommended for the purpose; but good malleable iron, melted in a cupola with charcoal, anthracite or bituminous coal, or coak, will serve the purpose. Crucibles for melting small quantities, or reverberatory furnaces for large masses, may be employed. The cast iron readily yields its carbon to the immersed articles, and this element would rapidly become exhausted if no means are taken to continue a supply. To obviate this, the crucibles and furnaces are lined with a coating of charcoal powder or plumbago with which nitrogenous matter has been incorporated. Leather or horn shavings will do for this purpose. If the process were carried out on a large scale, the cast iron from which the carbon has been eliminated could be at once sent to the rollers and made up into bar iron, another melting being used for a second case-hardening operation; and many other changes of detail will probably suggest themselves to our practical readers.

SOLID BOTTOMS FOR FIRE-GRATES.—The most practical suggestion, says the *Spectator*, yet made towards economy of coals seems to be the use of solid bottoms in ordinary fire-grates. It is asserted, and indeed proved, that in any fireplace not excessively small, a plate of iron placed upon the grate will halve the consumption of coal, reduce the smoke, and leave a cheerful, free-burning fire. Quite sufficient air enters through the bars, no poking is necessary, and the fire never goes out till the coal is consumed. There is no ash and no dust, every particle of fuel being consumed. Any householder can try this experiment, and reduce his coal bill say 30 per cent. at the cost of a shilling.

ENGLISH AND AMERICAN IRONS differ from each other in certain general characteristics. American is softer than English. As respects resistance to tension strain, it is more ductile, tougher; while yielding more readily to immediate force, it will stand a greater ultimate strain; also, it undergoes vibration without crystallizing better than does English iron. English iron, being harder, stands a greater immediate tension strain, but yields to a less ultimate force, and crystallizes more readily under vibration. As respects compressive strain, the same general difference exists; it is believed that English cast iron, being harder, will, as the rule, resist greater compression than does ours.

NOISY MACHINERY NOT NECESSARY.—A New England mechanic thinks we need have no noisy machinery, for that of the organ or piano is as complicated as a cotton mill, and yet by careful packing with leather and wool of the various parts, gives us nothing but sweet sounds. Blessed be the day of silent inventions, when rubber tires, musical whistles and low humming machinery, shall make life endurable in every crowded city. Why cannot our manufacturers line and underlay their machinery with rubber, felt, etc., and deaden the din of our workshops, so that it shall be less wearysome to the head, and thus effect a material saving in the physical strength of workmen?

HIGH AND LOW STEAM.—It is erroneously supposed that high steam contains much more heat than low steam, and that on this account it will be more efficient in heating buildings and driving engines. A pound of steam at any pressure contains practically a constant number of heat units. In other words, a pound of steam at either low or high pressure will raise the temperature of a given quantity of water the same number of degrees. This has been thoroughly proved by experiment, the variation from the law being too small for notice in common practice.—*Manufacturer.*

NEW PROCESS OF DESSICATING TIMBER.—Jas. F. Gyles, of Chicago, has patented a process for dessicating and seasoning lumber, which consists in dessicating green lumber by applying pressure on a line at right angles to the grain thereof, and gradually changing said transverse line of pressure by keeping the lumber in motion between two pressure surfaces. And he has further patented machinery and tools for tonguing, dessicating, and cutting lumber into lengths, whereby green lumber may be sawed, dried, tongued, grooved, and applied to immediate use.

THE DANES' FURNACE.—At various works in the North of England, the construction of the Danks' Furnace is being hurried on. A number of those furnace will soon be at work, and practically tested on a large scale. At some places arrangements are being made for running the pig metal direct from the blast furnaces into the Danks' puddling furnace, and it is thought that there is no reason why this plan should not be adopted in all cases.

NEW BRONZE.—A bronze composed of seven parts of copper, four of zinc and one of tin has been found so hard as to be difficult to work, and yet of considerable value in certain ways when worked. Various methods have been attempted aiming at effecting a ready working of this alloy, and W. Bechstein has recently, by soaking the alloy in petroleum, attained this desirable end.—*American Chemist.*

OUR MINING SHAREHOLDERS' DIRECTORY.

ASSESSMENTS.

Name of Co.	Location.	Secretary, S.F.Office, Assm't.	Levied.	Delinq't.	Sale.
Alaska Con	M. Co. Lyon Co , Nev.	G. R. Spinney. 320 California St. 25.	Sept. 3.	Oct. 7.	Oct. 28.
American Flag M. Co	Ely District.	Geo. R. Spinney, 320 California St. $2 00.	Sept. 4.	Oct. 8.	Nov. 1.
Atlantic & Pacific Con, M. Co.	El Dorado Co.	A. Noel. 419 California St. 20.	Sept. 11.	Oct. 15.	Nov. 2.
ALTONA G. M. CO.	Grass Valley, Cal.	Daniel Wilder. 28 Merchants' Ex. 10.	Oct. 3.	Nov. 2.	Nov. 25.*
AUBURN G. M. CO.	Placer Co., Cal.	Geo. W. Dixon. corner Mont. & Cal. 25.	Sept. 13.	Oct. 14.	Nov. 6.
BECKWITH M. CO.	Ely District.	Wm. H. Watson. 302 Montgomery St. 20.	Aug. 19.	Sept. 28.	Oct. 23*
Bovery Cons. M. & M. Co.	Ely Dist.	C. E. Elliott. 419 California St. $1.	Sept. 17.	Oct. 24.	Nov. 10.
Calaveras G. M. C.	Calaveras Co.	T. B. Wingard, 318 California St. 50.	Aug. 26.	Oct. 1.	Oct. 22.
Caledonia S. M. Co	Storey Co., Nev.	R. Wegener. 414 California St. $2 00.	Sept. 11.	Oct. 16.	Nov. 6.
Cederburg 1st N. Ex. Co.	California.	J. N. Webster. 506 Montgomery St. 10.	Sept. 9.	Oct. 14.	Nov. 2.
Cedorhurg, 1st S. Extension.	California.	J. N. Webster, 506 Montgomery St. 4.	Sept. 11.	Oct. 12.	Nov. 12.
Chapman M. and M. Co.	Ely Dist.	F. Swift. 415 Montgomery St. 50.	Sept. 16.	Oct. 24.	Nov. 15.
Cherokee Flat Mine G. Co.	Butte Co., Cal.	H. Pichoir. 603 Washington St. $1 00.	Sept. 6.	Oct. 11.	Oct. 29.
Condor M. Co.	Ely District.	H. O. Kibbe. 419 California St. $1 00.	Sept. 12.	Oct. 23.	Nov. 13.
Con. Anurim M. Co.	California.	H. Voorman. 411 California St. $5 00.	Aug. 9.	Sept. 24.	Oct. 16.
Consolidated Virginia.	Washoe.	D. T. Bailey. 401 California St. $3 00.	Sept. 26.	Nov. 1.	Nov. 21.
Cook & Geyer M. Co.	Storey Co., Nev.	C. H. Fish. 419 California St. 50.	Sept. 4.	Oct. 8.	Oct. 28.
COTTONW'D CREEK M. C O.	California.	Jos. L. King. 411 California St. 7.	Aug. 19.	Sept. 28.	Oct. 15*
Daney M. Co.	Lyon Co., Nev.	Geo. R. Spinney. 320 California St. $1 00.	Aug 29	Oct. 2.	Oct. 23.
Deseret Con. M. Co.	Utah T.	J. L. King. 411 California St. 20.	Sept. 16.	Oct. 18.	Nov. 7.
El Dorado M. Co.	Amador Co., Cal.	E. McFadden. Express building. 50.	Oct. 4.	Nov. 10.	Nov. 25.
Empire M. Co.	Grass Valley.	S. Pinkham. 401 California St. $5 00.	Sept. 6.	Oct. 12.	Oct. 29.
Empire M. Co.	1. T.	C. F Balcom. 426 Montgomery St. 50.	Aug. 5.	Sept 6.	Sept. 30.
Empire M. & M. Co.	Washoe.	W. E. Dean. 419 Cal. St. $1 00.	Sept. 12.	Oct. 21.	Dec. 2.
EXCELSIOR S. M. CO.	Nye Co., Nev.	W. A. Kollmyer. 340 Washington St. 10.	Sept. 26.	Oct. 29.	Nov. 22.
Fallis S. M. Co.	Ely District.	A. Treadwell. Merchants' Ex. 25.	Aug. 26.	Oct. 2.	Oct. 22.
Francis M. Co.	Mariposa Co.	T. F. Oronise. 409 California St. 75.	Aug. 20.	Sept. 20.	Oct. 15.
Globe M. Co.	Gold Hill.	W. E. Dean. 419 California St. $1 00.	Sept. 4.	Oct. 7.	Oct. 23.
Golden Chariot M. Co.	Idaho.	L. Kaplan. Merchants' Ex. $1 00.	Sept. 12.	Oct. 18.	Nov. 8.
Greenville M. Co.	Plumas Co., Cal.	H. C. Kibbe. 419 Cal. St. 50.	Oct. 1.	Nov. 5.	Nov. 26.
Hale & Norcross S. M. Co.	Washoe.	J. F. Lightner. 438 Cal. St. $5 00.	Aug. 22.	Sept. 26.	Oct. 1 6.
Huhn & Hunt M. Co.	Ely District.	L. Kaplan. Merchants' Ex. $1 00.	Aug. 20.	Oct. 4.	Oct. 25.
Imperial M Co.	Washoe.	W. E. Dean. 419 California St. $1 00.	Oct. 1.	Nov. 6.	Nov. 29.
Justice M. Co.	Washoe.	R. Wegner. 414 California St. $2 00.	Oct. 2.	Nov. 6.	Nov. 27.
Keatuck M. Co.	Ely District.	J. P. Cavallier. 509 Cal. St. 50.	Oct. 4.	Nov. 9.	Nov. 13.
Knickerbycker M. Co.	Storey Co., Nev.	Henry Boyle. Stevensons Build'g. $1 00.	Oct. 7.	Nov. 9.	Nov. 28.
LADY FRANKLIN G. & S. M. CO.	Cal.	J. S. Luty. 507 Montgomery St. 50.	Sept. 24.	Oct. 28.	Nov. 15.
Kinston M. Co.	Ely District.	L. Kaplan. Merchants' Ex. 20.	Aug. 26.	Oct. 1.	Nov. 7.
Lemon M. & M. Co.	Eureka Dist.	I. T. Milliken. 606 Merchant. $1 50.	Aug. 14.	Sept. 17.	Oct. 21.
LOUISE M. CO.	incoln Co.,Nev.	Wm. H. Watson. 302 Montg'ry St. 50.	Sept. 14.	Oct. 18.	Nov. 9.
Lyons & Wheeler M. Co.	Arizona.	T. W. Colburn. 409 Cal. St. 10.	Sept. 2.	Oct. 4.	Oct. 21.
Mahogany M. Co.	Idaho.	T. J. Owens. Express Building. $2 00.	Sept. 25.	Nov. 4.	Nov. 20.
Minnesota G. & S. M. Co.	Idaho.	Wm. Ellis. 414 Cal. St. 50.	Sept. 4.	Sept. 12.	Oct. 2.
Monitor Belmont M. Co.	Nye Co., Nev.	B. B. Minor. 411½ Cal. St. $1 00.	Aug. 20.	sept. 23.	Oct 14.
National M. Co.	Nye Co, Nev.	B. B. Minor. 411½ California St. 50.	Sept. 26.	Oct 28.	Nov. 18.
Newark S. M. Co.	Ely District.	D. T. Bagley. 401 Cal. St. 75.	Sept. 24.	Oct. 30.	Nov. 23.
Newton Booth Con. M. Co.	Ely Dist.	R-F. Scott. 314 Cal. St. 25.	Sept. 5.	Oct. 10.	Nov. 2.
NEVADA L. & M. CO.	Elko Co., Nev.]	Wm. H. Watson. 302 Monte'ry. St. 8.	Oct. 1.	Nov. 10.	Nov. 23.*
North Gro Fino.	Idaho.	C. F. Balcom. 426 Montg'ry St. 50.	Aug. 22.	Sept. 28.	Oct. 19.
OHIO CONS. G. M. CO	Calaveras Co.	W. A. Knapp. 432 Montg'ry St. 10.	Sept. 24.	Nov. 2.	Nov. 23.*
O. H. Treasure M. Co.	White Pine.	D. A. Jennings. 401 Cal. St. $1 50.	Oct. 9.	Nov. 15.	Dec. 6.
Overman S. M. Co.	Washoe.	W. W. Stetson. 414 Cal. St. $5 00.	Oct. 8.	Nov. 11.	Nov. 3.
Pacific Borax Co.	Esmeralda Oo.	E. Cooke. 607 Montg'ry St. 20.	Sept. 5.	Oct. 7.	Oct. 31.
Pauper M. Co.	Idaho.	J. L. King. 411 California St. 50.	Oct. 1.	Nov. 9.	Nov. 30.
Placer G. M. Co.	Placer Co., Cal.	G. W. R. King. 411 Cal. St. 15.	Sept. 16.	Oct. 22.	Nov. 8.
POCAHONTAS G. M. Co.	El Dorado Co.	D. A. Jennings. 401 Cal. St. 50.	Sept. 17.	Oct. 24.	Nov. 18.
Pride of Mountain M. Co.	Winnemucca.	T. W. Colburn. 419 Cal. St. 6.	Aug. 26.	Sept. 30.	Oct. 21.
QUAIL HILL M. & W. Co.	Calaveras Co.	T. F. Oronise. 409 Cal. St. $5 00.	Aug. 22.	Oct. 2.	Oct. 24.
Red Cloud S. M. Co.	Ely District.	E. F. Clark. 331 Montg'ry St. 25.	Aug. 24.	Sept. 24.	Oct. 16.*
Savage M. Co.	Washoe.	E. B. Holmes. 401 Cal. St. $10 00.	Sept. 10.	Oct. 16.	Nov. 2.
SILVER SPROUT M. Co.	Kearsarge Dist.	B. Wingard, 318 Cal. St. 50.	Aug. 26.	Oct. 8.	Nov. 1.
SILVER WAVE M. CO.	White Pine.	J. W. Clark. 418 Cal. St. $1 00.	Sept 21.	Oct. 26.	Nov. 25.*
Silver West Con. M. Co.	Eureka District.	F. R. Bunker. Montg'ry Block. 50.	Aug. 26.	Oct. 5.	Oct. 30.
South Chariot M. Co.	Idaho.	J. L. King. 411 Cal. St. 50.	Sept. 6.	Oct. 12.	Nov. 4.
Stickle M. Co.	Calaveras Co. Cal.	T. B. Wingard. 318 Cal. St.$1 00.	Sept. 4.	Oct 1.	Oct. 28.
Succor M. & M. Co.	Washoe.	W. H. Watson. 302 Montg'ry St. $1 00.	Sept. 20.	Oct. 11.	Nov. 21.
Talulah M. Co.	Humboldt,Nev.	Geo. A. Hill. 18 Monig'ry St. $3 00.	Aug. 26.	Sept. 24.	Oct. 15.
TELLURIUM G. & S. M. CO.	Amador Co.,Cal	Wm. H. Soery. Cr. Clay & K'ny. $1 00.	Sept. 3.	Oct. 5.	Oct. 26*
Tehama Cons.	Sohell Creek.	W. W. Stetson.414 Cal. St. $2 00.	Aug. 2.	Oct. 1.	Oct. 19.
VICTORIA & INP. M. CO.	Utah T.	Wm. H. Watson. 302 Montg'ry St. 10.	Aug. 14.	Sept. 18.	Oct. 12*
Washington & Creole M. Co.	Ely District.	F. D. Cleary. Merchant Ex. 50.	Sept. 6.	Oct. 19.	Nov. 11.
Yuba Gravel M. Co.	Nevada Co., Cal.	J. A. Gordon. 108 Battery St. 25.	Sept. 17.	Oct. 21.	Nov. 11.

MEETINGS TO BE HELD.

Name of Co.	Location.	Secretary. Office in S.F.	An'l or Sp'l.	Date.
Amador M. Co.	Amador Oo.	F. A. Hill. Fxpress building.	Special.	Oct. 28.
Cook & Geyer.	Storey Co., Nev.	O. H. Rich. 419 Cal. St.	Annual.	Oct. 14.
Eureka Con. M. Co.	Eureka Dist.	W. W. Staylor. 419 California St.	Annual.	Oct. 14.
Eureka G. M. Co.	Nevada Co., Cal.	R. Wegener. 414 California St.	Annual.	Oct. 17.
Excelsior Gravel M. Co.		P. W. Van Winkle. 304 Montg'ry St.	Special.	Oct. 17.
Exchequer M. Co.	Washoe.	D. T. Bagley. 401 Cal. St.	Annual.	Oct. 21.
Grand Duke T. & M. Co.		R. H. Sinton. Montgomery block.	Annual.	Oct. 21.
Hayden Hill M. Co.		Wm. H. Knight. 331 Montg'ry St.	Annual.	Nov. 9.
Heckerdom M. Co.		L. Leorne. 513 Jackson St.	Special.	Oct. 26.
Indus G. and S. M. Co.		John Fowler. Merchants' Ex.	Andual.	Oct. 19.
Julia G. & S. M. Co.	Washoe.	A. Noel. 419 California St.	Annual.	Oct. 14.
South Chariot.	Idaho.	J. L. King. 411 St.	Annual.	Oct. 21.

LATEST DIVIDENDS—Within Three Months.

Name of Co.	Location.	Secretary. Office in S. F.	Amount.	Payable.
Belcher M. Co.	Washoe.	H. C. Kibbe. 419 California St.	$3.00.	Sent. 10.
Black Diamond Coal Co.	California.		½ per cent,	Oct. 1.
Crown Point G. & S. M. Co.	Washoe.	C. E. Elliot. 419 California St.	$3 00.	July 5.
Eastport Coos Bay Coal.	Oregon.	I. L. Pool. Merchants' Ex.	$3 00.	Sept. 14.
Keystone Quartz M. Co.	California.	L. Yesaria.	50.	July 10.
Mahogany G. & S. M. Co.	Idaho.	T. J. Owens. 402 Montg'ry, St.	$1 50.	Aug. 7.
Meadow Valley M. Co.	Ely Dist., Nev.	T. W. Colburn. 419 California St.	$1 00.	June 20.
Raymond & Ely M. Co.	Ely Dist., Nev.	A. J. Moulder. 419 California St.	$7 00.	Oct. 10.
Pioche S. M. Co.	Ely Dist., Nev.	C. E. Elliot. 419 California St.	$1 00.	Aug. 10.

——* Advertised in this journal.

Stock Sales for Week Ending Oct. 10—S. F. Stock & Ex. Board.

NAMES OF COMPANIES.	Past.	Shs. in ft.	FRIDAY. Shs	Prices.	SATURDAY. Shs	Prices.	MONDAY. Shs	Prices.	TUESDAY. Shs	Prices.	WEDNESD'Y Shs	Prices.	THURSDAY. Shs	Prices.	Tot'l Sh's Sold.	Declin Advnc
Adams Hill	*	300	20	100	1½										100	
Alpha	*	300	20	25	34 @36	3	32½	160	41 @43	45	46 @48	70	37 @41	20	42	250	6
Alps	§	300	37½	115	4¼@ 4⅝	50	4½	400	4½@ 4⅝	50	4⅝	250	4⅝@ 4¾	125	4¾@ 4⅞	990	⅜
American Flag	*	2600	11½	355	18½@19½	550	18½@19	70	17½@18	60	17½@17⅝	350	17 @17½	205	17	1590	2½
Arizona & Utah	*	1900	19½			50	1½	25	1¾	100	1¾	125	1⅜@ 1½	325	1⅜@ 1½	625	
Belcher	*	1010	10	451	88 @90	275	85 @87	260	94 @97½	640	93 @95	205	89 @91	415	90 @91½	2221	1½
Baltimore	*	1200	20														
Bullion Ann	§	1000	20														
Bowery	§	1000	30	70	1	115	1					100	1	250	1	535	
Bacon																	
Buckeye														100	2¾	100	
Best & Belcher		224	100														
Bellevue	§	8000	2½														
Belmont				28	5¾@ 6	350	6 @ 6¼	1320	5¾@ 6	1180	5½@ 6	700	5 @ 5½	1890	5 @ 5⅝	5720	⅜
Chollar	*	2800	10	145	53 @55	160	52½@53	150	55 @56	680	53 @56	410	52 @55	380	51½@53½	1925	1½
Caledonia	*	5000	4	355	22 @23	220	23 @25¾	405	26 @27¾	185	26 @27	225	24¾@25½	330	25 @26	1650	2
Cons. Virginia	§	160	420	390	56¾@60	180	57½@60	220	62½@72	220	70 @73	305	64 @67	380	61 @65	1725	5
Confidence		130	192					1230	10 @11½	760	10 @11	250	9¾@10	635	10 @10½	2875	
Crown Point	*	600	166⅔	235	90 @96	200	92 @95	180	97 @112	505	106 @121	125	103 @104	150	100 @105	1395	9
Central		70	357					100	10			40	9			140	
Calaveras	§	3200	6¾														
Condor						100	1	275	75c @1	30	1	100	50c @75c	100	75c	505	
Chapman	*	700	40			300	1¾			100	1⅝	1750	1¾@ 1⅞			2150	
Chief of the Hill		1000	30	340	10¾@11	560	10¾@10¾	245	10¾@11¼	905	10¼@11¼	180	10⅜@10⅜	150	10⅜@10½	2380	⅛
Cederburg		120	20	50	7					100	6	100	6	200	5½@ 5¾	350	1½
Daney		2000	10	70	1⅜@ 1⅞			100	1⅜@ 2	20	1¾	100	1½@ 1⅝	20	1¾	250	½
Eureka Cons	*	1000	30	635	17¾@18½	70	20	645	21 @22½	420	18 @20	95	18 @18¾			1915	
Eureka	*	1680	12											155	18¾@19	155	
Exchequer	*	400	20	20	14			30	18	130	18½@19					180	
Eclipse		10	357					250	11½@12	80	11					330	
Empire M. Mi	*	2000	10	855	6¾@ 6⅞	70	6½	1610	9½@10½	2315	8¾@10½	525	7¾@ 8	1295	9 @ 9½	8650	2⅜
Excelsior		4500	2½					70	13 @14							70	
Gould & Curry	*	1200	4	35	152 @160	5	147½	15	155 @157	113	175 @178	35	165 @172	285	163 @167	438	7
Golden Chariot	§	750	18⅝	250	17 @20			225	12½@16	80	15 @16¾	60	15 @16	85	16 @16½	670	3½
Globe	*	1600	12½			100	1¾	20	1¾	220	1⅜@ 1½	15	1½@ 1⅝	20	75c	425	
Ont. Gold Mill	§		40					150	5	45	5 @ 5¼	90	4½@ 5			323	
Hale & Norcross	*	400	4	120	69 @72½	10	68	10	68	183	73 @76½	85	69½@71	83	67 @75	493	2½
Huhn & Hunt	§	3600	8½	100	6½	1585	8 @ 8¾	470	7¼@ 7¾	1000	7¼@ 7½	670	7 @ 7½	1125	7¼@ 7¾	4910	⅜
Hermes								70	9½	100	10					170	
Ida Elmore	§	1500	12½							100	12½	325	12			425	
Imperial	*	184	543⅜	555	7 @ 7½	340	6¾@ 7	3795	9¾@11½	2055	9¾@10¾	1800	8⅞@ 9¾	2515	9 @10	11400	2½
Ingomar	§	1000	40							225	1¾@ 1⅞			200	1⅝	425	
Independent		1800	14					100	50c					200	50c @55c	300	
Ivanhoe	§	600	5														
Justice	§	2000	7	1230	6½@ 7	1415	6¾@ 7	1275	7 @ 7¾	780	7¼@ 7¾	1565	7¼@ 7¾	695	7½@ 7¾	7060	⅜
Justice	§	3000	7	170	5 @ 6	310	5½@ 5¾	355	6 @ 6⅝	345	7½@ 8¼	215	8 @ 8¼	300	7½@ 8	1695	
Kentuck		95	21					35	200 @210			1	230	10	22½	46	
Knickerbocker	*	1200	20	160	4¼@ 4½	255	5	745	5 @ 5¼	200	5 @ 5¼	185	4½@ 5	220	4⅞@ 6	1765	½
Mammoth	§	1800	20					1610	9½@10½	2315	8¾@10½	525	7¾@ 8	1295	9 @ 9½	8650	2⅜
Meadow Valley	§		12½	1850	2¼@2⅜	635	25 @25¾	770	2¼@2⅝	1400	2¼@2⅝	1385	2¼@2⅝	165	2¼@2⅝	6845	1⅜
Mahogany	§	720	137½	10	5¾			1070	6¾@ 6¾	35	6½@ 7	215	7 @ 7½	545	7¼@ 8	1875	2¼
Mooking Bird																	
McMahon																	
Newark	§	800	40	251	4 @ 4½			325	4½@ 5	600	4⅞@ 5¼	410	4¾@ 4⅞	175	4⅞@ 5	1791	½
Ophir		1400	12	120	61 @62	70	57¾@60½	625	64 @68	775	65 @67	630	57 @60½	290	53½@55½	2510	6½
O. H. Treasure	‡	800	26⅔	360	5¾@ 5¾			250	5½			515	5 @ 5½			1125	
Overman		1200	10⅝	230	50 @52½	20	51 @52½	165	53 @57	250	57 @58	1300	56 @57	20	56½	1963	4
Occidental		800	5½														
Pioche	§	1000	20	135	16½@17	465	16½@16¾	145	17 @17½	150	17 @18½	305	17 @17¾	115	16½@17	1315	
Page & Panaca	§	2400	16⅔	460	2½@ 2¾	100	2¼	800	2¼@ 2⅜	870	2¼@ 2⅜	870	2¼@ 2⅜	370	2¼@ 2½	2870	¼
Pea Vine	§	1000	30	50	16	100	75c	450	75c @80c	100	90c	50	1	700	85c @90c	1450	15c
Phenix	*			210	3⅞@ 4⅛					460	4 @ 4¼	150	4½@ 4¾	85	4⅛@ 4¾	905	⅛
Pioche West				560	4¼@ 4½	150	5	350	5 @ 5¼	1250	5 @ 5¼			275	4¼@ 4¾	1510	¼
Raymond & Ely	§	4000	7½	485	139 @149	125	146 @150	185	155 @161	220	154 @158	260	144 @148	135	144 @144	1410	6
Savage	*	800	20	130	77 @82	60	78 @80	185	79 @82½	380	80 @100	640	85 @92½	470	91 @101	1873	13
Seg. Belcher	*	160	40	50	49 @55	25	59 @60	10	75	30	75	75	70 @74	55	74 @75	245	20
Sierra Nevada	§	2000	7½	100	15 @15½	230	15	120	15½@16	40	15½@16	115	15 @15½	115	14¾@16	720	½
Succor	*	7600	3											200	3¼@ 3⅜	200	
Silver Hill						365	8½	555	8½@ 9	690	8¾@ 9½	3200	8½@ 9¾	315	8 @ 8½	5145	
St. Patrick		1800	12½														
South Chariot		660	30½											10	1½	10	
Seg. Caledonia	*		20														
Trench	*		250														
Wash. & Creole	§	200	150	595	37⅝@ 4					90	3⅞@ 4¼	65	4	220	4¼	970	¼
Woodville		1400	20			100	3½	100	3¼	100	3	100	3¼	130	3 @ 3½	530	
War Eagle	§	1000	10														
Utah		1000	20	10	3½											10	
Yellow Jacket	*	1200	25	430	67½@71	60	68 @11	490	80 @87½	165	90 @92	660	84 @88	300	83 @90	2103	19
Yule Gravel		400	25														

NOTE.—†—California. *—Washoe. ‡White Pine. §—Ely District. ¶Eureka District. ‖—Idaho. ⊥—Nearly. ?—Over.

S. F. Stock and Exchange Board.

THURSDAY, Oct. 10th, 1872.

The selee et the Boerd for the week ending Oct. 2d were about 92,000 sheree of all descriptione. Meedow Velley was the principal stock dealt in. Thie week stocks were pretty lively until Wedneedey when e reection eet in. Still, es may be eeen hy our Stock Tahlee, there ie e very decided advance in pricee over those of leet week.

On Friday the market strengthened e little over previous dey end prices were hetter. Pricee in the morning compered with those of previous dey were es follows: Gould & Curry edvenced $15; Crown Point and Cone. Virginie each, $10; Yellow Jacket end Seg. Belcher, each $6; Overmen and Sevage, each $5; Cboller Potosi, $3; Caledonie end Ophir, each $2; Empire Mill, Imperiel and Sierra Neveda, eech $1.

On Seturdey, the market was steedy and prices feir but not e very lerge amount of busiiness wes done. Meedow Valley was $1 lower; Reymond & Ely, $4 higher; Belcher, $3 lower; Crown Point, $1; Chollar, $2; Gould & Curry, $7; Hele and Norcross, $1; Ophir, $3; Overman, $2; Sevage, $2; Yellow Jacket, $1; Caledonia rose $1; Cone. Virginia, $4.

On Monday etocke were active again, and e generel rally was evident in some descriptione, closing et e lerge advance. Belcher wae $7 higher than on Saturday; Crown Point, $26; Celedonie, $2; Imperial, $3; Empire Mill, $3.25; Yellow Jecket, $11; Con. Virginie rose $12, closing at $72; Ophir, $10; Savege, $4; Raymond & Ely, $8.

On Tuesdey the merket was still strong and reguler, end pricee firm. From highest ratee on previous morning Alphe advanced $4; Consolideted Virginie, $8; Crown Point, $18; Exchequer, $1; Gould & Curry, $20; Hale & Norcross, $6; Justice end Overman each $2; Ophir, $5; Sevege, $18; Yellow Jacket, $7; Belcher, Choller-Potosi, Confidence end Imperiel each declined $1.

Wednesday there wes a reection in the merket, and e generel decline was manifest, which continued to close of afternoon Board, and esme of the recent advance was lost. Belcher fell $5; Crown Point $2; Consolideted Virginie, $5; Empire Mill, $2 ; Imperial, $1 ; Jacket, $6 ; Ophir, $4; Caledonia, $2; Confidence, $1; Gould & Curry. $8 ; Hele & Norcrose, $2 ; Choller, $1; Chief of the Hill, 50 cents; Raymond & Ely, $6; Sevege alone edvenced $1, efter e decline of $4 in the morning.

To-day, prices were egein irregular from highest retee yesterdey morning. Savage edvanced $7; Segregeted Belcher, $5; Yellow Jacket, $4; Gould & Curry, $2.50; Alpha, Empire Mill end Imperial eacb $1. Kentuck declined $7.50; Ophir $5; Crown Point 3; Consolideted Virginia $2 and Belcher $1.

BELCHER.—The usual quentity of ore ie coming out of the mine with no particular chenge. Asseys are high and ae they go south the ore is rich in gold. The ore production will shortly he increased. The hullion product for Sept. was $432,000; expenses, $178,000; net profite, $244,000; average of ore $65 per ton.

CHOLLAR POTOSI.—The sheft will require exrepeirs within 25 ft. of the incline. For week ending Oct. 5tb 1,907 tone were extracted end sent to mill aseayiug $27.40. Total receipte for Septemher, $55.463.52. Bullion shipped on 7th was $40,805.52.

CROWN POINT.—A diepatch of the 9th says the north end south drifts 1300-foot level are nearly all iu tbe wall. The ore in eight looks very fine. Made three feet in eech drift yesterday, and will soon have the 1300-foot leyel well ventileted. The several ore breasts look well. Average assay nortb drift, 1300-foot level $242; south drift, $389.

CHIEF OF THE HILL.—They are now taking out about ten tons per day, and the Magnet mill is running steedily on ore. From the straining of the pans only the Superintendent sent $5,152.73, on the 28th. Sbipped on the 5th, $4,970—being $10,100 to date.

HALE & NORCROSS.—For week ending October 5th, 800 tons of ore were extracted, 600 tons sent to mill, and 906 tons remein on dumpe. No uew developmente.

SAVAGE—Week endiug October 6th, 1,054 tone were extracted, aseaying $30.24; 819 tons were sent to mill, and 385 tons remained on dumps.

SIERRA NEVADA.—Total receipts for Septemher were $12,354.01.

RAYMOND & ELY.—On the 5th inst., the firet ehipment for the month was eent amountiug to $33,665. The usuel monthly dividend of $7 wae paid this month, the only mine eo fer paying dividends for October. The mine ie looking eplendidly, and the mill works in a eatisfactory manner. Shipped on the 7tb, $34,417; previous shipments, $336,651—total $371,068; equal to $11,347 per dey.

From the WOONVILLE a har worth $3,582.28, the proceede of 100 tons of ore wes received on the 7th. Mill running to full capecity. Some fine ore is heing taken out of the east winze of eecond level, of the AMERICAN FLAG; average assays, $131. From the BUCKEYE, $2,067.28 was shipped on the 5th inet. The WAR EAGLE sent down $1,109 on the 7th. From the EMPIRE $4,606 was received on the 3d inet. The mine is looking well. The American Flag mill will crueh 1,000 tons of ore from the HUHN & HUNT shortly. From Silver City, Idaho, for week ending Sept. 28th, Wells Fargo & Co. ehipped $20,551.25. From Pioche, for week ending Oct. 5th, the bullion shipments—$117,-218.24 shows a small increase over tboee of previous week.

MINING SUMMARY.

THE following is mostly condensed from journals puhlished in the interior,in proximity to the mines mentioned

California.

ALPINE COUNTY.

SILVER GLANCE.—Monitor *Miner*, Sept. 28: The down sheft on the Silver Glance hy the M. & N. W. Co. ie to he continued 75 ft.

AMADOR COUNTY.

OTIS.—Amedor *Dispatch*, Oct. 5: We were ehown some eplendid quertz yesterday teken from this mine et ebout 30 ft.

CALAVERAS.

RAILROAD FLAT.—Sen Andreas *Citizen*, Oct. 5: The prospects were never hetter. The miners are hard et work, end many are doing remerkably well.

SOIFFARD.—Mr. Dyce hae sunk the shaft about 40 ft. deeper then it was when he commenced operations. A new whim, worked hy horse power hee been erected, and there are 3 shefts at work, busily sinking. Tbe vein is large, end ehounds with sulphurete and free gold.

SHEEP RANCH.—This mine, which runs e 5-stemp mill for the present, cleaned up on last Seturdey $1,300, or en everege of $70 per ton.

KERN COUNTY.

ECLIPSE.—Hevilah *Miner*, Sep. 28: Rock from the deepest eheft, 126 ft. helow the surfece, ie of exceeding richness, end will yield $150 to $500 per ton. Sixteen minere ere engaged. A large quantity of rich ore is on dump, end will be commenced on hy the mill on the 2d of next month.

NEVADA COUNTY.

THE SITUATION.—Gress Velley *Union*, Oct. 2: The Ideho ie turning out gold at the reguler rete of ebout $40,000 a month witb only 15 stamps. The ledge ie still looking well. About the latter pert of thie month there will he 35 stampe in operation. Then the monthly yield will be over $90,000.

In the Independence Cons. Co., the present contract completing 210 ft. of tunnel, will be terminated next week, when work will be continued witbout intermission dey and night. Three ehifts will he employed, 8 houre eech.

On the Schuylkill Q. M. Co., a tunnel hes been run 350 ft. from Mary'e Revine. They ere putting in a winze, are down 20 ft., and have the ledge of the thicknese of from 12 to 18 inches, the rock showing an encouraging proepect.

EMPIRE continues to send up exceedingly rich ore. The run for the lest two weeke gave $25,906.30 witb 20 stamps. The rich strike eppeere to be a permanent one aud is not a pocket.

From the Eureka a har of gold wae brought in yesterdey, worth $11,000; the result of a 2-weeke' run of the mill.

GREEN MOUNTAIN ie having a cruehing pu through the Gold Hill mill. The rock will go to nearly $100 a ton and ehout 50 tone are heing crushed.

GRAVEL MINES.—The Town Telk continues to pay about $2,000 a month at an expense of about $1,200.

AT the Independent arrangments are heing mede to put up a mill through which the grevel will he run.

WYOMING.—Nevada *Transcript*, Oct. 1: The incline ie down about 200 ft., and the ledge averegee from 2 to 3 ft. in thickness. The rock pays from $25 to $30 per ton. The Co. proposes to immedietely put up hoieting worke end open a new incline, after which they will erect a first-claee mill and do their crushing upon the ground.

COPPER MINING.—Recently esme life hae been manifested in copper mining in the lower part of this county. Tbe old Well

miles in length—and will be ready to commence hydraulic operations as soon as the rain sets in.

SAN DIEGO COUNTY.

The Mines.—San Diego *Union*, Sept. 26: All the mills bnt the Antelope are running, and it will start np in a very short time on rock from the lead of the same name.

The mill of De Frees & Co. is crnshing rock taken from the 275-ft. level.

The mill formerly owned by Mr. Pierce has changed hands again, its old owner, Mr. Reynolds, taking possession. It is running on rock from the Big Blue. About 40 tons are to be crushed. Judging by past "clean ups" the qnartz is expected to yield about $50 per ton.

The Redman is crushing ore from the Kentuck. The lot,—25 tons—is very rich, and it is expected that it will yield fully $100 per ton.

The Ready Relief cleaned up a few days ago, after crushing 10 tons of rocks from their own mine. The clean np gave about $980.

Work on the old mines is going forward vigorously. The Van Wert, Helvetia and others, are turning ont good rock and keep a full force of hands employed. The new leads the Tom Scott, and Good Hopo No. 2, are both prospecting very well.

Items.—Kentuck has had a crushing of 12 tons which yielded $1,100. The Madden has just had a lot of 5 tons of rock cleansd np which gave them $550.

SIERRA COUNTY.

Paying.—Downieville *Messenger*, Oct. 5: The Bald Mountain claims, Forest city, are paying finely. It is said that $200 to a single pan has been taken out.

Nevada.

EUREKA DISTRICT.

Silver West Bullion.—Eureka *Sentinel*, Sept. 30: For the 25 days ending with last week, the Silver West Cons. Furnace had produced 169 tons of bullion of an average value of $290 per ton, or a total value of $49,010.

Ruby Hill Tunnel.—The indications in the face are still favorable. There are several "splotches" of ore visible, and it seems qnite probable that a fine body will be developed very soon.

Star Cons. Co.—Over 500 ft. of shafts, 200 ft. of drifts and 680 ft. of tunnels have been accomplished. The work is being continued, and in several shafts, and in one of the tunnels, there is very fine ore, and the indications are very favorable. At the dumps ore can be seen in considerable qnantity of good quality. At the Blne Star shaft we noticed a large pile of very fine ore that is being daily added to by the working of No. 2 shaft.

ELY DISTRICT.

Local Review—Bullion.—Ely *Record*, Sept. 28: W., F. & Co. have shipped during the past week $90,083.72.

Pioche Phenix.—Sinking steadily on the ledge in the old shaft. Assays taken lately run from $105 to $251 to the ton. These results come from the hottom of the winzes at a depth of 170 ft. The ledge has dipped considerably, and the winze is being anuk at an angle of from 50° to 75°., following the ledge, which has widened out. The new shaft which is intended to be the main working point, has reached a depth of 70 ft., timbered all the way down.

Bowery.—Will probably start its machinery to work in 3 or 4 days.

Chief of the Hill.—Every day 5 and 6 wagona leave for the Magnet mill loaded down with rich rock; 35 men are kept at work night and day, the principal work being confined to the 2 winzes sunk at an equal distance of 50 ft. east and west from the Burke tunnel, where large quantities of ore are taken out daiiy. J. W. Wright yesterday showed 3 fine bars of hullion, the product of the ores now being milled, weighing 3,316 oz. with a fineness as high as .900. The gold value of the three bars was $68.63, and the total value of silver and gold $3,402.65.

Chief East Ex.—During the last week the ledge has opened ont to 2 ft. in width, the average assays being $140 to the ton. Nine men are at work night and day, sinking and drifting.

Marion.—The whole depth of the mine is 90 ft. At 40 ft. a small streak of ledge was discovered. A drift following this strata was then run, It kept improving, opening np in such a uniform manner that the drift was continued, and it has reached 100 ft. with a ledge showing 4 ft. in width, 2 ft. of which is the pure stuff.

Mazeppa.—The shaft is 140 ft. deep, some very rich rock made its appearance. A new shaft was started for working purposes about 100 ft. from the old works, and it has reached 30 ft.

Orleans.—This mine has reached a depth of 180 ft. Heavy bodies of vein matter are being raised.

Ivanhoe.—The old shaft is down 300 ft. from which level a drift is being run to strike the ledge, which it is expected to tap in a few days. Good milling ore is being taken from the new shaft at a depth of 175 ft.

HUMBOLDT.

Blue Ledge.—Unionville *Silver State*, Oct. 2: The owners shipped a lot of ore to the Humboldt Canal Reduction Works. It assayed $134 per ton, and netted them $107.

REESE RIVER.

Review.—Reese River *Reveille*, Sept. 28: Belmont—Belmont, Co., sinking in the Highbridge shaft. As soon as the balance of the machinery arrives, will put up the new steam-hoisting works.

Work on the Canfield progressing freely; the 3 levels are under contract. Prospects are encouraging as far as the work has progressed.

El Dorado Co.—Is pushing business fast. Grading for the new mill is going on with dispatch; the battery blocks and frame are all on the ground.

In the El Dorado night shifts have been put on in order to hurry through the chutes and levels, preparatory to breasting out the ore. The great feature is the large ore chimney south of the main incline on the 340-ft. level. This rich strata carries its full width, from 7 to 8 ft., and the ore seems to increase in richness as well as in extent. A fine body of chloride ore has just been opened in the chute being raised south of the incline, from the 340-ft. level.

Arizona continues to show well; stoping just began in second level above the tunnel. Very rich chloride, over 3 ft. in thickness, has just been exposed. This is working 45 men.

Monitor Co.—Continuing tunnel No. 2; running lower level South; have just struck good ore in drift running south from Volmer incline north of tnnnel at a depth of 70 ft. below tunnel level. Monitor mill is fast approaching completion.

WASHOE.

Summary.—Gold Hill *News*, Oct. 5: McMeans—Continues without intermission; prospects of reaching the vein grow more encouraging daily. A run of 6 or 8 ft. more will evidently reach the fissure, which is known to exist, hy the developments in the new or south tunnel, to be very large.

Gould & Curry.—The incline is down 28 ft. below the 11th station (1600-ft. level), making good progress. The north drift, 8th station, is in 530 ft. The east drift, 10th station, is in 297 ft., the face in porphyry. The east crosscut from the south drift, 10th station, is in 33ft. in qnartz. The north drift from the 10th station is in 177 ft. The east drift from the 11th station is in 58 ft. in hard porphyry.

Imperial-Empire.—The incline is down 22 ft. below the 1700-foot level. The main drift from the 1700-ft. station is in 35 ft. The winze on 1600-ft. level is down 90 ft., with no change. The cross-cut east from the main south drift on the 1600-ft. level, is in 18 ft., in a mixture of clay and quartz. The main drift on the 1500-ft. level is being driven southward.

Senator.—The shaft is down 173 ft. in good working ground. Some very rich specimens of ore are being taken from a small prospecting shaft on the south end of the claim. The new hoisting-works building is nearly finished, and the new machinery working splendidly.

Silver Hill.—The maiu drift in the first level is rapidly carried westward. It is confidently expected that the vein will be cut by this drift within a very short time.

Chollar-Potosi.—Daily yield 170 tons, worth $30 per ton. The work of re-opening the lower portion of the shaft is progressing slowly. The Belvidere, Blue Wing and other ore sections are looking and yielding well.

Utah.—The main shaft is continued down without interrnption.

Virginia.—The main drift on the 1167-ft. level from the Gould & Curry shaft is driven ahead with no extra favorable indications in sight. The cross-cuts on the 500-ft. level are running through the low-grade ore.

Insurance.—The drift north is following the pay streak, which is about 5 ft. wide, of good milling ore.

Savage.—Daily yield, 160 tons, worth $27 per ton. The incline is down 190 ft. below the 1500-ft. level, and cutting out, for the 1600-ft. station has just been fairly commenced. The ore hody on the 661-ft. level of the old mine is holding out and yielding finely.

Hale & Norcross.—The main incline is carried down rapidly.

Occidental.—On the main adit of the level the work of development is prosecuted with unremitting vigor.

Buckeye.—Owing to a breakage of the pump in the early part of the week, but little has been done in the mine.

Woonville—Is looking and yielding finely. The clean-up to-day of the last 100 tons of ore crushed gives a return of about $36 per ton.

Jacob Little—Is looking finely, and the ore shows continual improvement.

Union Con.—The winze, 200 ft. from the mouth of the main west tunnel, is down 54 ft., and a drift run 30 ft. along the ledge, which is improving greatly in appearance as work progresses.

Dayton.—In this mine, silver City, a fine ledge of $25 or $30-ore is just developed—about 16 ft. wide.

Kentuck.—Daily yield 40 tons, from the old npper workings. A prospecting-drift has just been commenced on the 1300-ft. level, and fine developments may soon be looked for.

Yellow Jacket.—Daily yield 20 tons, from the old workings. The drift north at the 1300-ft. level is being driven ahead.

Baltimore.—Sinking the shaft is making good headway. Cutting ont for the pump at the 250-station is nearly finished.

Sierra Nevada.—Daily yield, 50 tons of good milling ore. All the ore breasts in both the upper and middle mine are yielding finely. The main west drift on the 500-ft. level is in 150 ft., the work making excellent progress.

Belcher—Daily yield, 260 tons. Ore breasts are looking well. The south drift, at the 1200-ft. level, is in 220 ft., with the face in quartz streaked with ore.

Julia.—The shaft is down 912 ft., and the sinking making fair progress. The main west drift is in 150 ft., with good prospects ahead. The hoisting works are fast approaching completion.

Ophir.—Work was delayed to a considerable extent dnring the week by a breakage of the machinery for forcing air iuto the mine.

Overman.—The work of erecting new machinery is progressing fast.

Caledonia.—The prospecting drifts on the 400-ft. level have made but slow progress during the week, ou account of the strong flow of water.

Crown Point.—Daily yield, 450 tons, from the 1100 and 1200-ft. levels. The ore developments in the 1300-ft level are opening out both rich and extensive.

Knickerbocker.—The main west drift is in 178 ft., the face in hard blasting ground.

WHITE PINE COUNTY.

Bullion.—White Pine *News*, Sept. 28: The shipment from White Pine during the past week was $14,538.22.

Eberhardt & Aurora Co.'s Mines.—The Eberhardt and Blue Bell shafts are still sinking. No ore has yet been found. In the Ridsdale and De Pass Chambers are drifting from the bottom of the Ridsdale shaft to connect with the South Aurora tunnel. Working in South chamber from the Lady's chambers. Taking out about 25 tons of good grade ore per day and shipping to the Smoky mill. The body of ore in this chamber is about 15 ft. wide and of a high grade.

Beecher Cons.—Work in the mines belonging to this Co. is progressing as usual and are shipping 25 tons of first-class ore to the mill daily. Ahout 200 tons of second-class ore is piled up on the dumps ready for shipment.

O. H. Treasure.—The mine generally is looking well. Ore has beeu struck in the shaft below the lower tunnel. The Wheeler tunnel is being driven ahead in the same spar vein.

Silver Wave.—In the Boswell works some ore of fair grade has been struck.

Noonday.—A large body of good grade ore has been disclosed in the new shaft.

Mammoth.—The ore in this mine has improved since our last Review in quality, and the mine is looking well.

Copper Glance.—Ore of good qnality continues to be extracted from both the northwest drift and the north shaft.

Outside Dist.—Robinson.—The mines are improving in value. The furnace is expected to start up soon on ores from the mines belonging to the Canton Co.

The mines in the new strike are being rapidly developed. The Troy, on the same lead of the Hayes, has struck good ore in the shaft at a depth of 12 ft.

Tho Emma is improving in qnality and qnantity of its ore.

Review.—Schell Creek *Prospect*, Sept. 28: McMahon.—Work has been prosecuted with unusnal vigor, extracting ore of fine quality. We heard yesterday that a fine body of ore had been struck in the shaft, at a depth of about 40 ft.

Jupiter.—Owners constantly at work, sinking shaft and running tunnel; the former is down 40 ft. in quartz; the latter is in between 30 and 40 ft. in ore.

Tehama.—There are about 50 men employed in extracting ore. They have out several hnndred tons ready to be crushed, when the mill starts, that will work np in the hundreds. The tunnel is in over 300 ft.; they struck qnartz at a distance of 300 ft.

Albert.—Working a large force; running a tunnel in 104 ft. A cut was run, in which a body of rich ore has been struck.

Ruby Hill Dist.—Birch.—Working every day; ore of fine qnality is heing taken out, of which there is about 300 tons on dump. The 5-stamp mill at Rubyville is crushing the ore fast.

Tammien.—Shaft down 47 ft. At bottom of shaft is a drift running in a Southerly direction which is iu 35 ft. in splendid looking quartz.

Monitor.—Shaft down 37 ft. in quartz; indications of striking the ledge when sunk deeper. There are several tons of ore on dump.

Phoenix.—Working every day takiug out ore of fine qnality.

Hunter Dist.—The Nebraska has a tunnel in 40 ft. in fine carbonate ore showing a ledge 4 ft. wide. Some of the ore assays as high as $850 in silver, to the ton. The owners propose running the tunnel some 40 ft. further and then sink on the ledge. There is about 80 tons of ore on dump. Tho Arizona has a shaft down 45 ft., showing a ledge at the bottom for a width of 5 ft. There is a drift being run from the shaft in a south-easterly direction which is in about 25 ft., showing ore of very high grade. There is about 150 tons of ore on dump which will average $70 in silver, to the ton. We visited Eagan cañon and the mine. There are two drifts from this level, one running East abont 200 ft., and one West some 300 ft., in both of which fine ore can be seen. The shaft has heen newly timbered and made perfectly safe. There are two new pumps to be placed in position for the purpose of pumping the water from the bottom of the shaft (which ie 420 ft. deep,) and will be ready for their work in a week or so.

Arizona.

Items.—Prescott *Miner*, Sept. 21: Several ounces of gold dust were brought to towu this week, from Lyux, Hassayampa and other auriferous crecks.

The arastras at Weaver are running; rock paying over $100 to the ton.

R. W. Groom has discovered a very rich silver lode, near Camp Beale Springs, Mohave couuty. The ore is chloride, easily workod and very rich.

Colorado.

California Gold.—Central *Register*, Sept 25: The ore of Henderson & Dyer assays $1,400 per ton.

The Homestake lode, on Silver creek, has been sold for $25,000. Within the last ten days several discoveries have been made that are said to be as good if not better than the Homestake. The main shaft on the Printer Boy at 285 ft., has better defined wall rocks and a wider crevice of paying ore than has hitherto been found in the mine.

Our placer mines have been doing unusually well since spring opened. Myer & Wells are taking out from $20 to $50 a day to the man. Along the gulch 5 Cos. are working and are doing well.

De Guard & Weston, in Colorado Gulch, have been in excellent pay the entire summer.

Frying Pan Gulch has been opened in a new place and good pay found by Stillings & Emory.

Thatcher, Standley & Co., shipped yesterday 600 ozs. of gold bullion, and this morning 200 more. The total shipment of the county is upward of $135,000 per month.

Bullion.—Colorado *Miner*, Sep 29: The Stewart Silver Reducing Co. have shipped since their last report, 10 bars of bullion and one of lead. Total valne $5,849.20.

The Robinson Tunnel, Leavenworth Mt., is producing considerable ore. The Compass and Square, and Tunnel Lodes, Nos. 5 and 6, are doing well. The first class ore runs from 700 to 1,000 ozs, the second from 150 to 200 ozs.

E. F. Roberts is running a tunnel on Republican Mt., known as the Roberts Tunnel, to strike the Morse and Hicks lodes. He is working night and day, and at present is 200 ft. from the surface. Heretofore 4 ft. per week has been the average—last week 11 ft. was driven—the first lode will be cut in 15 or 20 ft.

The ore vein is increasing in both shafts on the Antelope.

Medley & Bennett are getting into good pay on the Phalen, Republican Mt.

The Seven-Thirty lode, Brown gulch, continues to pay handsomely. The first class ore runs 550 ozs.—second class 200 ozs.

The Hugill, opposite Spanish Bar, is thought to be on the same vein as the Whale, but the ore is of a much higher grade than any ever yet found in that lode. The first-class ore is worth $500, second-class $200.

Lode No. 9, Marshall tunnel, continues to pan out handsomely. Two men yesterday broke two tons of ore.

Idaho.

Local Record—Golden Chariot.—Owyhee *Avalanche*, Sept. 28: At the south end of the 5th level, 354 ft. from the shaft, they have raised up some 15 ft., striking a vein fully 2 feet wide, it only having been about six inches in tho bottom of the level. It assays well. The 9th level north drift is in 20 ft. and it is daily expected to strike the ledge. The south drift in the same level is in 10 ft. without yet striking the ledge. The 8th level drift north is in 60 ft., leaving 45 ft. yet to run before reaching the Ellmore line. In this drift the ledge is 3½ ft. wide, bnt not far enongh from the breik to determine its richness. The winze is down 45 ft., showing a good vein from 18 to 24 inches wide. They are running a drift 40 ft. below the 8th level to intersect the winze, and here also the ore looks well.

Later.—Yesterday they cut the ledge in the 9th level drift south, and it looks well.

Ina Ellmore.—This mine is turning out between 15 and 20 tons of splendid high grade ore per day. We visited the mine this week, and found a winze going down rapidly for the 9th level some 70 ft. north of the main shaft. In the south drift stopes the ledge is from 4 to 5 ft. wide, and in the north stopes the ore is good, A crushing of 88 tons was had at tho Co.'s mill last week, out of which 10 bars of bullion, valued at $5,000, were forwarded to S. F. The 6th level dritt is being driven ahead and may be expected to strike rich ore any time. Stoping has been commenced between the 6th and 7th levels, with fair prospects.

War Eagle.—Work is being pushed forward with dispatch. The shaft is 90 feet below the 4th level and shows a 30-inch vein. It is expected that the shaft will be deep enough to start the 5th level during the coming week. The winze in the 4th level 80 ft. from the shaft is down 11 ft., showing a 4-ft. vein, all good milling ore similar to that in the shaft. The stopes in the 3d level carry a vein from 18 to 30 inches in width; 400 tons of ore in the last crushing from this portion of the vein averaged $35 per ton, and that being taken out is of the same grade of richness. We saw in the ore-house about 125 tons ready for the mill, and learn that there is already 160 tons on the mill-yard.

Union Foundry—Sacramento.—Messrs Root, Neilson & Co., proprietors of thie establishment, have work on hand as follows: A ten-stamp mill for Amador Conuty; contract for the Stanislans Conuty Court House, a snbstantial structure now being erected at Modeato. This with a number of small jobs and miscellaneous work makes business quite lively. A larger amount and variety of "agricultural work" was turned ont hy them this season than ever before, including Byron Jackson's self-feeding attachment for threshers, and Chnrchman's horse-powers, hoth California inventions. We are pleased to learn that the general machine and foundry husiness of Sacramento has been quite brisk and steady during the season.

Notes on the Reduction of Gold Ores.

BY H. A. THOMPSON, M. E., OF MELBOURNE.

(Continued.)

The Use of Amalgamated Copper Surfaces.

The copper platforms are tahles covered with eheete of copper coated with mercury, and part of the gold or amalgam in the eand and water from the hattery, passing over them, adheres to the mercury on the plate. These copper tahlee are nsed in the great majority of our crushing plants, as they are readily cleaned, and require little expenditure of lahor in attending to them. The strong hold they have ohtained here in practical working would seem to indicate that they are the hest known means of eaving the gold. But snch is far from heing the case, and the general favor in which they are held has arisen more from the small cost at which they are worked than from their intrinsic value, the former property heing rendered indispensable by the competition among the machine owners crushing for hire. When the gold or amalgam adheree to the plate, the eurface is roughened, and the sand eweeping rapidly over it, is apt to pick up minute particlee of amalgam and carry them away. This is eo well known that few crushers would care to leave the plates covered with amalgam while crushing an additional poor lot of quartz, although the poor sand will not carry off more amalgam than the rich; only in the former case more ie carried away than ie added; in the latter, the halance is on the other side. This loss may he easily teeted hy cleaning half of a copper plate well and equally charged with amalgam, and then passing waste sand over the other part, (in imitation of the conditione when the hattery is at work), for a few days, when it will he found that a coneiderable percentage of the amalgam has heen carried off. Without the nse of mercury in the coffers, these tahles would be very ineffective; and even with all the advantages that can be given to them, the writer has met with no instance where hlanket etrakes, placed at the end of coppered tahles, have not retained more or less gold, while the trials of copper plates at the end of well-laid and worked hlanket strakes have hardly shown a trace of gold. In one experiment of the latter kind, where the mercury was kept in a ripple hox at the hottom of the plates, and these brushed over with it at ehort intervals to keep them sensitive, the mercury was found to have lost some of the gold with which it was charged when the trial began, and no gold was found on the plates. As theee tahles were in such general nee, great care was exercised in testing their capabilities, but the result in every case indicated that they had heen far overrated.

The above views are supported by the experience of the California miners. Under the heading "Amalgamation with copper-plated platforms and other "copper fixinge," Küstel only thinke it neceesary to remark—"Very imperfect and mostly *abandoned*."

It would be well for our quartz crushers to weigh these facte, and if they prefer still to retain the copper tahles, at leaet let them not neglect to take the precaution of laying down hlanket strakes at the end of them.

Blanket Strakes

Have long heen used for the concentration of the gold in the South American minee, and eveu in the pyritous mines where the gold is so fine as to be rarely eeen with the naked eye, they trust entirely to fine crushing, and long rangea of atrakes. That this trust is not misplaced the trials made here, extending over a period of ten years, have proved. One amalgamating machine after another has succumbed hefore the efficiency of this simple plan, and it will in time even replace the copper plates.

The principle of working strakes ia to run the water and eaod over a long tahle, covered with woolen cloth, or tanned akins—the fall of the tahle, and the quantity of material running over it, heing ao arranged as to allow the heavier particles to he retained hy the rough surface, while the lighter material is swept away with the water. These tahles should be huilt on a atout well-braced frame, arranged ao that the inclination can be altered at pleasure to snit the varying quantity of water available. This frame is planked over with stout Scotch flooring, and then divided longitudinally into strakes from fifteen to eighteen inches wide, by strips of wood two inches wide, nailed down to the table. It ia usually made plain; hut a hetter plan is to break it every three feet, with a drop of two inches on to the next strake, as hy this meane the current of water is broken at every three feet, and its velocity equalized. Great care should he need in making the floor of the table amooth and level; and the hlankets, when laid down, should adhere closely to the wood, without wrinkling. In South America, tanned akins, cut to the proper aize, are made nse of for covering the strakes, those skins heing chosen which have fine short hair.

Trials made with aimilar skins prepared here, and cloee-wove green haize, showed no perceptible difference in the results, and therefore the latter article has heen nsed. The inclination of the table, and the amount of water and sand passing over it, ahould be ao proportioned just aa to keep the hlankets clear, and any wrinkle or inequality should cause them to choke with eand.

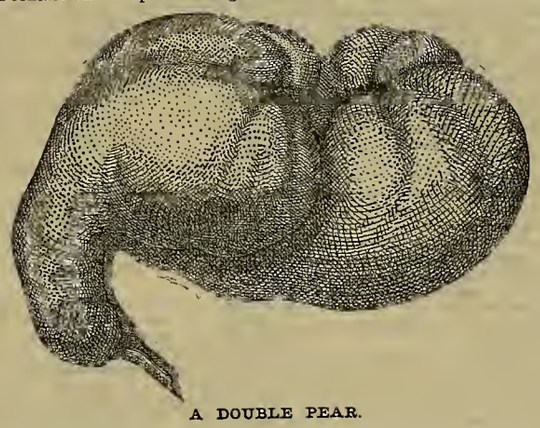
By this means every facility the system will allow ia given for the gold, and other metals or ores, to he retained on the hlankets.

The width of table allowed may he from twelve to fifteen inchea per etamp-head, and the length from eighteen to thirty feet, this varying with the character of the gold, qnantity and qnality of water, etc. The same conditions muet regulate the inclination of the tahle; hut if there is sufficient water, a fall of one in sixteen is considered the hest working arrangement.

The freqnency with which the blankets are changed must also depend on the character of the material operated on. When thie is of the ordinary description, the upper row may be changed every hour, the second row every two houre. On the remaining portion of the table, the hlankets on the npper half may he changed every six hours, those of the lower half every twelve hours. Some quartz is so charged with sulphides ae to require the blankets to be chenged much more frequently, or there is occasionally a carhonaceoue elate or clay mixed with it, which forme a slimy covering on the blankets, soon destroying their effectiveness as concentrators. In this respect, as in most othere connected with the extraction of gold, no fixed rule can he laid down; the working details mnst be modified to suit the conditions, and each estahlishment should ascertain the beet arrangement for the material they have to treat, not copy their neighhors plans, whether euitable or otherwise.

When the hlankets are removed from the tahle they are washed in a cistern, aud the sand thus accumnlated should he harreled to extract the free gold. The harrels are hest made of cast iron, and may he ahont four feet long hy two feet in diameter. This size will take a charge of from eight to ten cwt. of sand, and from two hundred to three hundred ponnds of mercury, the quantity of the latter depending in part on the amount of gold expected; but it is better to have a large charge of mercury, there heing more chance of securing all the free gold, and less chance of loeing the mercury itself.

The barrel ehould he charged with *damp* sand, the mercnry added, aud then be set to work for eight hours, at the rate of from fourteen to sixteen revolutions per minute. The mercury will hreak up and be distributed through the sand in minnte globules, thus hringing it in contact with the particles of gold.



A DOUBLE PEAR.

The barrel should then he filled up with hot water, and worked for eome four hours more, the epeed heing reduced tc five or six revolutions per minute, for the purpose of collecting the mercury again.

When the process is finished the mercury is first drawn off, and the contents of the barrel are then emptied into a cistern. A large proportion of hroken mercnry and amalgam will still remain in the sand, and the whole should therefore be passed through some good concentrating machine to eeparate the mercury and amalgam. On some works pieces of iron are mixed with the sand, or an iron roller is placed inside the harrel for the purpose of grinding the sand finer, but the amount of benefit to be derived from this will depend on the character of the sand. Where this contains a large percentage of the sulphides, the ruhbing or grinding action assists them to sicken the mercury and amalgam, breaking these up, aud rendering it difficult to collect them together again, when a large proportion is lost. Casea have occurred where half the mercury uaed has been lost from this canse, and no donht a large proportion of the gold was lost at the aame time. Various means have been used to restore this aickened mercury, sulphuric acid and iron filings, cyanide of potassium, and aodium amalgam; and when there is any auspicion of the mercury in the harrel heing effected, it ahould be examined, and, if necessary, some one of the above plans should be used to restore it. Where the hlanket eand is heavily charged with sulphidea, and the plant for extracting the pyritous gold haa been erected, it would he hetter to send the sand direct to the furnace, either without or with further concentration, according as the sands may he rich or otherwise.

The relative proportions of gold obtained in each part of the processes described will vary with its character; with coarse gold a very large portion will remain in the coffers, and when the gold is fine the proportion retained there decreases, while that ohtained outside the hattery increases. With quartz having the gold of average fineness, and where mercury is not used in the coffers, the latter may give sixty-six per cent., the ripple boxes twenty-three per cent., and the hlankets eleven per cent. of the total yield of gold.

The loss of mercury on a crushiug estahlishment is a matter of great importanoe, not from the value of the mercury only, hut because it ueually indicatee a corresponding loss of gold. The greater part of the mercury paesing away hae heen ground to a fine grey elime; and when placed under the microscope, it ie found to consist of iunumerahle minute globules of mercury, which will not coalesce. In many cases thie flonred mercury is heavily charged with gold, so much so as to be more correctly designated flonred amalgam; and sometimes, through ignorance or carelessnees, a considerable percentage of the gold ie lost in thie way. It will be seen, therefore, how neceseery it is that the loss of mercury from each part of the process should he ascertained weekly or fortnightly, the cause and form of thie loss determined, and a record kept of the results.

(To be continued.)

A Lusus Naturæ.

Nature is not always true to, or strictly observant of, general laws; hence we see in the animal kingdom occasional monstrosities, such as six-legged or douhle-headed calvee, chickens with four legs, fish with two heads and a great variety of theee strange shapes, qnite out of the ordinary course of nature; to say nothing of Siameee Twine or other wonderful conditions that occasionally in all ages have shown themselvee in the human family.

Nor is this disposition of nature to sport in her creations confined to the animal kingdom; for we often see double cherries, douhle apples, and double berries of several varieties; and in the instance illnstrated by our engraviug we have a douhle Bartlett pear, in which each part of the doublet seems to have made ahout an equal growth, which can seldom he said of any of the additional appendages in the case of animals.

The pear is a cnriosity in its way, and ae such we make a note of it, and present its form and size, that if it can be equalled or surpassed, that we may he ahle to obtain it for another illustration in the RURAL.

A New Source of Wealth.

We have been shown specimens of the Persian walnut, which the Meesrs. Rosse & Grant, nurserymen at Topeka, Kanaae, are introducing into that State. It is believed that the soil and climate of Kansaa are admirahly adapted to its growth. They planted about a bushel of nuta last year which are doing finely, and several harrels are now on their way for spring planting. In the Cashmere Valley, where they are extensively raised, there are four varieties—the kanak, the wantu, the denu and the kaghazi; the laet of which is the finest nut grown, and is the one heing introduced into Kansas. The nut ia ahout a third or half larger than the English walnut, of an elongated shape, very rich meat and shell nearly as thin as paper. It is not an unusual thing for a tree from eight to twelve years old to hear thirty thoueand (or 1,200 pounds) nuts, worth from thirty-five to fifty cents per pound. They are said to come into bearing early, and if the experiment is snccessful in Kaneas, an orchard of the Persian walnuts may prove far more profitahle than one either of the apple or pear.—*New England Farmer.*

Now if the Persian walnut is to become more profitahle in Kansas than the apple or pear, would it not be well to introdnce this walnut to a California aoil and climate. For the information of our readera we remark, that from a letter received from a private source, we learn that Rosse & Grant will have a small numher of reserved trees for aale next apring at $3 each and the nnts at ten cents each, of which ahout 20 per cent. of all received from Persia, fail to grow.

UTILIZING THE TIDES.—A New Haven, Conn., inventor has devoted his time recently to the aolution of the problem of utilizing the force of the tide. The result is a new tide wheel, which is soon to he set up in the Quinnepiac river. If the reault of the experiment equale hia expectatiou, he will have ohtained 7,000 horse power.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS.]

FOR WEEK ENDING SEPTEMBER 3n, 1872.*

CHURN.—Melville P. Callender, Astoria, Or.

WHEEL-PLOW.—William Mason, Monmouth, Oregon.

MODE OF ATTACHING AXLES TO HUBS.—Peter Bargion, Stockton, Cal., assignor to John Caine, same place; antedated August 29, 1872.

COMBINED LATCH AND LOCK.—Vitruvins Frazee, S. F. Cal., assignor to himself and William L. Bovyer, same place.

DOOR-LOCK.—Vitruviue Frazee, S. F., Cal., aeeignor of one-half of his right to William L. Bovyer, same place.

MACHINE FOR CUTTING VENEERS.—Elijah Stone Gilmore, S. F., Cal.

TEMPORARY FOLDING-DOOR.—William McMehou O'Brien, S. F., Cal.

STEM AND STANDARD FOR FRAGILE WARE.—Frederick A. Will, S. F., Cal.

FOR WEEK ENDING SEPTEMBER 10TH, 1872.

APPARATUS FOR MULTIPLYING POWER.—John R. Duhois, Virginia City, Nev.

ROLLER-SKATE.—John A. Todd, Sacramento, Cal.

BAGATELLE-TABLE.—William Evers, S. F., Cal.

CORSET.—Henry S. Flood, S. F., Cal.

GOVERNOR FOR STEAM-ENGINES.—Hugh H. Lamont, S. F., Cal., assignor to Joshua Hendy, same place.

HANGING-BRACKET.—Henry Polley, S. F., Cal., assignor of one-half of his right to Anthony Rosenfield, same place.

CURTAIN-FIXTURE.—Henry Polley, S. F., Cal., assignor to Henry Polley and Anthony Roseufield, same place.

VERTICAL TELEGRAPH-KEY.—Arthur B. Shearer, Davisville, Cal.

MACHINE FOR CRUSHING ANN STEMMING GRAPES. Collins Wadhams, Los Angelee, Cal.

*The patents are not ready for delivery by the Patent Office until some days afterward.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency

Grain Without Granaries.

In no other country than California do we find more grain produced than can be houeed. Nowhere else do people think it unnecessary to build granaries. It would really seem as though our farmers had adopted the very plan, in the management of their wheat and other grains, to make an immediate sale of their prodncts absolutely necessary, in order to save themeelves from lose.

Millions of bushele of wheat, hut no place to store it away from the impending autumnal rains. As a consequence many are almost forced to eell their crope at present low ratee or euffer a worse loss in the injury resulting from an entire lack of rain ahelter.

If farmers would make large cheap granaries by laying a foundation of acantling directly upon the ground and cover the same with a double thickness of inch thick boards, with the aides raised not to exceed two feet—aa beyond this the latteral or side pressure heoomes very great—and cover the same with a steep roof of boards securely nailed to rafters of scantling, a granary can be made at comparatively small expense that will contain and keep in perfect condition the entire product of any grain field in the State.

The farmer then can wait for the spring market, with a fair prospect of aelling at an advance over preaent pricea that will pay perhaps the entire cost of his granary, and leave it on his handa for another year, at no cost at all. It gives the grain speculator an enormous advantage over the producer when the former has ample storage room and the latter none, and this advantage is eure to tell upon the pockets of hoth, but in directly opposite ways. The truth can he told in few words—every farm should have a granary snfficient for the storage of its entire grain product.

AN ELOQUENT PASSAGE.—Man dies hnt nature is eternal. The seasons keep their appointed time; day returns with its golden splendor, and night with its eloquent mystery. The same stars that lit the ghastly hattle fields of Troy, rough heroes—which shone on the marble streets of Rome, and on the sad eyes of virgil sleepers in the living glow of inspiration—the watch fires of the angels which, through centnries of devastation and change, have still hurned on unceasingly, speak to ns as they did to Dante and Shakespeare and Milton of the divine glory the omnipotence, the everlasting heauty and love of God.

Useful Information.

Japanese Fireworks.

The Japanese have fireworks made expressly to be let off by daylight. A recent festival in Japan, at which a display of these ingenious toys were exhibited, is thus described in the Yokahama *Herald:* "The second day was occupied with exhibitions of the ingenious daylight fireworks, of the manufacture of which the Japanese appear to be sole masters. As usual, these consisted mostly of bombs, which, exploding high in the air, discharged sometimes various colored jets of smoke, and sometimes closely folded packages of wire and paper, which unfold themselves into parachutes of great bulk and symmetrical design. They were sometimes fish, which swam leisurely through the atmosphere to the ground; or snakes, which writhed themselves away over the tree tops; or great birds, that hovered kite-like and motionless for an incredibly long time. Occasionally they took the shape of cottages, temples, human beings, magnified crests of daimios, trees and flowers—almost anything that a lively imagination could suggest. The smoke figures, however, were the most amusing. One of the most frequently attempted was a cuttle-fish, with a body of thick, fuliginous black, and arms of lighter hues. Of course, the illusion was very brief, the wind not allowing the smoke to remain undisturbed for more than a few seconds; but while it lasted it was perfect."

How to Unite the Ends of Lead Pipe.—It sometimes happens that there is a necessity for uniting the ends of lead pipe when no plumber is at hand. The thing may readily be done as follows by almost any person in possession of a bit or auger of the requisite size: Whatever the size of the pipe may be, procure a block of hard wood, say four or five inches long, and four inches in diameter; bore a hole straight through the center, so nearly the size of the pipe that the block can be driven on the end of the pipe with a light hammer. If one has a set of auger-bits, it will not be difficult to select a bit of the proper size to make a water-tight fit. Let the block be driven clear on the pipe, so that the end of the pipe will be flush or even with the end of the block. Now place the two ends of the pipe together, and drive the block off one pipe on the other, until the joint will be at the middle of the block. If the hole in the block is made of the proper size, the block will fit so closely that the joint will be water-tight; and, if the ends of the pipe are dressed of true and square, the joint will be so strong that it will sustain the pressure of a head or column of water one hundred feet high. Iron pipe may be united in the same manner. Should the joint leak a trifle, let shingle nails be driven into the wood around around the pipe so as to press the timber firmly all around the pipe. This mode of joining pipe will be found very convenient.

Borate of Manganese.—The *New York Oil and Paint Reporter* says this new dryer "is attracting considerable attention among the makers of varnish. We are informed by one of the largest dealers in this article, that the proper method of using it is to moisten it well with part of the oil before putting it in the kettle, and boil as usual, stirring well, which will produce a superior light colored oil, having besides the advantage of leaving no sediment, which leaves it less expensive than the use of litharge, red lead, or the black oxide of manganese. The stock of borate of manganese in New York is small, and what little there is on the market is procured from the best laboratory in Germany. We are informed that 3¾ of a pound of borate of manganese is calculated to 100 gallons of linseed oil. The agents for this article guarantee it to be chemically pure, while the commercial borate of manganese has been found by analysis to be largely adulterated, even to the extent of 14 parts of borate of manganese to 86 parts of oxide of zinc.

A New Art.—What may truly be called a useful art — as well as one of positive commercial value—is a process discovered by a French chemist of permanently staining wood. It consists simply in plunging the material into two baths, the first consisting of iodate of potassium, and the second of bichloride of mercury. The wood is left in the first bath for several hours, and then placed in the second, where it receives a beautiful rose color. When dried in the air the substance is varnished. The baths may be used a great number of times without renewal, thus rendering the process one of peculiar economy. Another advantage characterizing this process is the important one that, by it the wood thus treated becomes colored almost immediately.

Proper Mode of Extinguishing Kerosene Lamps.—Explosions of kerosene lamps are frequently produced in the attempt to extinguish them by blowing down the chimney. This is a very dangerous practice, and should always be avoided. The desired result will be accomplished much more certainly and safely by giving a sharp and rather prolonged puff exactly at right angles to the top of the chimney. The draft thus created draws the flame away from the wick, when the carbonic acid immediately below the departing flame also extinguishes the red-hot charred end of the wick.

About Lightning Rods.

A discharge of lightning has a fixed destination; it occurs because of the neighboring position of two bodies which are oppositely electrified, and its course lies between them. It invariably selects the shortest attainable path upon the best conducting matter present. It is, perhaps, made up of the electricity of

A Cloud Thousands of Acres in Extent.

The entire contents of a building constitute but an insignificant fraction of the mass of matter affected by the electrical disturbance and contributing to the discharge. So far, therefore, as regards by far the larger portion of the discharge, the building is merely an incident in its path, and the function of the lightning-rod is simply to present a superior line of conducting matter in all directions.

The Ground Connection

Of the rod must be with the best conducting material which may be present. If it is a gas or water main, with that; if a stream of water, with that; if merely moist earth, then with that. The terminations of the rod must penetrate the earth below the building, just as they must project above the building, so that the rod may be ready to receive the lightning from whatever quarter it may come, and to carry it off to whatever direction it may tend.

A portion of the discharge is required to restore the equilibrium of the building itself, which, in common with all other matter in the vicinity, is in a state of electrical excitement induced by the proximate thunder-cloud. It is therefore essential that the lightning-rod should be most intimately

Connected With all Parts of the Building,

And especially with considerable masses or lines of metal (such as line shafting in mills, or gas, water or steam pipes) about the building, so that the electricity required to restore its equilibrium may be taken from or communicated to it in so many different places at the same time, and in such small quantities as to be nowhere sufficient to produce any mechanical disruptive effects.

The Conducting Capacity of a Rod

Depends upon the extent of its solid cross-section. Increasing its surface by flattening it out increases, if anything, the resistance which it opposes to electricity in motion. Rods made of twisted, corrugated or tubular sheet metal are also inferior to a solid bar, because they are less substantial and less capable of durable application.—*Van Nostrand.*

How it Feels to be Blown Up.—A survivor of the recent disaster to the tug-boat *McDonald*, on the Mississippi, thus tells the story of his experience: I was awakened from sleep by a heavy concussion, followed immediately afterward by a second and heavier one. Everything seemed to give away. There was a rush of hot air, and I found myself going through the air. Something struck me in the side and broke my ribs. I knew in a minute what was the matter, and I had all my senses about me. It seemed to me that I went up a frightful distance. How far, of course, I cannot tell. I left the hot air that started with me, and struck a cooler current. I went up head first, and, as I stopped, turned over and came down head first. The thought passed through my mind that this was unfortunate, for I might strike a piece of the wreck and injure myself. Just then a stick struck me and whirled me over so that I struck the water feet first. The blow left a mark on my right leg about eight inches long, and crippled it so that I could not use it. I took in a full breath of air as I touched the water, and soon began to rise. The thought struck me; what if I came down just in time to be hit by a falling timber? As I came up I thrust up my head to protect it, and caught it on a piece of the roof, cutting it somewhat. My theory is that it was a part of the roof over me. I had followed it up and beat it coming up. I looked round and saw the wreck had already sunk. The deck seemed to be attached in some way to the wreck, for I floated away from it, and began to look around for something to cling to. I found a mass of timber, and was soon after picked up by some men in a skiff.

To Bleach Linseed Oil.—Put in a glass jar some *bona fide* new linseed oil (from the oil pressing works—not the shops)—pressed from fine Eastern seed, in the sunlight or on the top of the house—with a piece of sheet lead (scraped bright) inserted part in the oil and part in the atmosphere of the jar. Cover over with glass the mouth, so as to admit air and light freely to circulate, but not the rain to enter. In a few weeks the oil bleaches, and to the lead between wind and water a mass of mucous attaches itself, which is withdrawn by gently taking out the lead, re-scraping, and again inserting until the oil becomes of the lightest tint.

Glazing for Frescoes or Casks. — Mixed with Benzole or Canada balsam, parafine is said to be superior to soluble glass for glazing over frescoes. By covering the interior of wine casks with a thin film of pure white parafine when in a melted state, the wine is prevented from spoiling or evaporating, as it will otherwise do through the wood.

Vermillion Paint.—The tendency of paint made from vermillion (cinnabar or sulphide of mercury,) when mixed with white lead, to turn black or brown in a short time may be obviated by mixing with the dry paint, before adding the oil, one eighth of its weight of flour of sulphur.

Good Health.

Great Eaters.

Great eaters never live long. A voracious appetite, so far from being a sign of health, is a certain indication of disease. Some dyspeptics are always hungry; feel best when they are eating, but as soon as they have eaten they endure torments, so distressing in their nature as to make the unhappy victim wish for death. The appetite of health is that which inclines to eat moderately, when eating time comes, and which, when satisfied, leaves no unpleasant reminders. Multitudes measure their health by the amount they can eat; and of any ten persons, nine are gratified at an increase of weight, as if mere bulk were an index of proportion, decisive proof of existing disease; showing that the absorbents of the system are too weak to discharge their duty; and the tendency to fatness, to obesity, increases, until existence is a burden, and sudden death closes the history. Particular inquiry will almost unvaryingly elicit the fact, that a fat person, however rubicund and jolly, is never well; and yet they are envied.

While great eaters never live to an old age, and are never, for a single day, without some "symptoms," some feeling sufficiently disagreeable to attract the mind's attention unpleasantly, small eaters—those who eat regularly of plain food—usually have no "spare flesh," are wiry and enduring, and live to an active old age. Remarkable exemplifications of these statements are found in the lives of centenarians of a past age. Galen, one of the most distinguished physicians among the ancients, lived very sparingly after the age of twenty-eight, and died in his hundredth and fortieth year. Kentiger, who never tasted spirits or wine, and worked hard all his life, reached a hundred and eighty-five years. Jenkins, a poor Yorkshire fisherman, who lived on the coarsest diet, was one hundred and sixty-nine years old when he died. Old Parr lived to a hundred and fifty-three; his diet being milk, cheese, whey, small beer, and coarse bread. The favorite diet of Henry Francisco, who lived to one hundred and forty, was tea, bread and butter, and baked apples. Ephraim Pratt, of Shutsbury, Mass., who died at the age of one hundred and seventeen, lived chiefly on milk, and even that in small quantity; his son Michael, by similar means, lived to be one hundred and three years old. Father Cull, a Methodist clergyman, died last year at the age of one hundred and five, the main diet of his life having been salted swine's flesh (hacou) and bread made of Indian meal.

From these statements, nine general readers out of ten will jump to the conclusion that milk is "healthy," as are baked apples and bacon. These conclusions do not legitimately follow. The only inference that can be safely drawn, is from the only fact running through all these cases, that plain food and a life of steady labor tend to a great age. As to the healthfulness and life-protecting qualities of any article of diet named, nothing can be inferred, for no two of the men lived on the same kind of food; all that can be rationally and safely said is, either that they lived so long in spite of the quality of the food they ate, or that their instinct called for a particular kind of food; and the gratification of that instinct, instead of its perversion, with a life of steady labor, directly caused healthfulness and great length of days. We must not expect to live long by doing *any one thing* which an old man did, and omit all others, but by doing *all* he did, that is, work steadily, as well as eat mainly a particular dish.

Care of Infants.

One-third of all the children born die before they are two years old, and three-fourths of these perish unnecessarily—perish as a consequences of the neglect or ignorance of mothers. Most infants are physiced and fed to death. No medicine whatever, not the modest "catnip tea," should be given to an infant without the direction of the family physician.

As to food, the practice is, the moment an infant is noticed to cry, it is fed; the result is that in less than a week the little thing cries oftener from colic than from hunger, which may often be known by its vomiting soon after it is fed, or by its refusing to take food; the great, the essential point, is to feed all children at regular intervals; from the neglect of this, infants are made dyspeptic before they are a month old, and between alternate feeding and physicing, they go off in convulsions, water on the brain, or diarrhœa. Notice at what intervals food is necessary, and feed only at such times, these being greater as the child gets older; next, keep the child abundantly warm; keep it constantly clean; let it be in the open air every day, and never allow it to be showered or bathed in cold water.

Zinc Fumes on Health.—The action of zinc fumes upon the bones of the human system appears to be analagous to that of phosphorus. Dr. Robertson, in *Dental Cosmos*, gives an account of the destruction of a considerable portion of the jaw bone of a patient who had been poisoned by the fumes of zinc. The man was a brass founder, and in pouring the alloy of copper and zinc, the fumes of the latter were abundantly thrown off.

Pine-Trees as Medical Agents.

Although some forests are regarded as sources of malaria, and oak-trees and hazel-bushes have been counted insalubrious in Europe, like the tamarind in the East, yet the air of the pine forest appears always grateful to the lungs, and has been considered wholesome, although of its absolute curative influence there is little evidence; and indeed it must be difficult to procure such.

The idea of pine-trees exercising a balmy influence is a very ancient one. Pliny considered that the air of pine forests was more useful in asthmatic difficulties than the voyage to Egypt recommended in such cases in those days.

But besides merely inhaling the air of pine forests, people have made much use of the pine in baths—vapor baths and inhalations. Even this is not entirely modern; for the ancients recommended the internal use of decoctions of strobili and of pine-tops, and thought pine-nuts very useful in diseases of the chest; and at a modern time, besides the use of internal drinks made from the spruce and the tar-water so long in vogue, we had inhalations of tar and of various resins. The ancients recommended in gout baths of water in which cedar wood had been boiled; but the use of the pine extract bath is quite modern. It has spread rapidly, and is in use at Gleiswelier, Eisnach, Rehburg, and Liebenstein, in Germany. These aromatic extracts are procured from various pines, as from Norway spruce, Scotch fir, Silver fir, Bordeaux pine, the Weymouth pine, also from the common larch, and, most fragrant of all, the mountain pine. The commonest way of making the bath is by adding to common water a certain quantity of the decoction got by passing steam through the young pine knots.

Influence of Rheumatism on Character.

In a translation of Dr. Faure's article on this subject (*Archives Generales*, Sept. 14, 1871), by Dr. S. G. Webber, of Boston, Mass., in the *Journal of Psychological Medicine*, it is shown that rheumatism is manifested under such variable forms that one may inquire, on meeting anything unusual in a patient subject to its attacks, whether rheumatism may not be concerned therein. Why may it not attack the organs of the cerebral functions on which character depends, as well as the heart, etc.?

A man who is subject to rheumatism will very often state that he has moments of despondency without cause, of inquietude, of forlornness, inexplicable to himself. Then he is discouraged without cause, and sees everything in the shade; that which ought scarcely to be the object of slight care becomes the cause of a cruel torment; he is without force, his thoughts can be fixed on nothing, all intellectual work is impossible; if he wishes to solve a problem, he soon experiences fatigue and heaviness of his head, which often turns into a violent headache; then his sensations are altered, his affections cease, he is indifferent to everything; that which has the most right or power over his mind, remembrances which are most dear or most painful, have no interest for him. His character has changed. He is conscious of his condition, and can for a few minutes rouse himself out of it. A crisis may follow, his head is congested, he feels quite giddy. Finally, all these symptoms disappear, and his mind recovers its tone and clearness. The attacks vary much with individual disposition.

Muscular Expression.

In an admirable chapter on the relations of the mind to the body, Professor Maudsley says: Those who would degrade the body in order, as they imagine, to exalt the mind, should consider more deeply than they do the importance of our muscular expression of feeling. The manifold shades and kinds of expression which the lips present, their gibes, gambols, and flashes of merriment; the quick language of a quivering nostril; the varied waves and ripples of emotion which play on the human countenance, with the spasms of passion that disfigure it—all which we take such pains to embody in art, are simply effects of muscular action. When the eye is turned upward in rapt devotion, in the ecstacy of supplication, it is for the same reason as it is rolled upward in fainting, in sleep, in the agony of death; it is an involuntary act of the oblique muscles when the straight muscles cease to act on the eyeball. We perceive, then, in the study of muscular action, the reason why man looks up to heaven in prayer, and why he has placed there the power "whence cometh his help." A simple property of the body, as Sir Charles Bell observes—the fact that the eye in supplication takes what is its natural position when not acted on by the will—has influenced our conceptions of heaven, our religious observances, and the habitual expression of our highest feelings.—*Scribner.*

Cure for a Cold.—A method for curing coryza (cold in the head) with rapidity, consists in inhaling the tincture of iodine, a phial of which is to be held in the hand, and placed under the nose. The warmth of the hand causes the vaporization of the tincture. The inhalations are to be made every three minutes, and soon all symptoms of the malady will disappear.

MINING AND SCIENTIFIC PRESS

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San Francisco:

Saturday Morning, Oct 12, 1872.

Gold and Legal Tender Rates.

SAN FRANCISCO, Thursday, Oct. 10, 1872.—Legal Tenders buying, 88⅛; selling, 89¼. Gold in New York to-day, 116.

Table of Contents.

ILLUSTRATIONS.—Lamm's Fireless Locomotive, 225. A Double Pair, 230. Abestos Roofing; The Twin Nozzle; Magnetic Lock, 233.
EDITORIALS.—Steam Plowing, 225. The Use of Pulverized Fuel; Academy of Sciences, 232. Bargion's Improved Hub and Axle; University of California, 233.
MECHANICAL PROGRESS.—How Nickel Plating is Done; The Steam Engine and Civilization; High and Low Steem; Photographing the Pulse, 227.
SCIENTIFIC PROGRESS.—Periodicty of Storms; Music as an Explosive Agent; The Range of Sound in Moving Water; A Pyrometric Paint; Photographing the Eye and Ear; 227.
MINING SUMMARY from various counties in California, Nevada, Arizona, Colorado, and Idaho; Mining Shareholders' Directory, 228-9. Market Reports, 236.
USEFUL INFORMATION.—Japaneso Fireworks; Borate of Mangenese; A New Art; Proper Mode of Extinguishing Kerosene Lamps; About Lightning Rods; To Bleach Linseed Oil; Glazing for Frescoes or Casks; Vermillion Paint, 231.
GOOD HEALTH.—Great Eaters; Care of Infants; Zinc Fumes on Health; Pine-Trees as Medical Agents; Influence of Rheumatism on Character; Muscular Expression, 231.

British Patents for Pacific Coast Inventors.

Following is a list of inventions patented or protected by Provisional Specificatione in England by Inventore in the Pacific States and Territoriee, from Dec. 1et, 1871, to June 30th, 1872.

APPLYING POWER TO THE WHEELS OF TRACTION ENGINES, PORTABLE ENGINES, ETC.—W. W. Hanscom, S. F., Cal., January 10th, 1872.

CAR-COUPLING.—F. F. Taylor and H. W. Larkin, S. F., Cal., Feb. 19th, 1872.

MANUFACTURE OF ARTIFICIAL STONE.—E. L. Ransome, S. F., Cal., March 22nd, 1872.

DRYING LEAF TOBACCO, ETC.—J. D. Culp, Gilroy, Cal., May 6th, 1872.

BEDS OF RAILROADS.—Boone & Herman, S. F., Cal., May 24th, 1872.

VALLEJO TRAMWAY—The tramway of the Vallejo Tunnel Company at Little Cottonwood ie reported to be working very euccesefully. It ie one of Hallidie'e patents and ie about 2,400 feet long, eupported on thirteen etatione. It will deliver abont 100 tons in eix hours. The fall in the entire distance ie about 600 feet, and the etations about 200 feet apart. We gave a detailed description of thie apparatue with an illnstration eome time eince and are pleased to know that Mr. Hallidie hae been eucceesful in ite introdnction. In thie instance the wire is elevated about 40 feet so that the tramway can be worked all winter long eaeily.

THE availability of corn cobs ae a source of supply for potash, hae been euggested. It is estimated that nearly 52,000 tons of carbonate or potassa may be annnally obtained from this source, to eay nothing of a cousiderable quautity of chloride of potaesium.

A VEIN OF COAL hae been etrnck at Vancouver Ieland that is equal in quality to the anthracite coal of Queon Cbarlotte Ieland.

The Use of Pulverized Fuel.

Having been invited hy Mr. George D. Wyman, the agent of Messrs. Whelpley & Storer, in this city, to examine their method of applying pnlverized fuel to steam generation, we this week visited the works and were mnch impreseed with the simplicity and apparent precticability of the process. Tbis method, com monly known as the Whelpley & Storer process, consiste in pulverizing the coal to an extreme degree of fineneee, and blowing it into tbe fire-box of the boiler, where it is ignited in the eir, which floats it.

The principles npon which the proccse is hased heve long been acknowledged to be theoretically correct by eome eminent engincers, yet es there hae heen heretofore no practical metbod for applying them economicelly and successfnlly, tbe subject hes not received the attention it deeerved. It has remained for the above-named parties to overcome the difficultiee, and render availelhe and precticahle for daily use, these principles, which can be easily understood by the following simple illustration and theory: A pound of coal will give an equal emount of heat whetber burned quickly or slowly, hut the temperature of the flame and gesee depends greetly upon the manner of combustion. It is a fact familiar to all, that a block of wood may consume slowly and but slightly increase the temperatnre of the fire-place; while if the hlock be made into shevings, the burning will be extremely rapid, with corresponding increase of temperature. The amount of heat in esch instance heing the same, but in the one, being generated and mede effective in much leee time than in the other.

It is en admitted fact that the present way of firing boilere is exceedingly wastefnl, in meny cases, nearly if not helf the value of the coel escaping from the stack in smoke or gas, owing to the partial and imperfect combustion; any method of firing therefore, which shall secure complete combustion, and et a right point in the furnace, at comparatively slight expense, ie a benefit end an economy, and if in addition a cheaper quality of coal can be mede to produce the same results, the benefit and economy are still further increased. Thie lest commnnication is an important one, especielly for the reeidents of thie coaet where coal ie so expensive.

The pnlverizer, (deecribed in the MINING AND SCIENTIFIO PRESS of May 25tb, 1872,) which accomplishee these reeulte, consiste of three parte or elements. The first ie an automatic feed which furnishee a reguler and constant snpply of one material to he pnlverized, and can be regulated to feed five or five hundred pounds per honr. The second ie a eeries of paddle-wheels revolving in an iron drum or cylinder, and generating vorticee of air which reduce the material to dust by ceusing a mutual attrition of tbe particlee. The tbird ie the fan hlower, which is in the continuation of the pulverizing cylinder, and separated from the pulverizing chamber by a diaphragm with central opening, through which the dnst is drawn from it by exhaust as fast as it is prodnced and immediately blown into the fire box, each particle being surrounded by enongh air to ensure ite complete combuetion. Ignition takee place immediately, and the boiler is enveloped for its entire length, by a contiuuous sheet of flame.

Theee machinee are now in nse in many places in the Eastern States, both for pulverizing fuel and otber purpoees. Of uo lees value ie the application of pulverizing fuel for pnddling and heating iron, where a two-fold economy is effected. Firet, the large saving in fnel, said to be about twenty-five per cent., and a saving in iron amounting to about ten per cent. in each operation. The economy in iron is caused by the perfect control nnder which the flame is held. It can be regulated at will by the operator, and made reducing, neutral or oxidizing by admitting a larger or smaller quantity of air through the air port on the pulverizer. A great advantage in thie system is that of being able to etop a fire completely in an instant, and to renew its force ae quickly, and aleo to regulate it at will by the mere motion of a lever.

The machine ie placed in front of the fire box of the boiler, aud beside it is the automatic feed box. The coal is placed in this feed box, and is drawn by a screw, so arranged as to regulate tho snpply as desired, into the pulverizer; from theuce it passee by meane of a tube into the fire box of the boiler. Tbe whole arrangement ie very simple.

On our coast where coal ie eo high, and where in many manufacturing establishmente, succese or failure depends a great deal on economy of fuel, we cennot donbt but that mennfactnrers will look upon tbis invention with the utmost interest. The fect that the commonest clase of coal cen be nsed will cauee them tò do so; for with coal costing $7.50 and $8.00 per ton ae it does now, it is an unimportant item, as the eize of the coal makes no difference, or if anything, small coal is preferable; "screenings" can be used. The principle being a good one, the merit of the machine itself only rests in its being the beet means of applying it. Many prominent locomotive and naval engineere are confident that it ie only a qnestion of time, wheu their boilere ehall be fed with fuel by this simple and easily opereted machine. As it stends now in front of the boiler at their works, performing ite work thoroughly and in a steady menner, it ie metter of surprise thet it has not heretofore heen adopted. On steamhoets particularly, fewer men will need to be employed, firemeu being dispensed witb; tbere will be more room for cergo, less coal being necessary, and a machine feeds more regularly than a man probably could, while at the same time all the fuel is utilized and none allowed to escape.

We are pleased to learn of the succeeeful running of this machine, not only at the worke of Messrs. Whelpley & Storer, Main street, hetween Howerd and Folsom, but also at the iron works of Meeere. Hanscom & Co. At the letter plece, we understand systematio experiments will be made in order to get at the exect seving in fuel, etc., the results of which we will lay before our reeders when accomplished.

Academy of Sciences.

At the regular meeting of the California Academy of Sciencee, held on Monday evening, the following gentlemen were elected life members: Peter Donahue, H. L. Breed, J. C. Wilmerding, Wm. Myers and F. Openheim. Resident membere elected were Messrs T. J. Edmondson, Henry Andrews, L. H. Bonnestell, W. P. Pritchard and Mr. Rulofson. A large number of namee were proposed to be acted upon at next meeting.

Donations.

Among the donations to the Academy were a piece of carhonate of meguesia, of which there is said to be an extensive deposit in a locality nnknown to the donor, Mr. Hanke. The same gentleman elso presented a piece of *itacolumite* which ie alweys associated with diamonde. Thie specimen came from Nortb Carolina. Prof. Davidson presented a very fine specimen of wolfanite in behalf of Knapp & Stevens. It came from the Empire mine, Lucin District, Utah. Among the otber donations, was some skeins of Japanese silk; specimens of argentiferons galena with pecnliarly eituated sulphnrets of iron on them, from the White Shiloh mine, Bettle Mountain; a foeeil ammonite from near Folsom and a plaeter cast off another of the eame epecies bnt of great eize, the largest ever fonnd in the State; specimens of ore containing native eilver; cocoanut shell and husk from north side of Oonalaska illustrating, direction of ocean currente, preeented by W. H. Dall, Assistant in U. S. Coaet Survey; fine Imperiel Photographs of Professor Agaseiz from Watkin's Art Gallery; specimene of peetiferons insects injurioue to fruit treee, found on apple, pear and peach trees; specimene from the

Arizona Diamond Fields

Of eand, gravel, and mineral formation. Gen. Hewson presented these in behalf of Wm. M. Lent, and they were brought to tbe city by one of the original exploring party—not thie laet expedition. On examination a number of rubies were seen in the eand. Gen. Hewson had detected diamonde with the microscope. He informed ue tbat he would take a number of them out of the sand and show tbem at the next meeting.

Dr. Dall presented a communication on a new speciee of Mollusca fouud in the Aleutian Islands. The shells found there show the peculiarities of those found at the Straits of Magellan. A paper wae read on a

New Species of Balænoptera

By Capt, C. M. Scammon. Description: Above, dull black; body, pectoral and caudal fins, wbite below, with a white band across the npper eurface of the pectorals; gular folds, seventy in number, the interspaces having a pinkish cast; head, pointed; dorsal fin, small; genitallia, openiug below the anterior edge of the dorsal fin; boleen, pure white; carnival on each side, 270 in numher. Total length of animal twenty-seven feet; pectorals four feet long, thirteen inchee wide. Hight of dorsal, ten inches; breadth of flukes, from point to point, seven feet six inchee; width of lobes of the same, twenty-five inchee. Distribution from Mexico to Behring Strait, on tbe west coaet of America. The specimen from which thie description wae teken wes obtained in Admiralty Inlet, Washington Territory, Octoher, 1870. It wae a female, and contained a fœtus five feet long; thue oorrecting the error of whalers, who commonly regard this smell epecies as tbe young of the "finback," of the coest. In specific details, the speciee is nearly allied to the *B. rostrata*, as far as descriptions will admit of instituting a comparison. Captein Scammon has dedicated the species to Prof. George Davidson, United States Coest Survey, and President of the Acedemy, as a testimony of respect for his scientific attainments, and appreciation of his efforts to assist in the edvancement of the scientific interests of this coest. Captain Scammon is engeged in the publication of an importent and expensive work on the netural history of the Ceteceens and other merine enimals of the Western Coest of North America, with an eccount of the American whale fishery. This book will he illustrated with cnte and will be a valuable eddition to the worke of science.

Earthquake Disturbances.

Professor Davidson reedan interesting paper entitled a "Suggestiou of a Cosmical Cause for the Great Climatric Changes upon the Eerth." We will give tbis scientific treetise in another department of our peper next week. Tbe Professor called tbe etteution of the Academy to the earthqueke-wavee which recently occured, and which were felt at Honolulu, Astoria, San Francisco and Sen Diego. The first disturhence occurred on the 24th of August and contiuued three days. They were first felt on this coest et Astorie, then here, and then at San Diego. At Astoria the waves have to come over the har and np the river to reach the gauge; at San Diego the weves psss through sn extremely narrow entrance. At the Sendwich Islands the times of weve intervals were nearly the same as in San Francisco. They were felt there 2¾ hours before they were felt in Sen Frencisco, ellowing for difference in longitude; and four hours hefore they manifested themselves in San Diego. The hight and interval of weves wae illustrated by a diegram with notes taken by the observer at Fort Point. In August, 1872, the disturbence of the curve by earthquake-gauge was 1-12. First indication in Sen Diego sheets were at 6¼ P. M., Angust 23d, end lasted to 7½ A. M. on the 27th of same month; very faint towards the end. The indicetions at Astoria began at 4 P. M., Aug 23d, with less intensity tban at San Diego, end much less tban et Sen Francisco. At Honolulu the disturhance wes et 12·25 P. M., August 23d. Eerthqueke-waves were also felt here on the 16th and 17 of September. The time hetween the weve creete placee the locality of the disturbauce causing them, at great distence from here.

Professor Davidson had made a careful calculation from the ebove meutioned data and determines that the immediate locality of the disturhance wae in the vicinity of the island of Yesso, or one of the most soutbern of the Kurile ielands. The last steamer from Japan brought no news concerning any terrestrial disturbance there, but the Professor wae confident it was there.

Mr. R. E. C. Stearns read a written contribution entitled "A partial comparison of the

Conchological Fauna

Of portions of the Atlantic and Pacific Coaets of North America. The following is a synopsis: A distinguished feature in the Conchological fauna of that portion of the Pacifio Coast included hetween the Straits of Fuca and San Diego, aud which is called the California and Oregonian Zoölogical Province, when compared with the Atlantic Coast of North America, from the Arctic Seas to Georgia, ie the prepouderence in the former province over the latter of those forme of molluscan life included in the *Order Scutibranchiata*.

The total number of marine molluscen epecies and well-marked varieties, so far as known and determined, in the Californian and Oregonian Province, is in ronnd numbers 630, of which about 200 are Bivalves, and of the remaining 430, 123 are included witbin certain Scntihranchiate families. Of this 123, no less than 40 belong to the Chitonidæ and as mauy more to the Trochidæ.

Of tbe 247 marine gasteropode enumerated by the late Dr. Stimpson, in the Smithsonian Institute check-list, from the Arctic seas to Georgia, 32 only, or less than one-eighth, come within the order referred to; of thie number, 14 belong to the Trochidæ, 7 to the Chitonidæ, and not a eingle specimen of Haliotis bas been found as yet within tbe limits named, and only a eingle individual of very small size has as yet heen reported from any point on the Atlantic Coasts of the two Americas, and the solitary specimen referred to was dredged by Count Pourtalee in the Florida Gulf Stream a few yeare ago. When the shells of Florida are sufficiently investigated eo that a check-list may he made, it may effect this comparison somewhat, but other Scntihranchiate speciee may be found on this coast, so that it ie highly probable that the above comparison will remaiu substantially correct.

SANTA CRUZ AGRICULTURAL FAIR.—The Farmer's Club of Santa Cruz, hold their first fair, Thursday, Friday and Saturday of this week. We predict its management will be new and commendable in some of its features. Dr. E. S. Carr, Professor of Agriculture of the California State University, will deliver an able, practical and pleasing addrese we are quite eure. W. B. Ewer, A. M., from this office, will be preeent during the exhibition.

Abestos Roofing.

Eds. Press:—In your paper of Sept. 21st, page 184, you have an article "About Patent Roofing," which I see both yon and your correspondent, W. L. W., Napa City, feel the lack on this coast, of a good and cheap patent roofing. I have also felt the need of such an article, and in my desire to supply it, have sought among the many different styles now so largely advertised in the Eastern cities, and selected H. W. Johns' Asbestos Roofing, as best adapted to this coast; it also being the only one which is practically fire-proof.

It is largely in demand both in New York and Chicago, and is considered next, if not equal to tin; while it is put on at about one-half the cost. The roof when complete has the appearance of gutta-percha, and does not crack like

the asphaltum roofs. I have applied for the general agency for this coast, and at the same time ordered a supply of material shipped to San Francisco, and will soon be prepared to supply the trade, W. L. W., or any others who desire a first-class roof, at about the same price they are now paying for an inferior one.

I enclose you a circular describing the manner of putting the roofing on, and would call your attention to the representation on the last page, showing how the roofing is made and the material composed of. Hoping this will throw some light on the subject, I remain,

E. A. Edwards.

San Buena Ventura, Sept. 24, 1872.

We give place to the foregoing and have engraved a section of the "representation" alluded to as showing how the roofing is made that we may answer as well as we can, the inquiry of W. L. W., in a former number of the Press.

F—Asbestos-coated felt.

A A—Layers of water-proof composition.

C—Canvas.

M—Manilla lining.

The whole being one-tenth of an inch in thickness, the engraving being magnified to show the different layers. It is one of the many improved cheap roofing materials now so common at the East, and is considered second to none in effectiveness and durability.

Tunnel Claims.

The new United States Mining Law contains one section on tunnel claims, which is causing much dissatisfaction. We have already published this section in full with the rest of the law, and it is now pretty well known and understood. It provides that where a tunnel is run for the development of a new vein or lode, or for the discovery of mines, the owner thereof shall have the right of possession of all veins or lodes within three thousand feet from the face of said tunnel, or the line thereof, not previously known to exist, discovered in such tunnel, to the same extent as if discovered from the surface; and locations on the line of such tunnel of vein or lode not appearing on the surface, made by other parties after the commencement of the tunnel, and while the same is being prosecuted with vigilance, shall be invalid; but failure to prosecute the work on the tunnel for six months is considered as an abandonment of the right to all undiscovered veins on the line of said tunnel. This practically stops all prospecting in the vicinity of tunnel locations, and is causing much inconvenience among miners.

The Commissioner of the Land Office has recently written a letter on this subject, which determines a question of much interest, and which is as follows:

Dep't of Interior, Gen'l Land Office, Washington, D. C., Sept. 20, 1862.

Hon. J. B. Chaffee, M. C., Denver, Colorado Territory.—Sir: In response to your letter of the 13th instant, desiring the construction of this office of the clause in the Mining Act of May 10th, 1872, relative to tunnels, I have the honor to state that the interpretation uniformly given by this office to the fourth section of said statute may be found under the head of "tunnel rights," commencing on page eight of circular herewith dated June 10th, 1872, from which it will be perceived that the line of the tunnel is held to be the width thereof and no more, and that upon this line only, is prospecting for blind lodes prohibited while the tunnel is in progress, and that the right is granted to the tunnel owners to fifteen hundred feet of each blind lode, not previously known to exist which may be discovered in such tunnel, but that other parties are in no way debarred from prospecting for blind lodes or running tunnels so long as they keep without the line of the tunnel as herein defined; the said line being required by our regulations to be marked on the surface by stakes or monuments placed along the same from the face or point of commencement, to the terminus of the tunnel line aforesaid. When a lode is struck or discovered for the first time by running a tunnel, the tunnel owners have the option of recording their claim of fifteen hundred feet all on one side of the point of discovery or intersection, or partly upon one and partly upon the other side thereof, but in no case can they record a claim so as to absorb the actual or constructive possession of other parties on a lode which had been discovered and claimed outside the line of the tunnel before the discovery thereof in the tunnel. I am sir, very respectfully your obedient servant.

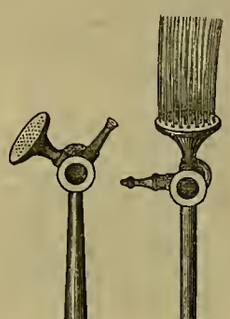
Willis Drummond, Commissioner.

The immediate result of the publication of the law was that in all new districts there is a rush to locate tunnel sites, and pre-empt in a manner the chances of discovery of veins for an indefinite period. A few tunnel companies can in this manner monopolize more ground than hundreds of miners. We have not the space to discuss all the provisions of this section, but are convinced from what we already know that it is an obnoxious one to miners and does not work well. It is to be feared that this tunnel question will cause much litigation before it can be remedied.

The "Twin" Hose Nozzle.

The accompanying cuts represent an article the use of which is quite general in England, and which is fast becoming popular in the Eastern States. It is now being introduced on the Pacific Slope and in view of the very gen-

Fig. I. *Fig. II.*



AN IMPROVED NOZZLE.

eral use of hose in this section it will doubtless ere long come into general use. The essential features of this nozzle are involved in the combination, on a single stopcock-barrel or cylinder, of a jet and sprinkler in such a manner as that when it is desired the discharge may be through either one or the other and is effected by rotating the barrel upon the plug so that the particular part is in a right line with the hand pipe.

A direct water-way is thus secured with no greater friction than in those of ordinary patterns. The inconvenience of screwing off or on of one jet or sprinkler to get a solid stream or a spray, is entirely avoided. The "Twin" is also a stopcock when turned so that neither the jet or sprinkler is in a right line with the hand pipe, which is the position shown in Fig. 1. Fig. 2 represents the sprinkler open; also the English style of hand-pipe which requires no coupling in order to attach to hose. There being no loose or detached pieces in this nozzle, the common occurrence in ordinary nozzles of losing either jet or sprinkler is avoided; though when necessary, for the purpose of cleaning, these pieces may be unscrewed. Convenient in their method and not more expensive than the common kind, we think their use must become general and do away with old-fashioned devices. The sole manufacturing agent in the United States is S. J. Wheeler, 315 State street, Chicago, and L. Walker, 312 Cal. street, is agent in San Francisco for the Pacific Coast. Address, New York, the Combination Rubber Company.

Oakland Farming, Horticultural and Industrial Club.—The next meeting takes place by adjournment on Monday evening, Oct. 14th. Dr. E. S. Carr, the President, will lecture, with experiments, upon a timely subject. Discussion is invited, verbally and by correspondence, on the planting of nut trees in Californuia—their profits, etc.

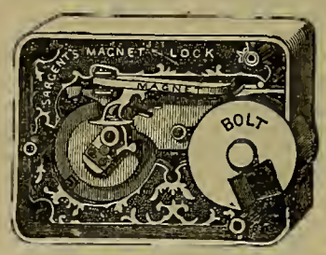
Agassiz.—Prof. Agassiz delivered a highly interesting lecture in Sacramento last week, in aid of the Sacramento Library Association.

Sargent & Greenleaf's Magnetic Lock.

The accompanying cut represents one of Sargent & Greenleaf's patent magnetic locks which are now used on Tilton & McFarland's and Diebold & McKenzie's safes. It consists of four Combination Wheels, all revolving on one stud. Each of these wheels has a single slot or notch in its edge, and when these are all brought into line the bolt may be thrown.

Over these wheels is a lever or dog, which, when they are all set right, falls into the slots, and releases the bolt. The lever does not rest its full weight on the wheels, nor is it brought to the wheels by a spring or cam, as in most other locks, but most of the weight is held off of them by means of a powerful magnet. Every time the knob is turned round, the magnet is separated from the lever, which, if the slots are all set tight, then drops into them; thus releasing the bolt. The operation of the magnet in this manner shuts off entirely the use of the Micrometer, an instrument sometimes applied to picking locks. In the Magnetic Lock the lever (or dog) is nearly (not quite) sustained by the attraction of the magnet, and never comes in full contact with them and the knob outside at the same time, except when in position to unlock. The arbors in these Locks do not pull out, or shove in, while operating the lock, nor is there any "dead hold" to which force can be applied to wrench off the knob when the Lock is in the locked position.

The Magnet Locks have taper shafts tapering



towards the inside, which are made in two parts, having a connection five-eighths of an inch in from the outside face of the safe door. The outside part is made of soft metal, while the remainder of the shaft is of hardened steel, so that in case of violence to pull out the arbor, it would yield at its point of connection, thus leaving the main part of the shaft, which cannot be driven in, beyond the reach of the burglar's tools. The two pin holes, indicated in the spindle, at the point of connection with the knob, are a means of protection against a "lock up," in case the knob is wrenched off by any means; in which case the latter can again be attached by inserting two pins at these points, when the lock will operate upon the numbers to which it is set.

This company also manufacture several other classes of locks. The drawer lock is a very neat and effective one and cannot easily be picked. These locks are now used by the United States Treasury Department. One kind is made so that the key cannot be withdrawn unless it is locked, thus providing against carelessness. The agent on this coast is James Stott, No. 1002 Market street in this city.

Bargion's Improved Hub and Axle.

A patent has recently been procured through this agency by Peter Bargion, which fills a want long felt, and which will most probably be generally adopted. It is an improvement in the manner of securing boxes in the hubs of wheels, and is more especially applicable to the cast-iron wheels used in gang and other plows, and reaping and mowing machines and all other agricultural machinery. There is also a device for preventing sand from working into the box and cutting it out.

In the hub of a wheel, such as is used in agricultural implements, a hole is bored out large enough to make a square channel at one side of the bore entirely through the hub. At about the middle of the bore is a short channel at right angles to the other channel and communicating with it. The box has a projecting flange or rim at one end, and also a lug projecting from it at a proper distance from the flanged end, to be turned into the short channel in the manner of forming a bayonet lock after the box has been slipped into the bore of the hub, the lug passing in through the long channel. A flange is also recessed opposite the long channel, and a wooden or other key confines the box in place, and prevents it from shifting.

On the axle a flange is made at the proper distance from the end of the journal to fit against the inner end of the box. This flange is large enough to fit in the recessed end of the box, and has its outer corner beveled off so as to exclude any sand or dirt which would otherwise get into the box. In order the better to protect the outer end of the box from dirt and sand a nut is employed, having a large beveled flange or head, which screws upon the outer end of the journal. By this means both ends are protected so that dirt and sand can not get in.

The object of this construction of the hub and providing it with a box is to save the wheel when the box is worn out, as all that it will be necessary to do will be to get a new box and the wheel will be ready for use again. At present in using agricultural implements the wheels have to be bushed repeatedly with Babbitt metal, occasioning loss of time and great inconvenience. By using this device the necessity of this will be entirely obviated, for as soon as the box wears out a new one can be procured. The box as above described is merely a cylindrical sleeve with channel, and it may be made by any blacksmith, though they will most probably be easily procured at trifling expense. This invention is also applicable to axles of wagons, etc., and with light hubs may be also used on buggies and carriages. Those desiring further particulars on the subject can address, Alex. Weed, 443 California St., S. F.

Agricultural College of the University of California.

LAYING OF THE CORNER STONE, AT BERKLEY, OCT. 9th.

From six to eight hundred of the earnest citizens of the State were present on this interesting occasion, including the Regents, the Faculty and students of the University. Governor Newton Booth presided. Music was furnished by the 14th Regiment band.

The College of Agriculture is one of the principal buildings designed for the University. Facing the bay and ocean, it is located on the left. The College of Letters, the next in order of construction, will occupy a central position.

The basement of the College of Agriculture commences some three feet below the surface of the ground, and is faced with unfinished granite—complete with the exception of the northeast corner where the ceremonies were had. The next story, just being commenced, is of brick, with corners, casings and a portion of the facings, of iron. The whole is bound together by a careful system of iron bars, introduced in its structure. Its frontage towards the bay is 150 feet, by 50 feet in depth.

The ceremonies of laying the corner stone were plain, brief and sensible. Bishop Kipp made the opening prayer and the benediction. Horatio Stebbins, D. D., gave the address. Gov. Booth led the ceremonies, assisted by David Farquaharson, Architect; J. W. Duncan, Superintendent; and A. G. Moulder, Secretary.

The oration was an able, brief, and pleasing one. Dr. Stebbins urged that the State should certainly provide for the higher wants of its community—the best means for education. He spoke eloquently of the beautiful site granted the University by the College of California.

Deposited Under the Stone.

A heremetically sealed, copper box, was deposited in a cavity beneath the corner stone, containing a parchment-scroll, upon which are inscribed the names of the Regents of the University of California, and of the officers of the Board, the names of the ex-Regents; of the names of the officers, Professors, and Instructors of the University, of the Architect, Builder and Superintendent of Construction, copies of the S. F., and Oakland daily papers, the Pacific Rural Press and the Mining and Scientific Press, of the Oct. 5th, 1872.

A sample of wheat grown in Sierra valley at the estimated height of 6,000 feet above the sea; coins and a photograph by Prof. Joseph Le Conte; and other appropriate articles.

A plain collation, with fruits, wine and lemonade, was provided in the basement of the building, and partaken of by a majority present. All seemed blessed with an "out-door" appetite.

The most gratifying feature of the occasion to us was the earnestness of good purpose which seemed to beam in the very faces of the Regents present and the goodly collection of leading and real intelligence loving people.

New Incorporations.

Prospect Hill S. M. Co.—Oct. 4. Location: Eureka District, Lander county, Nevada. Capital $2,000,000. Trustees—A. T. Belay, A. Luchman, A. Bocqueraz, A. G. Chanche and John Hahn.

Blossom Rock M. Co.—Oct. 4. Location: West Mountain M. District, Salt Lake county, Utah Territory. Capital $3,000,000. Trustees—P. Short, H. C. Bassett, John Woods, J. L. Hussey, James J. Whitney, William Lippy and James Wheadon.

Rogers G. M. Co.—Oct. 8. Location: Amador county, Cal. Capital, $12,000,000. Trustees—Alpheus Bull, John O. Earle, Thos. Bell, T. A. Mayou and J. W. Gashwiler.

Highland Consolidated M. and M. Co.—Oct. 8. Location: Highland and Ely Districts, Lincoln county, Nevada. Capital, 10,000,000. Trustees—J. N. Williams, J. H. Albertson, J. M. Case, Ira G. Hoitt, E. J. Elzy, A. B. Neushaum and G. W. Maylone.

Miscellaneous.

Economy in the Use of Coal—Practical Men.

Ths opening address by Mr. J. F. Bramwell, C. E., bsfore the lats meeting of the British Association for ths Advancement of Sciencs, is eo full of practical suggestions that we regrst our inahility to give it in full. Instead thersof, however, we append the following brisf ontline which ws find in the *News Letter:*

Mr. Bramwell said that in thinking over many subjscts connscted with mechanical sciencs, hs could discover nothing mors important than "coal," the staff of life of the steam engine. He referred to the increasing drain upon the coal reeources, which, however great, had a limit; the amount raised iu 1855 was 64 millions, in 1860 80 millions, and in 1869 108 millions of tons, while the price of coal in the colliery districts had advanced within the past year one hundred per cent. Unlike wood fuel, which grows year after year to replace the annual consumption, coal fuel is given us once for all, and should therefore he regarded as a precious trust of which we are the guardians and stewards, justified in nsing all we require for legitimate purposes, hut criminal in respect of all we waste, whether through carelessness or ignorance—an iguorance as culpable as carelessness.

He next passed in consideration the various possible suhstitutes for coal as a source of power. Wind, the force of streams, and the force of tides, pointing out various methods hy which these ageucies might be more fully utilized than at present. He referred to the waste of coal in mining; the duty of mining engineers to reduce this waste to a minimum; then the waste of coal when hrougbt to the surface in domestic use and in manufacturiog; the grates and chimneys in use—fire cannot hurn without air, no means whatever provided for tbe aii to come into the fire, the fire heing placed below the chimney, the msin part of the heat goes up and is wasted, leaving the room to he warmed principally, if not entirely, hy the radiated heat. He referred to the admirably simple fire grate, invented by Captain Douglas Galton, which had found but little favor in England, but the merits of which bad at once heen acknowledged hy the French, who made a careful and scieutific iuvestigation of tbeir working and found that with such fire-places three times the effect was obtained from a given weight of coal than could he got with those of ordinary conetructiou. No doubt there are maay other plans by which the same end may be attained, yet we go on year after year huilding homee without change aud wasting the precious fuel.

Witb regard to waste in maaufacturing uses, Mr. Bramwell discussed many sources of it and the remedies for them; called attention to modes of firing, construction of boilers and furnacee, and other methods of economizing fuel, as well as to the wastefulness of many steam engines made by maaufacturers who are nnacquainted with the principles of the art they follow, and altogether in the rear of the scientific knowledge of the day. Were all the steam engines used in the United Kingdom improved up to the highest standard, the result would he a saving yearly of niillions of tons of coal. Why are the users of eteam eugines so blind to their own interests? In prospsrous times they are too husy; in had times too dispirited; there is much to justify their conduct in hoth instances; it requires a really comprehensive and large intelligence, and a belief in the future possessed by few only out of the bulk of mankind.

There is a further and a perpetual bugbear in the way of such improvemeut, and that bugbear is the so-called "practical man." Mr. Bramwell had been brought up as an apprentice in a workshop, and had practiced his profession all his life. Tbe truly practical man of all others he admired, by whom he wished persons to he guided, because the truly practical man is one who knows tbe reason of that which be practices, who can give an account of the faith that is in him, and who, while he posseeses the readiuess of mind and the dexterity of action, which arises from long continued and daily intercourse with the suhject of his profession, possesses also that necessary amount of theoretical and scientific knowledge which justifies him in pursuing any process he adopts, which in many cases enables him to devise new processes, or whicb, at all events, if he be not of an inventive quality of mind, will enable him to appreciate and value the new processee devised hy otbers. Thie is the truly practical man. But the practical man as commonly understood means the man who knows the practice of his trade, aud knowe nothing else conceruing it; the man whose wiedom consists in standing by and seeing, but not investigating the new discoveries which are heing made around him; in decrying those discoveries; in applying to those who invent improvements, even the very greatest, the epithet of echemers, and then when he finds that, heyond dispute, some new matter is good and has come into general practice, taking to it grumhliugly.

The aim and object of such a man, indeed, is to ineure that he ehould never make a mistake hy embarking his capital or his time in that which has not heen proved hy men of large heart and large intelligence. It is euch a practical man ae thie who delaye all improvement, as illustrated hy the experience of Bessemer, Siemans, Galton, and many others. This conduct of the eo-oalled practical man arises not only from ignorance of the principles of his profession, hut from anothsr one, and that is, you offend his prids when you come to him and say, "adopt euch a plan; it is an improvement." His instinct revolts at the notion that you, a etranger, very likely his junior, and very prohahly, if the improvement hs an original and radical one, a psrson not even connected with the trade to which that improvement relates, should dare to assert that you can inform him of eomething connected with his husinese that hs did not know. In too many instances ths owner has iutrusted ths managsment to a foreman or managsr, who was often one of the so-called, or distinguished from the real, "practical msn." He pointed out how such persons scoffed at and obstructed iuventors, and derided them as schemers; poiuted to Mr. Bessemer as a victim. Iu conclusion, Mr. Bramwell advocated the formation of a society to give prizes for the most economical form of engine construction and maintenance.

Exciting Mining News.

Some time ago we made brief rcfereuce to projected mining operations at Volcano Cañon near Michigan Bluff, by a San Francisco company of which James H. Keown, formerly a resident of Iowa Hill, but latterly of San Francisco, is Superintendent. Suhsequently we noticed the transportation of a large amount of heavy machinery through our town en route to the ahove named point. We are now in receipt of most encouraging—we might say startling—news from that quarter. But hefore repeating cnrrent reports let us take a retrospective view of the situation. It is now nearly or quite twenty years since the first attempt was made to sink a shaft to the bedrock at or in the immediate vicinity of the poiut where the operations of the Hazard company are uow in progress. It has heen a cardinal point of faith with most of the old miners of that section, that in the neighborhood referred to there was a deep and vast "maiu channel," of unquestionable richnees, from which the Michigan Bluff, Bird's Valley, Batb and other rich deposits of that region were simply "outlets," "overflows," "outside channels" or something of the eort. Year after year attempt after attempt was made to test the soundness of these theories. But, for want of sufficient capital aud proper appliances for overcoming the water difficulty, none of these attempts were permanently successful, although, in spite of successive failures, tbe prospects and indications were of a character to strengthen rather than weaken the faith of the mining community. In spite of repeated failures a mere impression became a matter of firm and unalterable faith. Keown had operated with varying success, in the adjacent Iowa Hill eection. For years he had been aware of and a sharer in the popular belief that there was a large and rich channel at the point nnder consideration. Travel wbere he would, throughout California, Nevada, Utah, Arizona and all the mining country of the Pacific Coast, his mind was never entirely free from this subject and the ghost of the Volcano cañon enterprise would keep rising up to hannt him. At last he decided on tbe only course that seemed practicable for laying the troubled phantom. He emharked of his own means, induced a number of San Francisco friends to do likewise, obtained hy purchase and location a large tract—several hundred acres—in the vicinity of the ground referred to, procured first-class machinery of such power and capacity as to make success an assured certainty if it was possibly attainahle, and went to work with a hull-dog determination to test that ground or burst the Hazard company. After many accidents, annoyances and hacksets the machinery was got into good workiug order, all of the operations at the mine went like clock-work, and last week Keown's faith and energy met with an ahundant reward. A deposit of auriferous gravel was struck which is described as equal or superior to any of those which gave world-wide fame to Iowa Hill, Forest Hill, Michigan Bluff and adjacent camps in the flush time of '52 to '56.

The San Francisco members of the Company were sent for, went up, feasted their eyes on the glorious sight and had a grand glorification. In miuing circles—we mean among old miners of "the Divide"—it is confidently believed that this channel is of immense hreadth and sweeps around hack of Forest Hill, and that its continuation will undoubtedly be struck hy Peyton Powell in the slope which he hae been trying to eink at the old Wheeler claim. If this theory should prove correct aud if Powell should strike auything approximating the richnese of the Hazard Company's developments, it is inevitable that a wonderful impetus will he given to mining enterprise on the Forest Hill divide.—*Placer County Stars and Stripes.*

The Australian Cable.—The cahlo counecting Australia with England and America gave brief congratulatory messages, and went into a trance. That is the way with cahles. It will he remembered that the Atlantic cahle behaved in the same manner, and incredulous people by the thousands helieved there never had been communication between the two nations through its agency. The Australian cahle broke, and the task of its recovery from a hottom of coral reefs and other submarine obstacles ie one of much greater magnitude than the recovery of the lost cable in the Atlantic.

Our Iron Future.

There ie a striking unanimity of opinion concerning the grand future which awaits ths iron industries of the United States, if our present opportunities are properly improved. It ie seen that the use of iron can bs indefinitely expanded, and that the new fields for its employmsnt are being daily discovered. In 1856 the couutry consumed eighty-four ponnds of iron per capita, whilst last year the consumption was a hundred and fifty pounds. In ths same period ths consumption in England advanced from a hundred and forty-four ponnds to two hundred. In a few years we shall overtake hsr.

At the present rate of increass in the United States our production will be 7,000,000 tons per annum, in twenty-five years from now. But the development of the industry is as phenomenal, its prospects are so grand, and the English production is growing so costly, that a good American authority predicts our production will reach, at the close of the present century, from 25,000,000 to 40,000,000 of tons annually. The London *Mining Journal*, indeed, a very competent authority, admits that hefore the lapse of another generation, the United States will be the great irou and steel-producing country of the world, hy reason of the fact that Great Britain has nearly reached the limit of her expansion in these particulars.

Another important circumstance, wbich indicates that British capitalists are beginning to seriously turn their attention to this country as the world's great field for the development not only of these industries, but also that of coal, which is their hasis, is the fact that a large number of English explorers are reported to be at present traversing our coal fields, and holding confidential interviews with our leading railroad magnates, declaring that they represented unlimited capital which is ready to invest itself for the developmeut of our coal and iron products, if favorable reports can be given. These are notable evidences of the growing belief felt in Great Britain that the time is not distant when she will he compelled to surrender her position ae the head of the iron interest of the world.

Kern County Gold.—The discovery of gold ledges ln Grizzly Mountaln, ten miles by road from Havilah, in Kern county, has caused a geueral stampede from that place. The tollowing is a description of the locality from an old resident: Grizzly Mountain is a wild and almost inaccessihle range, about five miles distant from Havilah, on an air-line Along this range, for a distance of twelve miles, is a precipitous rocky ravine, the abode of numbsrs of grizzly hears. From this fact, and its rough location, it has never hitherto been explored; hut gold has for a long time been supposed to exist there in great quantities, as placer gold has been found sn arroyos leading therefrom. Recently, some prospectors, venturing further into this place than ever before, found good float quartz and discovered a fair quartz lode, which had heen laid open from the action of a water-spout. The entire ravine, which is filled with dry undergrowtb, has heen burned out, and the whole country laid bare. In a few days several rich lodes, four to ten feet wide, were discovered. Nearly every one in Havilah has gone out to the mines, and the excitemeut in that locality is very great.

The husiness of supplying San Francieco with fish is by no means contemptible. It seems that the number of men employed in catchiug fish for home consumption as well as for export is from five to six hundred, about one-half of whom are Italians aud the rest Americans, Slavonians, Spaniards, Greeks and Portugese from the Azore Islands. The Americans are mostly engaged in salmon fishing at Rio Vista and above, while on the Sacramento and its tributaries and sloughs below, it is entirely in the hauds of the Italians. Of the total numher there are distributed in the different fisheries as follows: Salmon catching, 200 men with 80 hoats; hay fishing, 250 men with 80 boats; coast and inland fishing, 60 men with 15 boats. There are also a score of boats distributed at various points along the coast, where neighboring towns or communication with the interior offer reward to the fishermen's industry.

Calabrian Manna.—Mr. Daniel Hanhury, F. R. S. who is *par excellence* the English investigator of the history of raw pharmaceutical products, undertook to inquire into the history and productions of Calabrian manna, tbat district heing described in Murray'e Handbook of Southern Italy ae the chief seat of the trade in mauna. He visited Calahria Citra during the present year, but had great difficulty in finding any really good specimeus of tbe drng. There seems to be no douht that, although Calabria was, eome number of years ago, almoet the only source of manna, the production of it there has ceased and that Sicily is now the place of production, the trees yielding it being etated as *Fraxinus ornus* and *Fraxinus rotundifolia.*

William B. Rising, recently elected Professor of Mining Metallnrgy in tbe University of California, returned from Germany on August 23d, after an absence of three years. He spent two years at the Heidelherg University, where he received the degree of Doctor of Philosophy, and afterward one year at the University of Berlin. Professor Rising held the Profeseorship of Chemistry in the old College of California.

Dynamite Experiments in Europe.—Some important trials have heen mads with dynamite at Rouen. In the first plac the substance was lighted hy means of a match, and it was fonnd tbat when ths match entered deeply into the cartridgs of dynamite, combustion occurred without explosion; on ths other hand, whsn the match entered hut a littls distance into the cartridge the explosion wae terrible, and still more so when the match was primed with fulminating msrcury. Some intsresting trials with this hlasting agent have also been made at ths Biassa tunnel in Italy, which fully show the superiority of that substance over ordinary blasting powdsr, and especially when watsr ie met with. Eastsrn end: Compact limestons and hard dolomite. (1) With ordinary hlasting powder, 203 metres of tunnel driven 7-50 squars mstres in sectiou, in 200 days, or at the rate of 1.015 mstres per day of twenty-four hours. (2) With dynamite, 300.80 metres run of eqnal section in 160 days, or at the rate of 1.88 per day of twenty-four hours, showing a superiority in favor of dynamite of 0.865 per day. Western end: Rock, clayey schist, with beds of sandstone and ahundant filtration of water. (1) With ordinary hlasting powder 80.75 metres run of tunnel, 7.050 square metres in section, driven in 190 days, or 0.425 per day of twenty-four hours. (2) With dynamite, 107.10 metres run of tuunel of above section in 170 days, or 0.63 per day, showing 0.25 per day in favor of dynamite.

New Quartz District.—A new mining district called the Golconda, has been formed in the vicinity of Perkins' Ranch, ahout 25 miles west of this city. Some 25 locations have already heen recorded and there are quite a uumber of men prospecting for other ledges. From specimens of the ore that has heen suhmitted to our inspection, we judge that the discovery is the most valuable one that has yet been made in this county, as the ore is of good quality, assaying all the way from $175 to $3,500 per ton and is what is generally known as free milling ore. The ledges are of fair size—from four to eight feet in width—and can be easily worked. The district is well wooded and watered—and there are also several fine coal heds in the immediate vicinity. The discoverers, Messrs. Alex. Delong and Hugh T. Patton, have let a contract to sink a shaft on the Golconda ledge, tbe largest and best in the district, to a depth of 100 feet for the sum of $1,200. As the principal ledgee are owned hy men of some means, there is reason to believe that the district will he rapidly developed. Should future delopments confirm the favorable opinion now entertained of the Golconda District, it will not he long before a thriving town will spring up tbere. The prospects are very flattering indeed that Deer Lodge county will always be the hanner couuty of Montana, in the production of the precious metals.—*Deer Lodge Independent.*

Coal and Iron.—The coals of this coast, including the Rocky Mouutains, Mount Diabalo and Oregon, at present worked, belong to a much later age thau the coals of Pennsylvania and Virginia, and those we import from England. Our coals are not suitcd to iron making in the furnace and the rolling mill. Iron ore of excellent quality abounds in California; hut for want of suitable coals. and by reason of distance inland, it is unavailahle. Trne coal of the ancient carhoniferous formation, ie reported in the Trinity River country. It is a true haking, hituminous coal. Recent exploration describes tbis coal-basin as thirty miles long, and it seems of good size. It is nnderlaid with rich ironstone. Here, probahly, will be the great iron factories of the State.

Wells for Irrigating.—The farmers of Contra Costa have gone iuto the business of digging wells aud erecting wind-mille for local irrigating purposes. The eoils of that county are highly productive, but many of the hest tracts of land are liahle to drouth, excepting in seasons of ahuudant rain. The grand irrigating ditch for which they have heen waiting will prohahly not reach down to Antioch for several years to come. In the meantime, a great deal of irrigating can he done in the manner above noted. The editor of the Antioch *Ledger* the other day counted twenty-five wind-mills hetween that town aud Point Timher. Water in the wells is plentiful, and reached without going to any very great depth.

A Pioche dispatch says: The bullion shipments from this city per Wells, Fargo & Co. for the past seven days, amounted to $117,-318.24, showing a small increase over thoso of the previous weeks. Work is generally ae hrisk as ever in the mines throughout the district, and preparations for hoisting are now more active and important. The new Condor mill will he in complete running order in a few daye.

The Norfolk, Va., Manufacturing Company have huilt two canal hoats to compete for the New York State prize. Both hoate are constructed to hinge together, how and stern, hy a patent process, the latter portion of which will carry the motive power, which consists of a screw propeller and engine of forty-horse power.

A new eteam drill, capahle of boring a hole eight inchee in diameter, hae just heen introduced in the anthracite regions hy the Pennsylvania Coal Company. It will hore further in one day than a dozen men with the old drille could drill in a month.

Business Cards.

H. C. BENNETT,
STATISTICIAN.
Reports and estimates made about all departments of Production, Commerce, and Manufacture, of the Pacific Coast. 5v24-tf

RICHARD H. STRETCH, Civil Engineer,
City and County Surveyor.
Office—Room 16, City Hall. 11v24-3m

GILES H. GRAY. JAMES M. HAVEN.
GRAY & HAVEN,
ATTORNEYS AND COUNSELORS AT LAW,
In Building of Pacific Insurance Co., N. E. corner California and Leidesdorff streets,
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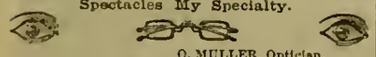
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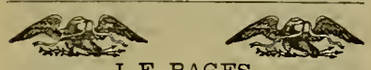
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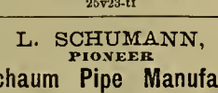
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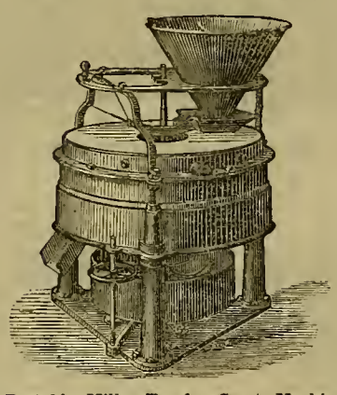
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Exhibition of Manufactures, Inventions, Etc.

A Bag Filler.—Mr. Wasson, exhibited for Wasson & Durgan, of Carson City, Nevada, a eimply constructed bag or eack holder that seemed to us a meritorious article. It is readily adjustable for any sized sack. It ie raised by levers when ready for tieing and deteching, and can at any instant he ehaken to solidify ite contente. They can he eold for $10 apiece, or less, are easily transportahle and decidedly dnrahle. Mr. W. offers rights for sele, but will in the meantime proceed to manufacture at once on this Coast. He has several other important and ingenious inventions which we may notice hereafter.

Subsoil Gang-Plow.—Myers & Gummow, of Marysville, exhihited their excellent subsoil gaug-plow; a peculiar feature of which is, that it cau he used either as a single plow and a suhsoiler, or as a two-gang plow. It does splendid work, and is highly spoken of hy every one who has put them to a trial.

Side-hill Plow.—This very meritorious invention, Scoville's Climax Side-hill Plow, exhibited by Treadwell & Co., San Francisco—who are the agents for the Pacific Coast—eeeme of those really valuable inventions that eometimes from their very appeerance attract the attention of amateurs. Plowe don't speek, but if they did, thie one would speak for itself, for the superior workmanship of the implement, and spiendid plowing it is capehle of doing. This compeuy also exhibit Huie's patent gang-plow, said to he a very efficient and desirahle comhination, forming a sulkey-seat gang, extensively used here and at the East, and with "Jones' plow-hottoms," the improvement of 1872, is probahly one of the hest plows in nse.

Grain Separator.—Nash, Miller & Co.,—ae was expected,—were on hand with their improved Nash & Cutts' Grain Separator, manufactured at Sacramento, and which they were ready to set out against any other grain separator in this or any other country. In fact, they are simply ready to compete with anything in their line of manufactures. They are extenеively used.

Premium Grain Separator.—This California invention, hy W. D. Freemau, patentee, of Tomales, Marin Co., is peculiar in its screen arrangement, which gives it power over other eeparators, in freeing oate from all manner of pode and other foul seeds, and eeparating different sized grains, rendering it one of the moet satisfactory machines ever introduced for its specialtiee.

Hydraulic Mill and Mining Lamps.—This most valuable invention for lighting mille, miues and other special pnrposes, was on exhihition and received considerahle attention. It is certainly a new and important manufacture for thie coast. A epecialty connected with this lamp is the use of gasoline with perfect eafety, the lamp heing essentially non-explosive. C. B. Brown, Placerville, Cal., is the patentee.

Hydraulic Joints.—Conspicuous among the few mining inventions on exhihition was the "Dictator and Little Giant Hydraulic Jointe." They are claimed to be euperior to anything that has ever heen in use hefore, and their very appearance would indicate their ueefulness and adaptability. R. Hoskin, of Dutch Flat, Cal., is the sole manufacturer.

Imperial Washer.—Reynolds & Fuller, Sacramento, exhihited their Imperial wash boiler and waehing machine combined. Evidently made compact for convenience and economy of apace and fuel.

Manker's Sash Balance.—This invention is intended to do away with the ever-hreaking cords of sash weights and the attendant trouble of repeated renewal. It consista of a coiled epriug so arranged and attached to the side of the aash and window frame that when the sash or window is lowered, the spring is, in effect, wound up, and consequently takes to itself the weight of the window, and holding itself ready to raise the same hy the aid of an extremely small amount of additional power, snch as any child can apply. Addrese E. B. Tenney, Sacramento.

Grape Crusher and Stemmer.—Schoenetein & Klein's patent grape crusher waa on exhihition and attracted the attention of those who are makers of wine on a large scale. Patent rights for thie machine are for sale by F. B. Shoenstein, S. F.

Johnston's Grape Crusher.—Thie ia another of those machines now considered indispensahle to the wine maker. It thoroughly crushes the grapes without hreaking the aeeds, and effectually aeparates the stems from the pulp in the most rapid and complete manner. It is patented by Geo. and W. F. Johnston. It is now in use by the Johnston Co., Sacramento.

The Napa Churn.—This celehrated churn invented and patented hy E. Groat, Napa City, wae one of those articles that would commaud attention anywhere. It ia on entirely a new plan and seeme to combine eimplicity of construction, cheapuese, durability, power aud effectiveness in an eminent degree. It is patented also in foreign countriee, and the patentee haa heen east to perfect the mannfacture of them. We expect to give an illustration of it at some future day.

Tonn's Roller Skates.—This, the simplest of all parlor skates and yet ona of the most elastic and durable, is the invention of Mr. Todd, the well-known photographer of Sacramento.

Building Paper.—Peck & Brown, Sacramento, exhibited specimens of hnilding paper, plastering hoard, roofiug felt, tarred sheathing and moth-proof carpet felt, new articles just introduced to this market, that give promise of extensive application to the nses for which they are deeigned.

James' Spring Bed.—S. Look, San Francisco, agent for the Pacific Coast, exhibited this celehrated spring bed.

Combined Portable Desk and Settee.—Nothing set us up hetter then the exhibition of Peard's Patent School Desk and Settee combined, manufactured hy the School Furniture Company of Chicago, Illinois. They not only offer superior comfort and accommodation to the pupil, but they can he folded so as to occupy a space of only ten inchee. The advanteges derivable from this arrangement are sufficiently ohvioue. They are made of cherry, or of cherry and walnut comhined. Messrs Roman & Co., of this city, are the agents for the Pacific coast.

Post and Well Borer.—A California invention, the Orchard Post and Well Auger, is of the highest importance to our farmere, and will help to render cultivahle, many tracts that are now considered hopelessly arid. It's cutters are made of eteel, and it completee its work without the aid of a mud pnmp. It hae bored through fifty feet of hard-pan, cement, clay and gravel in nearly half a day. It is undoubtedly one of the most valuable of recent California inventions.

Remarkable Fleece. — C. C. Baker, near Modesto, exhihits the fleece of a four-year old huck, the weight of the fleece heing 38 lhs., as sworn to hy one editor, one post-master, and two farmers; certainly enough to leave no douht of its truthfulnese. It was eheared on the 17th of Sept., 1872, having been previously eheared on the 18th of Sept., 1871.

American Bottle Filler.—This is an improved Filler, hy Messrs J. Armstrong & Marke, 240, 6th street, S. F., an invention by which one hundred dozen piuts cau be filled in an hour.

Gang Plow.—Manuel and Sawyer, Napa, exhibit a new gang-plow, with a rear-wheel attachment following the plow in the furrow, by which the friction on the bottom of the plow is greatly lessened. They have just commenced mannfacturing; the castings are light and the plow simple throughout.

Carbolic Acid Disinfectant.—The Pacific Wood Preserving Company exhihits this ingredient, which is manufactured very economically from the residuum of the materials used in their wood-preserving process. They also exhihited specimens showing the destructive effects of the Toredo, on unpreserved wood, and the perfect protection afforded hy the preserving proceee. Office of the Compauy, 338 Montgomery street, S. F.

The Johnston Still.—Geo. Johnstou exhibited a model of his improved still, showing the principle of its operation; which producee brandy from a first distillaiion, free from fuseloil. Also a keg sample of the brandy of the vintage of 1871, which experienced tastere eay possessee rare and decidedly fine qualitiee. Mr. Johnston has patented his still in Europe and is already in receipt of a reguler income from its use in England.

Beehives and Bees.—J. S. Harhison exhihits his patent hivee. Also glass and metallic casee containing hees, and showing the pure honey. Mr. H. has some 2,000 hivee of hees, large numhere of which he removes to different parte of the country to secure the best pasturage. Sometimee near the summit of the Sierrae, at others in the low conntry of Santa Cruz connty. It has heen discovered that the hlossom of the Buckeye killa hees—onr bee keeper readers will make a note of this.

Tule Plow.—McCall, of Santa Clara, exhihited his tule plow, of which mention haa heen made heretofore. It was tried in Yolo county during the Fair, and reported on favorahly. The peculiar featnre in its operation ia the cntting the soil into rihhona and completely inverting it. The inventor is meeting with encouragement, having several orders for its manufactnre.

Glass Works. — The San Francisco glass works exhihit specimens of white and colored glass, etc., making a fine display of home manufactured articlee. Their hanging plant baekets, entirely of glasa, were particularly attractive.

Mineral Glazing Tool. — A rotary glasscntting instrument, of carbonized steel, equal to, and in many respects hetter than, a diamond, are meeting with an extensive sale. The City Novelty Company, San Francisco, has the sole agency for the Pacific Coast.

In connection with its exhibition at the Paviliou was the circumstance of its developing a remarkahle talent in young Charlie Weinreich of Sacramento, who after a few hours application to the use of the instrument, hecame singularly expert in its management, attracting general admiration.

Infallible Yeast Powders.—There was a conspicuous display of thie compound by Bowen Brothere, S. F. It is a class of articles used more in Califoruia prohably, than in auy other section of our country.

Cost of Great Tunnels.—The Mount Cenis Tnnnel cost $975 per linear yard, the cost of the Hoosac tunnel is ahout $900, and that of the most expensive in England, the Saltwood, is only $590.

Our Agents.

Our Friends can do much in aid of our paper and the canse of prsctical knowledge and science, by assisting Agents in their labors of canvassing, by lending their infinence and encouraging favors. We intend to send none bnt worthy men.

Frank S. Chapin—California.
Wm. F. Spencer—California.
M. S. Senter—California and Oregon.
C. H. Dwinelle—Special Corresponding Agent.
I. N. Hoag—Sacramento, General Agent.
F. M. Shaw—Southern California.
L. P. McCarty—California.
Samuel Cushman—Colorado Territory.
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Our Printed Mail List.

Subscribers will notice that the figures found on the right of the pasted slips, represent the date to which they have paid. For instance, 21sp70 shows that our patron has paid his subscription up to the 21st of September, 1870; 4jy72, that he has paid to the 4th of January, 1872; 4j173, to the 4th of July, 1873. The inverted letters (†‡§¶, etc.,) occasionally used are marks of reference, simply for the convenience of the publishers.

If errors in the names or accounts of subscribers occur at any time an early notice will secure their immediate correction. Please notify us if you are not properly credited within two weeks after paying.

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San Francisoo Metal Market.

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, Oct. 10, 1872.

Iron.—			
Scotch Pig Iron, ₱ ton	$60 00	@	65 00
White Pig, ₱ ton	50 00	@	55 00
Refined Bar, bad assortment, ₱ lb	— 04½	@	— 5
Refined Bar, good assortment, ₱ lb	— 05	@	— 5½
Boiler, No. 1 to 4	— 05½	@	— 06
Plate, No. 5 to 9	— 06½	@	— 07
Sheet, No. 10 to 13	— 07½	@	— —
Sheet, No. 14 to 20	— 07½	@	— —
Sheet, No. 24 to 27	— 08	@	— —
Horse Shoes	8 00	@	
Nail Rod	10		
Norway Iron	8		
Rolled Iron	5		
Other Irons for Blacksmiths, Miners, etc.	5½	@	6¼
Copper.—			
Sheathing, ₱ lb	— 40	@	— 45
Sheatbing, Yellow	— 28	@	— 30
Sheathing, Old Yellow	— 12	@	— 12½
Composition Nails	— 28		— 30
Composition Bolts	— 28		— 30
Tin Plates.—			
Plates, Charcoal, IX ₱ box	17 50	@	— —
Plates, I Q Charcoal	15 50	@	— —
Roofing Plates	15 50		16 —
Banca Tin, Slabs, ₱ lb	— 50		— 55
Steel.—English Cast, ₱ lb	— 19		— 20
Drill	19		20
Flat Bar	19		20
Plough Points	3 75		4 00
Russia (for mould boards)	12½		15
Quicksilver.—₱ lb	— 55		— 57½
Lead.—Pig, ₱ lb	— 05¾		— 06
Sheet	— 10		— —
Pipe	— 9		— 10
Bar	— 06¾		— —
Zinc.—Sheets, ₱ lb	— 11		— 11½
Borax.—Refined	— 27		— 30
Borax, crude	— 5		— —

Leather Market Report.

[Corrected weekly by Dolliver & Bro., No. 109 Post st.]

San Francisco, Thursday, Oct. 10, 1872.

Sole Leather.—The Eastern market is higher, and some tanners have advanced their prices here. We quote as below:

City Tanned Leather, ₱ lb	26@28
Santa Cruz Leather, ₱ lb	26@29
Country Leather, ₱ lb	23@28
Stockton Leather, ₱ lb	28@29

French skins continue firm. All California skins are scarce and bring full pricee.

Jodot, 8 Kil., per doz	$60 00@		
Jodot, 11 to 13 Kil., per doz	66 00@	85	00
Jodot, second choice, 11 to 15 Kil. ₱ doz	56 00@	75	00
Lemoine, 16 to 18 Kil., ₱ doz	75 00@	77	50
Levin, 12 and 13 Kil., per doz	68 00@	70	00
Cornellian, 16 to 19 Kil., per doz	63 00@	65	00
Gorrian, 12 to 14 Kil., per doz	56 00@	60	00
Ogerau Calf, ₱ doz	34 00@		
Simon, 18 Kil., ₱ doz	60 00		
Simon, 20 Kil. ₱ doz	65 00		
Simon, 24 Kil. ₱ doz	72 00		
Robert Calf, 7 and 8 Kil	35 00@	40	00
French Kips, ₱ lb	1 10@	1	30
California Kip, ₱ doz	60 00 to	80	00
French Sheep, all colors, ₱ doz	8 00@	15	00
Eastern Calf for Backs, ₱ lb	1 15@	1	25
Sheep Roans for Topping, all colors, ₱ doz	9 00@	13	00
Sheep Roans for Linings, ₱ doz	5 50@	10	50
California Russett Sheep Linings	1 75@	5	50
Best Jodot Calf Boot Legs, ₱ pair	5 25		
Good French Calf Boot Legs, ₱ pair	4 50@	5	00
French Calf Boot Legs, ₱ pair	4 00		
Harness Leather, ₱ lb	30@	37½	
Fair Bridle Leather, ₱ doz	48 00@	72	00
Skirting Leather, ₱ lb	34@	37½	
Welt Leather, ₱ doz	30 00@	50	00
Buff Leather, ₱ foot	18@	21	
Wax Side Leather, ₱ foot	20@	22	

U. S. Mining Laws and Regulations.—Dewey & Co., proprietors of the Mining and Scientific Press—the American and Foreign Patent Agents of this city—have published in convenient pamphlet form the United States Mining Laws, and the regulations thereof; showing how mining lands may be purchased, manner of obtaining title to mining claims, and giving all necessary instructions to miners how to avoid difficulties with adverse claimants. It is a valuable document—one that every person who is interested in mines should have a copy of. It can be had for 26 cents per copy at their office, No. 338 Montgomery street, San Francisco.

Continental Life Insurance Co., No. 302 Montgomery street, corner of Pine.

Mining and Other Companies.

Owing to the time necessary to mail the present large edition of the M. & S. Press, we are obliged to go to press on Thursday evening—which is the very latest hour we can receive advertisements.

Altona Gravel Mining Company—Location

of works, Grass Valley, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 3d day of October, 1872, an assessment of ten cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary, at No. 28 Merchants' Exchange, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the 2d day of November, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 25th day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

DAVID WILDER, Secretary.

Office—28 Merchants' Exchange, San Francisco, Cal. oct5-5i

Auburn Gold Mining Company.—Location

of Works, Auburn, Placer County, California.

Notice is hereby given that at a meeting of the Trustees of said Company, held on the 13th day of September, 1872, an assessment of twenty-five cents per share was levied on the capital stock of said company, payable immediately, in gold coin of the United States, to the Secretary, at his office, No. 7 Stevenson Building, in San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Monday, October 14th, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, November 6th, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

GEO. W. DIXON, Secretary.

No. 7 Stevenson Building, corner of Montgomery and California streets, San Francisco, California. se21-4w

Beckwith Mining Company—Location of

works, Ely Mining District, Lincoln County, State of Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 19th day of August, 1872, ths several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Curtis, John A	unissued	1500	$300 00
Kitten, W W	unissued	1500	300 00
Lanins, Kinsey	unissued	1500	300 00

And in accordance with law, and an order of the Board of Trustees, made on the 19th day of August, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, Room 5 and 6, No. 302 Montgomery street, San Francisco, California, on Wednesday, the 23d day of October, 1872, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

WM. H. WATSON, Secretary.

Office, Room 5 and 6, No. 302 Montgomery street, San Francisco, California. oc5-3w

Cottonwood Creek Gold Mining Company

Location of Works, Shasta and Tehama Counties, State of California

Notice.—There are delinquent upon the following described stock, on account of assessment, No. 1, levied on the nineteenth (19th) day of August A. D., 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificats.	No. Shares.	Amount.
Crittenden, J L	20	1500	$106 00
King, J L	31	100	7 00
Kenney, C A, Trustee	37	200	14 00
Kenney, C A, Trustee.	38	200	14 00
Kenney, C A, Trustee	39	100	7 00
Van Wyck, S M	14	1000	70 00
Van Wyck, S M	15	1000	70 00
Van Wyck, S M	16	1000	70 00
Van Wyck, S M	17	500	35 00
Van Wyck, S M	18	500	36 00
Van Wyck, S M	19	416	29 12
Van Wyck, S M	44	76	5 25
Welch, Wm	3	100	7 00
Welch, Wm	4	1000	70 00
Welch, Wm	5	1000	70 00
Welch, Wm	6	1000	70 00
Welch, Wm	7	1000	70 00
Welch, Wm	10	100	7 00
Welch, Wm	11	100	7 00
Welch, Wm	12	117	8 19
Welch, Wm	41	975	68 26

And in accordance with law, and an order of the Board of Trustees, made on the nineteenth (19th) day of August, A. D. 1872, so many shares of each parcel of said stock as may be necessary, will be sold at the office of the Company, No. 411 California street, San Francisco, California, on Tuesday, the fifteenth (15th) day of October, A. D. 1872, at the hour of one (1) o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

JOS. L. KING, Secretary.

Office, No. 411 California street, San Francisco, California. se28-3w

Excelsior Silver Mining Company—Location

of works, Yellow Pine District, Nye County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 26th day of September, 1872, an assessment of Ten Cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin to the Secretary, at No. 640 Washington street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 29th day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, November 25, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

W. A. KOLLMYER, Secretary.

Office, 640 Washington street, San Francisco, Cal.

Lady Franklin Gold and Silver Mining

Company—Location of works, Silver Mountain Mining District, Alpine County, State of California.

Notice is hereby given, that at a meeting of the Trustees of said Company, held on the 24th day of September, 1872, an assessment of fifty (50) cents per share was levied upon the capital stock of said Company payable immediately, in United States Gold Coin, to the Secretary of the Company, at 507 Montgomery street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the twenty-eighth day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on the eighteenth day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of the sale.

J. S. LUTY, Secretary.

Office, No. 507 Montgomery street, San Francisco, Cal. oc5

Louise Mining Company.—Location of

Works, Ely Mining District, Lincoln County, Nevada.

Notice is hereby given that at a meeting of the Board of Trustees of said Company, held on the 14th day of September, 1872, an assessment of fifty cents (50 cents) per share was levied upon the capital stock of said company, payable immediately, in U. S. gold coin, to the Secretary, at the office of the company, room 5, No. 302 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Saturday, the 19th day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 9th day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees. WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery street, San Francisco, California. se21-4w

Nevada Land and Mining Company—Location, Spruce Mountain Mining District, Elko County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the first day of October, 1872, an assessment of Eight cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the Office of the Company, Room 5, No. 302 Montgomery street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Saturday, the 10th day of November, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 23d day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery St., San Francisco, California. oct2

Ohio Consolidated Gold Mining Company of West Point, Calaveras County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 24th day of September, 1872, an assessment of Ten Cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No. 432 Montgomery street, Room No. 1. Any stock upon which said assessment shall remain unpaid on the second day of November, A. D. 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 23d day of November, A. D. 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

W. AUGUSTUS KNAPP, Secretary.

Office, 432 Montgomery street, over Donahue & Kally's Bank. se28-4t

Pocahontas Gold Mining Company—Location of Works, Mud Springs, El Dorado County, California.

Notice is hereby given that at a meeting of the Board of Trustees of said Company, held on the 17th day of September, 1872, an assessment of fifty (50) cents per share was levied upon the capital stock of said company, payable immediately, in United States gold coin, to the Secretary, at the office of the company, room 4, No. 401 California street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Thursday, the 24th day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before will be sold on Monday, the 18th day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

D. A. JENNINGS, Secretary.

Office—Room 4, No. 401, California street, San Francisco, California. se21-4w

Quail Hill Mining and Water Company—Location of works, Calaveras County, State of California.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 22d day of August, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
F S Spring, Trustee	41	120	$600 00
A E Hill, Trustee	40	7	35 00
A E Hill, Trustee	39	120	600 00
A E Hill, Trustee	37	119	595 00
A E Richardson, Trustee	45	60	300 00
A E Hill, Trustee	31	50	250 00

And in accordance with law, and an order of the Board of Trustees, made on the 3d day of October, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, No. 409 California street, San Francisco, California, on the 24th day of October, 1872, at the hour of 12 o'clock M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale. T. F. CRONISE, Secretary.

Office, 409 California street, San Francisco, California. oc5-3t

Red Cloud Silver Mining Company—Location of Works, Ely District, Lincoln County, Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 24th day of August, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Frank Cisler	2	100	$25 00
Frank Cisler	4	100	25 00
Frank Cisler	8	100	25 00
Frank Cisler	10	100	25 00
Frank Cisler	14	100	25 00
Frank Cisler	15	100	25 00
Frank Cisler	19	100	25 00
Frank Cisler	22	50	12 50
Frank Cisler	25	50	12 50
Frank Cisler	26	25	6 25
Frank Cisler	27	25	6 25
Frank Cisler	29	25	6 25
Frank Cisler	50	10	2 50
Frank Cisler	61	10	2 50
Frank Cisler	52	10	2 50
Frank Cisler	63	10	2 50
Frank Cisler	64	10	2 50
Frank Cisler	55	10	2 50
Frank Cisler	56	10	2 50
Frank Cister	67	10	2 50
Frank Cisler	58	10	2 50
Frank Cisler	69	10	2 50
Frank Cisler	70	20	5 00
Frank Cisler	71	20	5 00
Frank Cisler	72	20	5 00
Frank Cisler	73	20	5 00
Frank Cisler	74	20	5 00
Frank Cisler	75	20	5 00
Frank Cisler	76	20	5 00
Frank Cisler	77	20	5 00
Frank Cisler	78	20	5 00
Frank Cisler	79	20	5 00
Frank Cisler	80	50	12 50
Frank Cisler	81	50	12 50
Frank Cisler	82	50	12 50
Martin & Lane	35	50	12 50
Martin & Lane	36	50	12 50
Martin & Lane	37	50	12 50
Martin & Lana	38	50	12 50
Martin & Lane	39	50	12 50
Martin & Lane	40	50	12 50
Martin & Lane	41	50	12 50
Martin & Lane	42	50	12 50
Martin & Lane	43	50	12 50
Martin & Lana	44	50	12 50
J C Lennon	55	50	12 50
J C Lennon	56	50	12 50
J C Lennon	57	50	12 50
J C Lennon	58	50	12 00
R R Givens, trustee	59	50	12 50
C X Hobha	84	500	125 00
E Skerritt, trustea	85	50	12 50
E Skerritt, trustee	87	100	25 00
E Skerritt, trustea	208	130	32 50
Baldwin Gardiner, trustee.156		10	2 50
Baldwin Gardiner, trustee.163		500	125 00
Baldwin Gardiner, trustea.164		500	125 00
Baldwin Gardiner, trustee.165		500	125 00
Baldwin Gardiner, trustee.166		500	125 00
Baldwin Gardiner, trustee.167		500	125 00
Baldwin Gardiner, trustee.168		500	125 00
Baldwin Gardiner, trustee.169		500	125 00
Baldwin Gardiner, trustee.170		500	125 00
Baldwin Gardiner, trustee.171		500	125 00
Baldwin Gardiner, trustee.172		500	125 00
Baldwin Gard ner, trustee.173		500	125 00
Baldwin Gardiner, trustee.179		200	50 00
Baldwin Gardiner, trustee.180		200	50 00
Baldwin Gardiner, trustee.181		200	50 00
Baldwin Gardiner, trustee.182		200	50 00
Baldwin Gardiner, trustee.183		200	50 00
Baldwin Gardiner, trustee.184		200	50 00
Baldwin Gardiner, trustee.185		200	50 00
Baldwin Gardiner, trustee.188		200	50 00
Baldwin Gardiner, trustee.187		200	50 00
Baldwin Gardiner, trustee.188		200	50 00
Baldwin Gardiner, trustee.189		100	25 00
Baldwin Gardiner, trustee.190		100	25 00
Baldwin Gardiner, trustee.191		100	25 00
Baldwin Gardiner, trustee.192		100	25 00
Baldwin Gardiner, trustee.195		100	25 00
Baldwin Gardiner, trustee.197		100	25 00
Baldwin Gardiner, trustee.198		100	25 00
Baldwin Gardiner, trustee.199		100	25 00
Baldwin Gardiner, trustee.200		100	25 00
Baldwin Gardiner, trustee.201		100	25 00
Baldwin Gardiner, trustee.202		100	25 00
Baldwin Gardiner, trustee.203		100	25 00
Baldwin Gardiner, trustee.204		100	25 00
Baldwin Gardiner, trustee.205		50	12 50
Baldwin Gardiner, trustee.206		25	6 25
W R Peacock, trustee	210	50	12 50
J P Cavallier, trustee	213	50	12 50

And in accordance with law, and an order of the Board of Trustees, made on the 24th day of August, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction at the office of the Company, room 14, No. 331 Montgomery street, San Francisco, Cal., on the 16th day of October, 1872, at the hour of 1 o'clock P.M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

EDMUND F. CLARK, Secretary.

Office, No. 14 Stevenson Building, No. 331 Montgomery street, San Francisco. se28-3w

Silver Sprout Mining Company—Location of works and mines, Kearsarge District, Inyo County, State of California.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 26th day of August, 1872, the several amounts set opposite the names of the respectiva shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
E. B. Mott, Jr.	44	200	$100 00

And in accordance with law, and an order of the Board of Trustees, made on the 26th day of August, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the sales-room of Maurice Dore & Co., No. 327 Montgomery street, S. F., on the 8th day of November, 1872, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale. T. B. WINGARD, Secretary.

Office, Room No. 1, Second floor, No. 318 California street, San Francisco. oc12-4t

Silver Wave Mining Company—Location of works, White Pine Mining District, White Pine County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the Twenty-first day of September, 1872, an assessment of one dollar per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary of said Company, at the Company's office, 418 California street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Saturday, the Twenty-sixth (26th) day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the Twenty-fifth (25th) day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

se28-4t J. W. CLARK, Secretary.

Office, 418 California street, San Francisco, Cal.

Tellurium Gold and Silver Mining Company—Location of works, Pine Grove, Amador County, California.

Notice.—There are delinquent upon the following described stock, on account of assessment (No. 17) levied on the third (3d) day of September, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Wm Voshurgh	4	30	$30 00
John Melone	6	25	25 00
George W Hubbard	7	10	10 00
George W Hubbard	100	10	10 00
William H Cone	9	15	15 00
J McHardy Hay	8	5	5 00
E Whiting	15	10	10 00
E Whiting	16	10	10 00
Henry Austin	20	5	5 00
James Vizina	31	20	20 00
O P Chesley	33	7	7 00
J H Mullins	34	23	23 00
Henry Van Ness	35	10	10 00
Henry Van Ness	36	5	5 00
J R Mead	40	100	100 00
D'Alva Mosse	43	10	10 00
Ahel Wade	55	50	50 00
I L Thuber	56	10	10 00
H H Edmonds	57	12	12 00
T Pritchard	58	10	10 00
A J Baker	61	5	5 00
Isaac Wilson	5	10	10 00
Isaac Wilson	52	10	10 00
Isaac Wilson	96	10	10 00
Judson H Clark	72	20	20 00
George W Ryder	73	198	108 00
H H Wood	74	5	5 00
Richard Ferris	75	3	3 00
Alice C Hinckley	77	10	10 00
William O Hinckley	78	10	10 00
Oscar Burbank	80	10	10 00
Oscar Burbank	81	10	10 00
G S Hall	76	95	95 00
G S Hall	84	10	10 00
G S Hall	85	50	50 00
G S Hall	86	20	20 00
G S Hall	87	10	10 00
G S Hall	88	10	10 00
G S Hall	89	5	5 00
G S Hall	90	5	5 00
G S Hall	105	40	40 00
E B Bunce	91	10	10 00
James Mulrooney	71	5	5 00
James Mulrooney	92	10	10 00
William Weiss	21	7	7 00
William Weiss	22	15	15 00
William Weiss	23	3	3 00
William Weiss	93	25	25 00
Murray & Noble	97	5	5 00
Murray & Noble	99	5	5 00

And in accordance with law, and an order of the Board of Trustees, made on the third day of Septemher, 1872, so many shares of each parcel of said stock as may ha necessary, will he sold at public auction, hy Maurice Dore & Co., at No. 327 Montgomery street, San Francisco, California, on Saturday, the 26th day of October, 1872, at tha hour of 11 o'clock A. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

WM. H. SOERY, Secretary.

Office, N. E. corner Kearny and Clay streets, San Francisco, California. oc5 3t

Winnemucca Chief Silver Mining Company—Location of Works, Humboldt County, State of Nevada.

Notice.—Thera are delinquent upon the following described stock, on account of assessment levied on the 19th day of June, 1872, the aeveral amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
John Robins	159	100	$15 00
John Robins	160	100	15 00
John Robins	161	100	15 00
John Robins	162	100	15 00
John Robins	163	100	15 00
John Robins	164	100	15 00
John Robins	165	100	15 00
John Robins	166	100	15 00
John Robins	167	100	15 00
John Robins	158	100	15 00
John Robins	176	100	15 00
John Robins	177	100	15 00
John Robins	178	100	15 00
John Robins	179	50	7 50
John Robins	209	500	75 00
John Robins, Trustee	9	500	75 00
John Robins, Trustee	19	500	75 00
John Robins, Trustee	20	500	75 00
John Roblus, Trustee	21	100	15 00
John Robins, Trustee	22	100	15 00
John Robins, Trustee	23	100	15 00
John Roblus, Trustee	24	100	15 00
John Robins, Trustee	25	50	7 50
John Robins, Trustee	26	50	7 50
John Robins, Trustee	27	50	7 50
T F Cronise, Trustee	111	500	75 00
T F Cronise, Trustee	112	500	75 00
T F Cronise, Trustee	113	200	30 00
T F Cronise, Trustee	114	200	30 00
T F Cronise, Trustee	115	200	30 00
T F Cronise, Trustee	116	200	30 00
T F Cronise, Trustee	117	200	30 00
T F Cronise, Trustee	118	100	15 00
T F Cronise, Trustee	119	100	15 00
T F Cronise, Trustee	120	100	15 00
T F Cronise, Trustee	121	100	15 00
T F Cronise, Trustee	122	100	15 00
T F Cronise, Trustee	123	100	15 00
T F Cronise, Trustee	124	100	15 00
T F Cronise, Trustee	125	100	15 00
T F Cronise, Trustee	126	100	15 00
T F Cronise, Trustee	127	100	15 00
T F Cronise, Trustee	128	100	15 00
T F Cronise, Trustee	129	100	15 00
T F Cronise, Trustee	130	100	15 00
T F Cronise, Trustee	131	100	15 00
T F Cronise, Trustee	132	100	15 00
T F Cronise, Trustee	133	100	15 00
T F Cronise, Trustee	134	100	15 00
T F Cronise, Trustee	135	100	15 00
T F Cronise, Trustee	136	100	15 00
T F Cronise, Trustee	137	100	15 00
T F Cronise, Trustee	138	50	7 50
T F Cronise, Trustee	139	50	7 50
T F Cronise, Trustee	140	50	7 50
T F Cronise, Trustee	141	50	7 50
T F Cronise, Trustee	142	50	7 50
T F Cronise, Trustee	143	50	7 50
T F Cronise, Trustee	144	50	7 50
T F Cronise, Trustee	145	50	7 50
T F Cronise, Trustee	146	50	7 50
T F Cronise, Trustee	147	50	7 50
T F Cronise, Trustee	148	50	7 50
T F Cronise, Trustee	149	50	7 50
T F Cronise, Trustee	150	50	7 50
T F Cronise, Trustee	151	50	7 50
T F Cronise, Trustee	152	50	7 50
T F Cronise, Trustee	153	50	7 50
T F Cronise, Trustee	154	50	7 50
T F Cronise, Trustee	155	50	7 50
T F Cronise, Trustee	156	50	7 50
T F Cronise, Trustee	157	50	7 50
T F Cronise, Trustee	172	100	15 00
T F Cronise, Trustee	173	100	15 00
A O Peschy	52	3000	450 00
A O Peschy	53	1000	150 00
J H Crossman	74	200	30 00
J D Minor	11	100	15 00
M S Thompson	12	100	15 00
J J Lynn	13	100	15 00
C W Carter	14	100	15 00
M S Bonnifield	18	50	7 50
M S Bonnifield	17	50	7 50
T J Poulterer, Trustee	28	500	75 00
T J Poulterer, Trustee	29	500	75 00
T J Poulterer, Trustee	30	500	75 00
T J Poulterer, Trustee	32	500	75 00
T J Poulterer, Trustee	33	500	75 00
T J Poulterer, Trustee	34	500	75 00
T J Poulterer, Trustee	35	500	75 00
T J Poulterer, Trustee	36	500	75 00
T J Poulterer, Trustee	37	500	75 00
T J Poulterer, Trustee	38	500	75 00
T J Poulterer, Trustee	39	500	75 00
T J Poulterer, Trustee	40	500	75 00
T J Poulterer, Trustee	41	500	75 00
T J Poulterer, Trustee	42	500	75 00
T J Poulterer, Trustee	43	500	75 00
T J Poulterer, Trustee	44	500	75 00
T J Poulterer, Trustee	40	500	75 00
T J Poulterer, Trustee	47	500	75 00
T J Poulterer, Trustee	48	500	75 00
T J Poulterer, Trustee	49	500	75 00
T J Poulterer, Trustee	50	500	75 00
T J Poulterer, Trustee	51	500	75 00
T J Poulterer, Trustee	75	500	75 00
T J Poulterer, Trustee	76	200	30 00
T J Poulterer, Trustee	77	200	30 00
T J Poulterer, Trustee	78	100	15 00
T J Poulterer, Trustee	79	100	15 00
T J Poulterer, Trustee	80	100	15 00
T J Poulterer, Trustee	81	100	15 00
T J Poulterer, Trustee	82	100	15 00
T J Poulterer, Trustee	83	100	15 00
T J Poulterer, Trustee	84	50	7 50
T J Poulterer, Trustee	85	50	7 50
T J Poulterer, Trustee	87	50	7 50
T J Poulterer, Trustee	88	50	7 50
T J Poulterer, Trustee	89	50	7 50
T J Poulterer, Trustee	91	50	7 50
T J Poulterer, Trustee	93	35	5 25
T J Poulterer, Trustee	95	25	3 75
T J Poulterer, Trustee	96	25	3 75
T J Poulterer, Trustee	109	25	3 75
T J Poulterer, Trustee	110	25	3 75
T J Poulterer, Trustee	169	100	15 00
T J Poulterer, Trustee	170	100	15 00
T J Poulterer, Trustee	171	100	15 00
J Clem Uhler, Trustee	54	500	75 00
J Clem Uhler, Trustee	56	500	75 00
J Clem Uhler, Trustee	57	500	75 00
J Clem Uhler, Trustee	58	500	75 00
J Clem Uhler, Trustee	59	200	30 00
J Clem Uhler, Trustee	60	100	15 00
J Clem Uhler, Trustee	61	100	15 00
J Clem Uhler, Trustee	52	100	15 00
J Clem Uhler, Trustee	63	100	15 00
J Clem Uhler, Trustee	54	100	15 00
J Clem Uhlar, Trustee	65	100	15 00
J Clem Uhler, Trustee	66	100	15 00
J Clem Uhler, Trustee	67	100	15 00
J Clem Uhler, Trustee	68	50	7 50
J Clem Uhler, Trustee	69	50	7 50
J Clem Uhler, Trustee	70	50	7 50
J Clem Uhler, Trustee	71	50	7 50
J Clem Uhler, Trustee	72	50	7 50
J Clem Uhler, Trustee	73	50	7 50
J Clem Uhler, Trustee	180	500	75 00
J Clem Uhler, Trustee	181	500	75 00
J Clem Uhler, Trustee	182	500	75 00
J Clem Uhler, Trustee	183	500	75 00
J Clem Uhler, Trustee	184	100	15 00
J Clem Uhler, Trustee	185	100	15 00
J Clem Uhler, Trustee	186	100	15 00
J Clem Uhler, Trustee	187	100	15 00
J Clem Uhler, Trustee	188	100	15 00
J Clem Uhler, Trustee	189	100	15 00
J Clem Uhler, Trustee	190	100	15 00
J Clem Uhler, Trustee	191	100	15 00
J Clem Uhler, Trustee	192	100	15 00
J Clem Uhler, Trustee	193	100	15 00
J Clem Uhler, Trustee	194	100	15 00
J Clem Uhler, Trustee	195	100	15 00
J Clem Uhler, Trustee	198	100	15 00
J Clem Uhler, Trustee	197	100	15 00
J Clem Uhler, Trustee	198	100	15 00
J Clem Uhler, Trustee	199	50	7 50
J Clem Uhler, Trustee	200	50	7 50
J Clem Uhler, Trustee	201	50	7 50
J Clem Uhler, Trustee	202	50	7 50
J Clem Uhler, Trustee	203	50	7 50
J Clem Uhler, Trustee	204	50	7 50
J Clem Uhler, Trustee	205	50	7 50
J Clem Uhler, Trustee	205	50	7 50
J Clem Uhler, Trustee	207	50	7 50
J Clem Uhler, Trustee	208	50	7 50
L L Robinson	210	500	75 00

And in accordance with law, and an order of the Board of Trustees, made on the 19th day of June, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of tha Company, No. 409 California street, San Francisco, California, on the 20th day of August, 1872, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale. T. F. CRONISE, Secretary.

Office, 409 California Street, San Francisco, California.

At a meeting of the Board of Trustees held this day, the above sale was postponed to Monday, the 16th day of September, 1872, at the same place and hour.

T. F. CRONISE, Secretary.

San Francisco, Cal., August 19, 1872.

POSTPONEMENT.—At a meeting of the Trustees, held this day, the above sale was postponed to Wednesday, the 15th day of October, 1872, at the same hour and place. T. F. CRONISE, Secretary.

San Francisco, Cal., Sept. 16, 1872.

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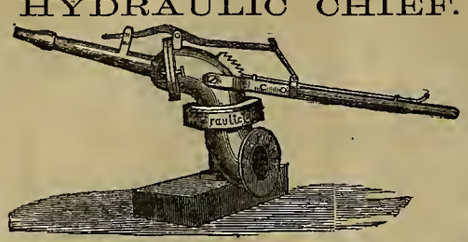

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A complete set of Machinery of our own design and patent for extracting oil from Castor Bean, dispensing with Hair Cloth. Also Machinery for Flax Seed Oil, Mustard Seed Oil, and Sun Flower Seed Oil.

MARBLE MACHINERY

For sawing Marble of any thickness or size.

Irrigating Pumps. Steam Pumps.

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137 and 139 First st., near the Gas Works, San Francisco.

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IRON FOUNDERS.

IRON CASTINGS of all descriptions at short notice.

NOTICE.—Particular attention paid to the making Superior Shoes and Dies. 3v24-3m

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ALL KINDS of Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch

☞ PRICES MODERATE. ☜

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PRESCOTT, SCHEIDELL & CO.,
MARYSVILLE FOUNDRY.

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STEAM ENGINES,

STATIONARY AND PORTABLE

SAW AND GRIST MILLS,

Hydraulic Machinery,

Quartz Crushing and Amalgamating Machinery

Of every description, constantly on hand.

Plans and estimates furnished upon application. Repairs upon all kinds of Machinery promptly made, and at moderate charges.

Having unrivalled facilities, we are prepared to make to order, at short notice, anything required in our line.

Specimens of our work may be seen in all the mining regions on this coast.

THE RISDON
Iron and Locomotive Works.

INCORPORATED.....APRIL 30, 1868.
CAPITAL.....$1,000,000.

LOCATION OF WORKS:
Corner of Beale and Howard Streets,
SAN FRANCISCO.

Manufacturers of Steam Engines, Quartz and Flour Mill Machinery, Steam Boilers (Marine, Locomotive and Stationary), Marine Engines (High and Low Pressure). All kinds of light and heavy Castings at lowest prices. Cams and Tappets, with chilled faces, guaranteed 40 per cent. more durable than ordinary iron.

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WM. H. TAYLOR.....President.
JOSEPH MOORE..Vice-President and Superintendent.
LEWIS R. MEAD.....Secretary
24v17-oy

NOTICE.

THE PROPRIETORS OF THE

VULCAN IRON WORKS

HAVING RECENTLY REFITTED THEIR Shops with New Tools of late and modern improvements, have facilities unequalled by any establishment in San Francisco, for turning out with dispatch all classes of machinery used on the Pacific Coast.

The variety and completeness of our Patterns enable us to supply the general wants of the Pacific States and Territories at the lowest possible rates.

Office—135 and 137 Fremont St.,

BETWEEN HOWARD AND MISSION, S. F.

ARNOT, BIRCH & CO.,

Proprietors.

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12v25-tf

Miners' Foundry and Machine Works,

CO-OPERATIVE,

First Street, bet. Howard and Folsom, SAN FRANCISCO

Machinery and Castings of all kinds.

Notice is hereby given, that the copartnership heretofore existing between A. J. Severance, Charles W. Randall and J. Gus. Burt, under the firm name of "Severance, Holt & Co.," is this day dissolved by mutual consent. A. J. Severance, having purchased all the interest of his late partners, will continue the business of manufacturing and selling Diamond Drills, as before, under the style of A. J. Severance & Co.

Dated San Francisco, Nov. 24, 1871.

Office, 316 California street. A. J. SEVERANCE,
CHAS. H. RANDALL.
22-v23-4f J. GUS. BURT.

THOMPSON BROTHERS,
EUREKA FOUNDRY,

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LIGHT AND HEAVY CASTINGS,

of every description, manufactured. 24v15qr

Machinery.

Varney's Patent Amalgamator.

These Machines Stand Unrivaled.

For rapidity pulverizing and amalgamating ores, they have no equal. No effort has been, or will be spared, to have them constructed in the most perfect manner and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the aperture and between the grinding surfaces.—Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Setlers made on the same principle excel all others They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill-men are invited to examine these pans and setlers for themselves, at the office, 229 Fremont Street, San Francisco.

FOUNDERS AND MACHINISTS.

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Union Iron Works,

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Manufacture Mill and Mining Machinery,

From the Smallest to the Largest Capacity, on the Shortest Notice, and Guaranty Satisfaction.

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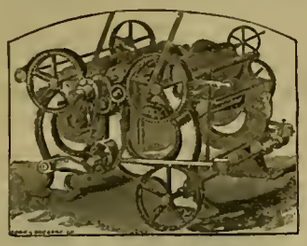

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ROCK DRILLS

AND

AIR COMPRESSORS.

The Burleigh Rock Drills, which have stood the test of five years constant use at the Hoosac Tunnel, and which are now in use in nearly every State in the Union, as well as in Europe and South America, are unequalled in efficiency and economy by any other Drilling Machine. They are of various sizes, and equally well adapted to Tunnelling, Shafting, Open Cut or Quarrying, and will drill six to ten inches per minute in granite. They are driven by steam above ground, or compressed air when under ground. The Burleigh Air Compressor is the best engine yet devised for furnishing the "air motor" for the many purposes to which it is now being applied.

Send for illustrated pamphlet to

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FITCHBURG, MASS.

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SHEET IRON PIPE.

THE

Risdon Iron and Locomotive Works

Corner Howard and Beale Streets,

Are prepared to make SHEET IRON AND ASPHALTUM PIPE, of any size and for any pressure, and contract to lay the same where wanted, guaranteeing a perfect working pipe with the least amount of material.

Standard sizes of railroad Car Wheels, with special patterns for Mining Cars. These small wheels are made of the best Car Wheel Iron, properly chilled, and can be fitted up with the improved axle and box—introduced by this company, and guaranteed to outlast any other wheels made in this State.

☞ All kinds of Machinery made and repaired.

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Manufacturers of New Files.

Old Files re-cut and warranted equal to new.

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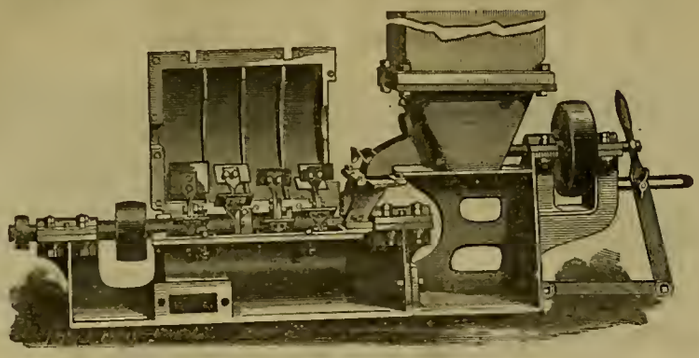
at a saving of 50 per cent. Orders from the country promptly attended to. 9v19-by

WHELPLEY & STORER'S ORE PULVERIZER,



For Reducing Ores to Fine Powder.

OFFICE OF SWANSEA MELTING AND REFINING COMPANY OF CHICAGO.
CHICAGO, July 15, 1872.

L. P. DODGE, Esq., Agent for Messrs. WHELPLEY & STORER—Dear Sir: Your communication of the 10th instant is at hand. In reply would say that we have been running a Whelpley & Storer Pulverizer for the last six months, grinding ores of different kinds, some of them exceedingly hard. The operation of the Pulverizer has been, in every respect, a complete success, grinding very fine, with but little power required to drive it, and but slight expense for wearing parts. We cordially recommend them to all parties requiring a Pulverizer for mining or other operations. Respectfully, J. W. JONES, Superintendent, etc.

May be seen in practical operation on Main street, between Howard and Folsom, San Francisco.

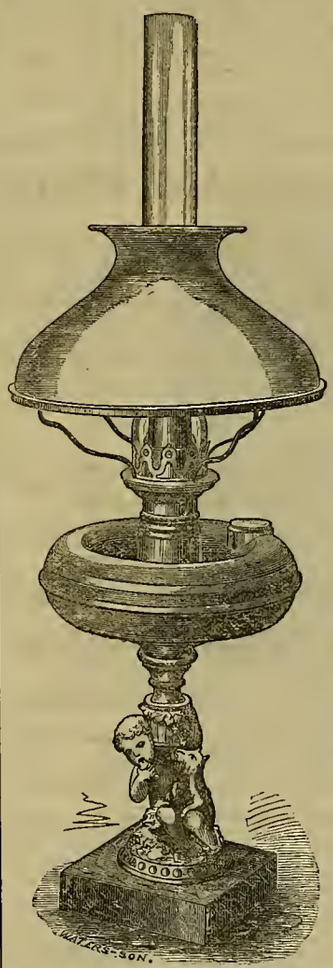
This Machinery has been adopted by nearly all the Eastern reduction works for reducing ores.

Parties purchasing machinery will find it for their interest to examine this before purchasing elsewhere.

9v25-3m GEO. D. WYMAN, Agent Pacific Coast.

BRIGHT UNION SAFETY LAMP.

A CALIFORNIA INVENTION.

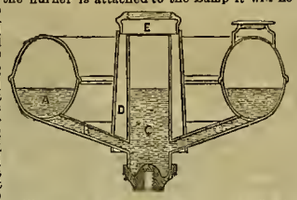


Patented May 30, 1871. Is the Best and Safest Lamp ever put in the market, for the following reasons:

1st.—The Lamp is constructed with two tubes, as will be seen in cut, the outside one (D) intended only for the attachment of the burner, and the inside one (O) to contain oil and receive the wick. As there is no connection between these tubes, it will be evident that there is no possibility of communicating any heat to the oil; and as long as the oil in a Lamp can be kept perfectly cool, there is, of course, no chance for an explosion.

This Lamp is the only one ever invented in which this result has been secured.

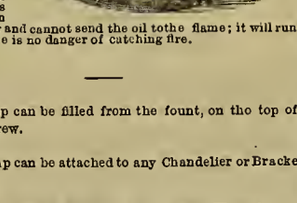
2d.—When the burner is attached to the Lamp it will be seen that there is no opportunity for the oil to escape should the Lamp be overturned, and in case any accident should occur the worst consequences that could ensue would be the breaking of a chimney or shade. From these facts it will be evident that those who adopt this Lamp will secure themselves against the possibility of fire or explosion arising from the use of kerosene oil.



3d.—The Lamp is strongly and well made, attractive in appearance, and something entirely new and novel. It will burn kerosene adapted to any burner. With all of these advantages it combines cheapness, and from present indications it is destined to become very popular.

4th.—The tube to which the burner is attached (D) is free from the tube of the oil (O), and a space for air, passing from the lower end, between the tube of the burner and the tube of the oil, keeps it always cool.

5th.—The burner is the cause of generating the gas in a Lamp. It cannot do it in this Lamp, as the burner is set on a tube which contains no oil, consequently it cannot make any gas.



6th.—In case of accident, the Lamp falling or thrown over, by which many explosions occur, is the cause of the oil rushing to the flame. In this Lamp it is not so; it can be thrown over and cannot send the oil to the flame; it will run from it, so there is no danger of catching fire.

This Lamp can be filled from the fount, on the top of which is a screw.

This Lamp can be attached to any Chandelier or Bracket made.

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The "BRIGHT UNION" and all Trimmings can be had by addressing the Patentee,

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We purchase Ores, Bullion, etc. Ores worked Tests made with care. Also, Assays of Gold, Silver Copper, Lead, Tin and other Metals. 23v22tf

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J. A. MARS, Assayer.

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RICHARDSON & Co. have been for thirty years established in Swansea as Agents for the preparation, Sampling, Assaying, and Sale of Copper, Silver, Gold, Lead, Zinc, and all other Ores and Metals, for which they have extensive Warehouses and Wharves under cover, 1,000 feet of Quay Frontage within the Floating Dock, and the most complete Machinery and Appliances. They are also prepared to make advances against Ores in anticipation of realization, and to guarantee all payments when required. 17v24-ly

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Vessels, Apparatus, Shot, Wire, Etc., Etc.

For all Laboratory and Manufacturing Purposes

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Having been engaged in furnishing these supplies since the first discovery of mines on the Pacific Coast.

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Silver-Plated Copper Amalgamating Plates, for Saving Gold.

Of all sizes and in any quantity, furnished to order. Full instructions sent for operating.

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NELSON & DOBLE,

AGENTS FOR

Thomas Firth & Sons' Cast Steel.

MANUFACTURERS OF

Sledges, Hammers, Stone Cutters', Blacksmiths' and Horse-Shoers' Tools.

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"Indefatigable Energy and Industry."

We made mention yesterday of the arrival of L. P. McCarty, the well known and reliable correspondent of the San Francisco MINING AND SCIENTIFIC PRESS. Mr. McCarty was here some weeks ago, and made a thorough examination of our district. From Eureka he wrote a five column letter to his paper, giving a more complete resume of mining and business matters in this section than we thought possible to crowd into a letter of that length. All the principal mines, including a description of the various works, and the names of the managers, are alluded to with the utmost accuracy. In fact, we have gathered several points from Mr. McCarty's letter relative to our district, that we did not know before. For instance, he informs us that there are about twelve hundred claims located in the district, exclusive of sixty tunnel sites located under the new law of Congress. Taken throughout, the correspondence bears the impress of truth and indefatigable energy and industry. Such letters, from an acknowledged and reliable source, brought direct to the attention of the mining world, must necessarily be productive of great good to our growing camp. Mr. McCarty has taken notes in all of the prominent districts of Eastern Nevada, and for the next three or four months his paper will contain truthful accounts of the immense wealth of this section of the State. He leaves to-morrow for Austin and Belmont.—*Eureka Sentinel, Aug. 16th.*

The United States Mining Laws.

The MINING AND SCIENTIFIC PRESS publishes in neat, convenient form, and on good paper, the "United States Mining Laws and Regulations Thereunder," from official copy. Of course, to all in any way interested in mining, it is a great convenience to be able to refer to these laws whenever the necessity presents itself. Sold at the office of the MINING AND SCIENTIFIC PRESS for twenty-five cents. —*S. F. Daily Chronicle.*

To Inventors in the Pacific States.

The best, speediest, and surest method for you to obtain patents, file caveats, or transact any other important business with the Patent Office at Washington, or with foreign countries, is through the agency of DEWEY & CO., PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS, SAN FRANCISCO, an able, responsible, and long-established firm, and the principal agents on this side of the continent. They refer to the thousands of inventors who have patronized them, and to all prominent business men of the Pacific Coast, who are more or less familiar with their reputation as straightforward journalists and patent solicitors and counsellors. We not only more readily apprehend the points and secure much more fully and quickly the patents for our home inventors, but with the influence of our carefully read and extensively circulated journals, we are enabled to illustrate the intrinsic merits of their patents, and secure a due reward to the inventor, besides serving the public who are more ready to give a fair trial, and adopt a good thing, upon the recommendation of honest and intelligent publishers.

To Obtain a Patent,

A well-constructed model is generally first needed, if the invention can well be thus illustrated: It must not exceed 12 inches in length or hight. When practicable, a smaller model is even more desirable. Paint or engrave the name of the article, and the name of the inventor, and his address upon it.

Send the model (by express or other reliable conveyance), plainly addressed, to "DEWEY & Co., MINING AND SCIENTIFIC PRESS OFFICE, SAN FRANCISCO." At the same time, send a full description, embodying all the ideas and claims of the inventor respecting the improvement describing the various parts and their operations.

Also send $15 currency, amount of first fee of the Government. The case will be placed on our regular file, the drawings executed, and the documents made up, and soon sent to the inventor for signing.

As soon as signed and returned to us with the fees then due us, it will be sent straightway to the Patent Office at Washington.

When the invention consists of a new article of manufacture, a medicine, or a new composition, samples of the separated ingredients, sufficient to make the experiment (unless they are of a common and well-known character), and also of the manufactured article itself, must be furnished, with full description of the entire preparation.

For Processes, frequently no model or drawings are necessary. In such case, the applicant has only to send us an exact description, and what is desirable to claim.

For designs no models are necessary. Duplicate drawings are required, and the specifications and other papers should be made up with care and accuracy. In some instances for design patents two photographs, with the negative, answer well instead of drawings.

We do not require the personal attendance of the inventor, unless the invention is one of great complication. Usually the business can be well done by correspondence.

For filing a caveat, which affords the inventor protection for one year, we only require a rough sketch, and a clear description of the invention.

It will cost inventors less to have their business thoroughly and speedily done through our agency than to patronize less able and responsible agents.

For further information, send a stamp for our illustrated circular, containing a digest of PATENT LAWS, 112 illustrated mechanical movements, and HINTS and INSTRUCTIONS regarding the RIGHTS and PRIVILEGES of inventors and patentees, which will be furnished post paid. Also a copy of NEW PATENT LAW of 1870.

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The Little Giant was Awarded a Special Premium of a Silver Medal
AT THE STATE FAIR OF CALIFORNIA IN 1872.

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August 7, 1872. 15v25-tf

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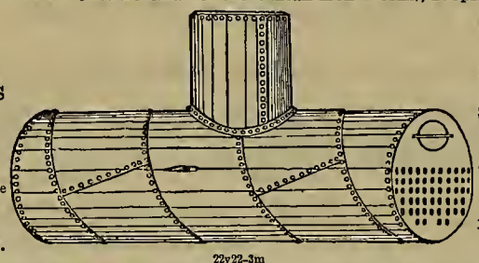
F. I. CURRY (late Foreman of the Vulcan Iron Works), Proprietor.

High and Low Preesure **BOILERS** of all descriptions.

SOLE Manufacturers of the CELEBRATED **SPIRAL BOILER.**



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All kinds of **JOBBING** and Repairing Promptly Attended to.

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GIANT POWDER, A NO. 2 GIANT POWDER,

Somewhat slower in its Explosion, which we recommend for

BANK BLASTING, COAL MINES,

AND FOR ALL SUCH WORK WHERE THE ROCK IS NOT VERY HARD

It is fully as safe as the other and evolves neither smoke nor noxious fumes when exploded.

Price. 50 Cents per Pound.

The sales of both grades increase very fast, which is the best proof of their superiority over other explosives.

BANDMANN, NIELSEN & CO.,
20v22-3m16p General Agents, No. 210 Front Street.

BLAKE'S PATENT STEAM PUMP.

BELMONT, Cal., February 6th, 1872.

MESSRS. TREADWELL & CO.—Gentlemen: In reply to your inquiry concerning the large Blake Steam Pump, purchased of you by Mr. Ralston, I will say that it gives ENTIRE SATISFACTION, even working as it now is, where no other Pump could; for it is at present SIX FEET UNDER WATER, yet it does its work PERFECTLY.

Yours, etc.,
J. E. BUTLER,
Supt. Water Works and Engineer at W. C. Ralston's.

TREADWELL & CO., San Francisco, Selling Agents for Pacific States.

☞ Machinery Depot for Miners, Millmen, and Engineers' supplies. Iron and Wood Machinery; Portable Engines; Mills; Machinists' and Mechanics', Miners' and Farmers' Tools; Sturtevant's Blowers, Turbine Water Wheels, Gardner Governors, Hardware, Rope, Nails, Wire, Hose, Mining Goods, Belting, Packing, Felting, and general Mill and Mining Supplies. 8v25eowhp

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* * * It is the best single English treatise we know of for the use of prospectors and practical miners. * * —[The Engineering and Mining Journal.

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Can now be secured to advantage under the NEW LAW in the United States. Parties interested will be furnished with all information desired, and have their application intelligently prepared and promptly forwarded to the Patent Office, and their patents secured in good time, by DEWEY & CO., U. S. and Foreign Patent Agents, No. 338 Montgomery st., S. F. hp-16p

A Splendid Paper.

MESSRS. EDITORS:—Your RURAL PRESS is a splendid paper. I am very much pleased with it.

L. S. PRESTON,
Point of Timber, Cal., Oct. 5, 1872.

C. P. R. R.

COMMENCING
Monday, October 7th, 1872.
And until further notice, Trains and Boats will

LEAVE SAN FRANCISCO.

7.00 A. M. (Daily). Atlantic Express Train (via Oakland) for Sacramento, Marysville, Redding, and Portland, O. Ooifax. Reno, Ogden and Omaha.

7.15 A. M. (Daily). Cal. P. R. R. Steamer (from Broadway Wharf)—Connecting at Vallejo with Trains for Callstoga, Knight's Landing and Sacramento; making close connection at Napa with stages for Sonoma.

2.00 P. M. (Sundays excepted). S. F. & N. P. R. R. Steamer (from Broadway Wharf), connecting at Donahue with Trains for Cloverdale. Making close connection at Lakeville with stages for Sonoma.

2.00 P. M. (Sundays excepted). Stockton Steamer (from Broadway Wharf), touching at Vallejo, Benicia, and Landings on the San Joaquin river.

3.00 P. M. (Daily). San Jose Passenger Train (via Oakland), stopping at all way Stations.

4.00 P. M. (Sundays excepted). Passenger Train (via Oakland) for Lathrop, Merced, Visalia, Tipton, and Los Angeles, Stockton and Sacramento.

4.00 P. M. (Sundays excepted). Cal. P. R. R. Steamer (from Broadway Wharf) connecting at Vallejo with Trains for Calistoga, Knight's Landing and Sacramento.

4.00 P. M. (Sundays excepted). Sacramento Steamer (from Broadway Wharf), touching at Benicia, and Landings on the Sacramento river.

6.30 P. M. (Daily). Overland Emigrant Train (via Oakland)—Through Freight and Accommodation.

OAKLAND BRANCH.—LEAVE SAN FRANCISCO, 7 00 8 10, 9 2 1, 10 10 and 11 29 a. m., 12 10, 1 50, 3 00, 4 00, 5 15, 6 30, 8 15 9.20 and *11 30 p. m. (9 20, 11 20 and 3 00 to Oakland only).
LEAVE BROOKLYN (for San Francisco), *5 30, 6 40, 7 50, 9 00 and 11 00 a. m., 1 30, 2 40, 4 55, 6 10, 7.55 and 10 10 p. m.
LEAVE OAKLAND, *5 40, 6 50, 8 00, 9 10, 10 00, and 11 10 a. m., 12 00, 1 40, 2 50, 3 50, 5 05, 6 20, 8.05 and 10 20 p. m.

ALAMEDA BRANCH.—LEAVE SAN FRANCISCO, 7 20, 9 00, and 11 15 a. m., 1 30, 4 00, 5 30, and 7 00 p. m. (7 20, 11 15, and 5 30 to Fruit Vale only).
LEAVE HAYWARDS (for San Francisco), *3 45, 7 00 and 10 45 a. m., and 3 30 p. m.
LEAVE FRUIT VALE, *4 40, 7 35, 9 00 and 11 20 a. m., 1 30, 4 05 and 5 30 p. m. * Except Sundays.

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MINING AND SCIENTIFIC PRESS.

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SAN FRANCISCO, SATURDAY, OCTOBER 19, 1872.

VOLUME XXV. Number 16.

A Jury of Experts.

Two remarkable series of trials, one on the Atlantic and tbo other on tbe Pacifio Coast, bave lately attracted a large amonnt of attention and bave prominently indicated the ntter nnfitness of our jurors, as now selected, to decide qnestions which involve scientifie data. Believe as we will of the justice of the final decisions, our reflections must be full of misgivings concerning our jury system.

The details of the trial of Dr. Scboeppe have been widely pnblished, but a brief outline of the facts may be given here. The doctor was tried some time ago on a charge of poisoning; a certain Prof. Aiken testified to the presence of poison in the stomach of the person snpposed to bave been murdered, and mainly on the strength of this evidence the doctor was fonnd gnilty and condemned to death. By most persistent exertions on the part of bis friends, aided by a number of chemists who decided Prof. Aiken's analysis entirely incorrect, with great difficulty a second trial was secured for the doctor. He was then acqnitted, the msin point of the prosecution, the testimony of Prof. Aiken as to the presence of tbe poison in the stomach of the dead person, being overthrown. So great was the excitement that the jndge publicly "thanked God tbat *Providence had interposed* to prevent a great wrong!"

Of the two trials of Mrs. Fair we need give no details. They have been the prevailing topics of conversation for a long time. Mrs. Fair has been decided to have been insane by twelve men who are ignorant of all the phases of insanity. We do not mean here to sey that their verdict was wrong; but we desire to point out tbat their decision has failed to have the slightest influence on the opinions of any person.

Tbese are two of tbe most prominent of the oases which are daily occurring, in which questions of life or death, questions involving the highest and most delicete skill of the physician and of the chemist, are decided by persons unacquainted with even the terms of science. Had the wit of man been employed to devise tribunals more nnfitted for such purposes, it might easily have exhansted itself in the vain attempt. The thing would appear most snpremely ridicnlous, were it not for the fact that the life of our fellow beings were endangered. That this condition of affairs should be allowed, verges upon the criminel.

The present method of selecting jnries, which substantially excludes all men of average intelligence in any prominent trial, is bad enough in any case. In trials where the life of the accused is at stake, it is horrible. In matters where even the highest authorities might hesitate to decide, twelve ignorant men are called on to deliver an authoritative verdict. The result is that tbey either act blindly from prejudiee previously conceived, or they accept blindly data given them by men supposed to be skilled, but of whose skill even they are nnable to judge, or they are led away by the specious pleadings and superior persuasiveness of that advocate who knows best how to touch their sensibilities. In no case can tbeir verdict, from the ntter absurdity of the circumstances, have any real value.

Tbe manner in which evidence is procured and taken in such triale ie ill-fated to elicit truth and to furtber tbe ends of justice. One side procuree its scientific witness and the other side procuree its scientifio witnese, each of whom is biassed, by his wishes, interests, passions or pretensions, in favor of the side on whicb he is called to give evidence. He is examined and cross-examined by tbose who wish—not to elicit the truth, the whole truth, and nothing but the truth—but jnst so mnch as will serve their pnrpose. If testimony is to be broken down, a lawyer finds it easy to do ao in appearance at least, on acconnt of the entire ignorance of the jury in scientifio matters. Puzzling qnestions, or such as may serve to embarass a competent authority or *appear* to embarass him, and remarks on matters entirely nnconnected with tbe question at issue, often have more weight, if skillfully applied, on the jury, than any amonnt of valuable evidence.

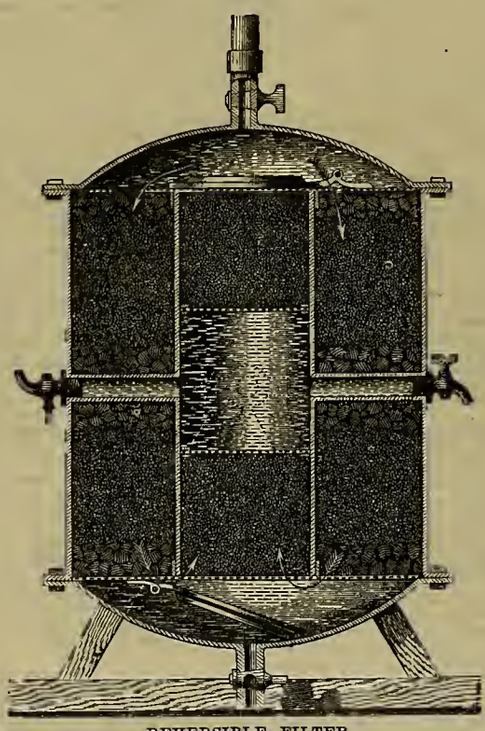
It would seem an elementary principle of common sense that competent men should be called on to decide important questions. No business man would even think of intrnsting his business qnestions of import to persons selected under onr jury-system. It would seem an elementary principle of justice that a prisoner on trial for his life should have the right to claim a jury of men specially competent, or at any rate not absolutely incompetent, to judge of the facts on which his defence is based.

Tbe *American Artisan*, commenting on the Schoeppe trial, advocates a special court or *jury of experts* to pass npon the value of expert evidence in all trials whore such evidence is introduced, their verdict or decision upon this point to be accepted as finel with the jury which passes upon other questions of fact. This snggestion should be followed out. Else we shall be obliged to aweit the "interposition of Providence," in the words of the judge above spoken of, day after day to preveut great wrongs. Bnt the doctrine that we can act as foolishly or as wickedly ae we choose without evil results, on account of the continned interposition of Providence, is as absurd as it is blasphemous.

Reversible Water Filter.

A filter that eannot be reversed, and thns made self-clesning, says the *Scientific American*, is not worth much. A filter tbat does not allow the filtered water to rise, instead of falling, into the pure water chamber, is imperfect.

The accompaning engraving represents a filter adapted to all the purposes for which filters are used, which is essentially a self-cleaning filter, in which the water leaves all its sediment behind as it bubbles up into the pure water ohamber in tbo center of the filter. The filter is supported on central trunnions in a wooden frame, and is turned, end for end, by simply detaching the snpply pipe. The valves act by their own gravity as the filter is reversed.



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The Advance in Iron.

Tbe mining, railroading and mechanical interests heve all been taken by surprise at the greet advance in the price of iron. Fnrnaces and rolling mills that had been lying idle for months and years, are all suddenly celled into requisition, new ones are being constructed and put in operation, and still the price of iron goes up. We believe there is no good reason wby it should be. There has been no material advance in the iron laborers' wages, no advance in the price of coal, and but little, if any, in the transportation of ores or the manufactured iron. We cen eee no greet disperity between the demand and enpply, and yet iron is advancing. It is thue without any good or legitimate cause, and therefore cannot long continue.

Coal.—A valnable coal mine has been discovered abont 25 miles from Virginia, Montana; an important "find" in that part of the country.

A New Motor for Sewing Machines.

For several years it has been tbe aim of a large class of inventors to devise a simple, cbeap and convenient motive power for a sewing machine, and thns do away witb the difficult and injurions treadle movement by whicb these machines have always been run. The great need of such a power has called ont a large number of applications for tbis purpose, amongst whicb we have noticed several methods of applying spring power. In a nnmber of cases weights have been proposed. Quite a number of electro-magnetic motors have been invented, patented and tested, amongst which the most notable of which we have any account is tbe one patented by Stevens & Hurdy, of this city, in whicb the needle arm of tbe mechine was driven directly from the armatures of the electro-msgnets, withont the intervention of a wheel or gear. Water engines have also been suggested, and in several instances applied for this pnrpose, bnt none of the many devices snggested seems to have combined the necessary degree of simplicity, economy and convenience, that the subject demanded by reason of their not having been generally adopted. We next find the inventive talent directed towards improving the treadle, so as to avoid the injuriousmovement of the ordinary treadle, and quite a number of ingenious arrangements have been presented.

But, notwithstending, so many efforts, it remained for an Oakland mechanic and inventor to snggest what to us seems the most simple, economical and practical power yet presented for this purpose. We refer to Isaac Hyde's applicatiou of an ordinary water wheel for driving a sewing machine. As at present constructed an ordinary hurdy-gurdy wheel, about twelve inches in diameter, is nsed. The ordinary driving shaft of the sewing machine is extended to one end of the table, and the wheel is secured npon this extended shaft, a neat case encloses the wheel, and the water for driving the wheel is snpplied throngh a pipe or hose which leads from tbe water pipes, which convey water through the house and is delivered upon the wheel throngh a nozzle of extremely small diameter. The water after being used is conveyed through anotber hose or pipe to any convenient receptacle, where it can be stored for varions household uses. The pipe through which the water is condncted to the wheel passes along under the macbine near the ordinary treadle shaft, and a cock is arranged upon it which is operated by a treadle, so that the operator cen, hy a simple movement of the foot, admit or sbut off the water at pleasure. A recent test of the amount of water reqnired to drive the machine with a wheel of this description showed that three quarts per minute, nnder the pressure in our city pipes, could run the wheel at 900 revolutions per minute. The attachment is very neat in appearance, and in no way complicates the operation or movements of tbe machine. The patent for this invention was procured through the Mining and Scientific Press Patent Agency, and has been assigned to Oscar J. Baokus, of this city, to whom all communications shonld be addressed.

Gold Bluff.—Tbe schooner Witch Queen has returned to Gold Blnff, after having completed the repaire to the diving-bell apparatus, and we will probably hear something definite soon ae to the enccese of the expedition. The auriferons sends at the bottom of the ocean are reported as fabulonsly ricb, and it only remains for them to pump them up and prove that snch is the case.

CORRESPONDENCE.

Mining in Utah—List of Patented Mines—New Improvements in Salt Lake City—Walker House, Etc.

EDITORS PRESS.—Mining in Utah has proved a decided success this past summer. The mines in all of the old districts have been very generally worked, and a number of new districts have been organized, which already are extensively prospected with very promising results. Many large sales have been effected and several companies incorporated with large amounts of capital, who are now actively engaged in developing their property. A great many prospects have been developed into good mines, and those mines which have been worked, seem to prove beyond the possibility of a doubt that our mineral resources are as rich as they are inexhaustible. Several very fine coal beds and iron mountains have been discovered in both the northern and southern portions of the Territory that will prove of immense value to the fortunate owners and discoverers when the iron horse which is now being rapidly extended north and south reaches these respective localities. Sulphur has also been discovered in Fillmore county, and an extensive bismuth mine has been found in Beaver county, which is being worked and is developing finely. Whether or not Utah has proved a resting place for the Saints is a matter of dispute, but that it is destined to be the "miner's paradise" is already a settled question that will not admit of a shadow of doubt, as the country possesses almost every kind of metal known to mineralogy.

For the benefit of the numerous readers of the PRESS, I subjoin a list of those mines which have applied for and received United States Patents, and the respective districts in which they are located;

Mineral District No. 1.—West Mountain District, Salt Lake County:—Winnamuck, Dixon, Galena, Ely, George, Vespasian, Fliess, Merrimac, Yosemite, Dartmouth, Portland, Last Chance, Eagle Bird, Osceola and Lucky Boy consolidated.

Mineral District No. 2.—Lincoln District, Beaver county:—Rollins' Claim.

Mineral District No. 3.—Star District, Beaver county; Mars and Taylor lodes.

Mineral District No. 4.—Little Cottonwood District, Salt Lake county:—Emma, Flagstaff, Last Chance, Lavinia, Hiawatha and Grizzly.

Mineral District No. 5.—Big Cottonwood District, Salt Lake county:—Highland Chief, Sailor Jack, Prince of Wales, Homeward Bound and Congress.

Mineral District No. 6.—East Tintic District, Juab county:—Mammoth, Mammoth Northern Extension, Eureka and Montana.

Mineral District No. 7.—Camp Floyd District, Tooele county:—Marion, Sparrow Hawk, Last Chance, Consolidated Camp Douglas, Silver Star, Silver Circle consolidated, Wandering Boy, Star of the West, Silver Cloud and Silver Cloud Mill Site.

Mineral District No. 8.—American Fork District, Salt Lake county:—Miller, Wyoming, Sierra and Hudson.

Mineral District No. 9.—Ophir District, Tooele county:—San Joaquin, Shamrock, Monarch, Green Chloride, Aristotle and Boston Pet.

Mineral District No. 10.—Stockton or Rush Valley District, Tooele county:—Silver King No. 2 and First Extension West.

Mineral District No. 11.—Ohio District, Piute county:—Homestead and Daniel Webster.

Mineral District No. 12i—Lucine District. Box Elder county:—Independence mine.

The developments made this past season in the different mining camps has created a marvelous change in Salt Lake City. Improvements have been made as it were by the hand of magic, and so rapid has been the march of progress, that the city is almost unrecognizable to its friends of only a year ago. Beautiful cottages have taken the place of many of the old adobe huts built by the first settlers, while larger and more elaborate dwellings, are constantly going up, residences for both saints and sinners. Brigham Young, Jr., has erected a fine residence for his favorite wife, and the Prophet himself not disdaining the good things of earth has broken ground for a residence which is to cost $65,000. Main street, though not quite so bustling as Broadway or Market streets, presents a truly Metropolitan appearance, and the well patronized street railroad should be an encouragement to its proprietors to furnish more accommodations and also to build intersecting lines. Several new buildings are in process of construction for business purposes and it is anticipated that both gas and water works will be completed in the course of a few months. If the march of improvement goes on as rapidly in the future as it has during the past two years, there can be no doubt but that Salt Lake will very soon become the Queen City of the Rocky Mountains. From force of circumstances it must be the mining center of Utah and this fact alone is sufficient to ensure its permanent prosperity.

But the great feature of Salt Lake City at present is the new hotel, the Walker House, which was opened on the first of September by Messrs. H. S. Greeley & Co., who are well known on the Pacific Coast as competent and experienced hotel keepers. This hotel is certainly the finest in every respect betwen Chicago and San Francisco, and would be a credit to either of these cities. It is the universal opinion of those who have seen the estsbliehment that no finer or better furnished hotel can be found this side of New York, and that it reflects the highest credit upon the gentlemen whose enterprise has planned and erected it. The Walker House was built by the Walker Bros., merchants of Salt Lake, and is the largest hotel in Utah Territory. It is four stories high above the basement, and contains one hundred and thirty-two rooms for guests, including twenty-seven suites with private bath rooms attached. In the basement is a fine reading room furnished with all the principal American and foreign newspapers, a bar and a cigar stand, store room and barber shop, which contains five splendid baths. On the first floor are the dining rooms, office, telegraph office and kitchen, all fitted up with the very latest modern improvements, a well stocked news stand and a handsome cigar store. On the second floor are the parlors, elegantly furnished, and several suites of rooms, fitted up with every convenience and luxury.

The remaining floors are occupied with fine rooms, both single and en suite, and on the roof are large water tanks, which is pumped up by the steam engine in the basement, and thence supplied to the different rooms in the house. Telegraph wires connect from the office with every room in the building, and a patent fire alarm gives notice in the office of unusual heat in any room in the house. In brief, the arrangements and style of the Walker House entitles it to a place among the very first-class of hotels in the country, and we hope it may meet with all the success which the enterprise merits. B. A. M. F.

Notes on the Reduction of Gold Ores.

BY H. A. THOMPSON, M. E., OF MELBOURNE.

[Continued.]

In the reduction works of California, the loss of gold appears to be quite as great in amount, and to arise from the same causes as that sustained here; but the system they have adopted for its extraction is somewhat different. Their most approved plan is to crush coarsely in the stamping mill, and then to complete the reduction and amalgamate in circular pans, with mullers revolving on the bottom, which grind the coarse sand from the battery to a fine powder, along with mercury. Numerous contrivances for this purpose have been patented, but Wheeler's pans, lately introduced into this colony, are considered the most effective. From the extensive use of these pans in the treatment of mixed gold and silver ores, it is probable they are well adapted for that purpose, although no statistics have yet reached us that would allow of an exact comparison between the results obtained from them and those obtained by means of the longer-known processes. But I doubt if they would be any improvement on the best plans now in use here for the treatment of our auriferous quartz. Küstel (who is evidently a strong advocate for them) states that with these pans, ninety-five per cent. of the total gold contents can be extracted, *provided the quartz is free from auriferous sulphides*, that is, if it is all free gold that they have to deal with.

But with quartz of this kind, we could obtain nearly the same result from the cheaper plans we now use; and as well nigh all our veins yield sulphides in greater or less quantities, we must face the problem as it is, not as it might be. Judging from the trials already made, and the established principles on which all our operations must be founded, these pans are not likely to work satisfactorily on our pyritous ores, and where the sulphides are in large quantities, much gold would be lost. Some improvement has been made in this respect, by first grinding the sand to the degree of fineness required, and then raising the muller before the mercury is added, so as to have only a rubbing action while they are used for amalgamating. How this pan may answer for extracting the gold from the roasted sulphides has yet to be proved, but for ordinary tailings it will probably be equal to the arastra, that is, it may retain about one-third of the total gold contents of the sand.

The roasting of the quartz previous to crushing was, at one time, an almost universal practice in this colony; but this plan has been gradually abandoned on most of our mining fields, indicating that increased experience has proved the advantage gained was not equivalent to the extra cost incurred. Roasting is still in use on some of our gold-fields, where the sulphides are plentiful, and mercury is used in the coffers. Under these circumstances, the partial decomposition of the sulphides will decrease their tendency to act on the mercury. But it is probable that a still better result would be obtained by crushing the raw quartz without mercury in the coffers, using a concentrating process onteide; and the settling of this point well deserves the attention of the companies interested. Where it is intended to extract the pyritons gold, after the free gold has been obtained, roasting of the quartz before crushing is inadmissable, on account of the partial decomposition of the sulphide increasing the difficulty of separating them from the worthless sand.

In the course of experiments made at Clunes, it was found that the greater the heat to which the quartz was subjected, the greater was the loss of gold sustained. When the sulphides were on the outside of the pieces of quartz enbjected to the roasting process, a glazed slag (mixed silicates of iron and alumina) was formed, and throughout this slag part of the gold was distributed in minute particles, invisible to the naked eye. In the interior joints,—where only partial decomposition had taken place—black veins of melted sulphides were formed, with which the gold appeared to be intimately intermixed, instead of collecting together. The affinity of the mercury for the free gold was greatly affected, and this has generally been ascribed to the coating of the gold with a fine film of sulphur, although careful microscopic examination, with high powers, failed to detect any trace of this film. Lately, Mr. Latta has discovered that bringing gold up to a red heat produces the same effect,—the change being evidently confined to the exposed surface, as it disappears on this surface being broken.

When antimony is present in the quartz in quantities that will affect the mercury, it might be advisable to roast before crushing, for the purpose of volatilising the antimony. But even in these cases, it has yet to be seen whether still better results would not be obtained by depending on the concentrating process, and treating all the concentrated material in the same way as is used for the extraction of the pyritous gold.

Keeping before us the great loss inevitably sustained in the reduction of gold ores, even with the best appliances known,* it will be readily seen how greatly that lose may be increased by any carelessness or want of knowledge on the part of those in charge of the works. In nearly all the crushing establishments of this colony the work is carried on from day to day without an attempt being made to discover what is the amount lost, and in what form that loss occurs. Yet it will be seen from the above details, that any person having the control of these operations, should not only be acquainted with the principles on which they ought to be founded, but that he should be prepared to enter into the investigations required to enable him to ascertain the comparative efficiency of each part of the process.

For this purpose the mercury used should be carefully weighed at short intervals, to ascertain what the loss is, and in what part of the process it occurs. The tailings should also be sampled as they leave the crushing-house several times during the day, and the accumulated samples tested at the end of each week or fortnight, to ascertain what amount of gold is being lost. These samples may be sent to any competent assayer, where exact returns are required; but for ordinary work, rough assays by amalgamation, on the plan described in the Appendix, will be sufficiently accurate for general use; as these will come within fifteen per cent. of the actual gold contents, provided they are made with due care. Records should be kept of all these assays, and regular returns made, not only of the amount of gold obtained, but also of the gold and mercury lost, with full information as to how and where that loss occurs. The rough and ready system of dealing with the nice question of the extraction of gold, has been so long in use in this colony, that many will be surprised at the proposal that they should require such returns from the managers of mines, yet they are made regularly in the gold mines of Europe and South America, and in at least one of our large mines. Without them, companies are working entirely in the dark, and that in conducting operations where the loss at the best is very great. It might be supposed that there are not many companies in this colony so apathetic as to prefer remaining in ignorance of the extent of their loss, rather than enter on the active endeavor to reduce it, such knowledge would force them into. The outlay of a few shillings per week for material, and a little extra work for the manager, can hardly be considered a sufficient excuse for not prosecuting these investigations, and there can be no doubt they would result in a largely increased yield of gold.

The above notes refer to the extraction of the free gold only, and the treatment required to obtain the pyritous gold, the form in which probably eighty per cent. of the loss now sustained occurs, has yet to be considered.

The ores with which a great part of the gold now lost, is incorporated, are the iron and arsenial pyrites, the former being usually the richest in gold. They are found in greater or less quantities in all our quartz veins, the proportion in some cases reaching as high as ten per cent. of the vein stone, and varying in gold contents from a trace up to fifty ounces per ton.

Instances have been known where the sulphides have yielded over one thousand ounces of gold per ton, but these were no doubt exceptional cases. As a general rule, the value of the sulphides will be in proportion to their percentage in the quartz, and the amount of free gold obtainable by the ordinary process. While the sulphides in the heart of the vein may be rich, those in the slate immediately adjoining it are usually poor; and even in the vein itself there is great difference in their value. No trial of a single sample will, therefore, be any criterion of the average yield of the sulphides in a vein; any more than such trial would be of the average yield of the quartz.

The best test is to take a fair sample of the ordinary waste tailings, or the waste blanket sand, after the free gold has been extracted by the methods in use for that purpose, wash out the sulphides, and take a sample for assay. If this is done with due care, some trust may be placed in the results obtained; but the necessity for this care cannot be too strongly enforced, lest companies should be led into unwarranted expenditure in the endeavor to obtain gold which may not exist.

It may not be out of place to note here the principal characteristics of the iron ores to be treated.

The iron pyrites is a bisulphide of iron, crystallizing in the form of the cube. The color varies from bronze yellow to nearly silver white.

Faces of the crystals frequently striated. Brittle, but does not yield to the knife, and by this property it may be distinguished from copper pyrites, which it readily scratches. Specific gravity, from 4·6 to 5.

Chemical composition—Iron, 45 to 48 parts. Sulphur, 52 to 54 parts.

Arsenical pyrites crystallizes in the form of the rhomboid; the color is usually whiter than the iron pyrites. Specific quartz, 5·7 to 6·2.

Chemical Composition—Iron, 35 to 36 parts. Sulphur, 20 to 21 parts. Arsenic, 43 to 45 parts.

These ores are usually found together in the veins, sometimes one, sometimes the other, predominating. Galena is frequently associated with them; the chemical composition of this ore being—

Lead, 85 parts. Sulphur, 13 parts.

A trace of gold in chemical combination has been found in the iron ores, but the quantity was so little that it may be left out of the calculation, nearly all the gold being deposited mechanically, in minute particles in the sulphides, great part of them so small as to be invisible to the naked eye, and some of them requiring a good microscope to determine whether they are gold or not.

[To be continued.]

* The losses sustained in other gold-mining countries are very heavy, as the appended return, extracted from the *Journal of the Society of Arts*, will show:—

St. John del Rey (Brazils)	loss 30	per cent.
Brazils generally	" 30 to 35	cent.
Piedmont	" 35	per cent.
Zell	" 35 to 40	cent.
Hungary and the Tyrol	" 50	per cent.
Chili	" 66	per cent.

Kern County Mines.

The mining prospects of our county have not been for many years so encouraging as now. Its existence is no longer an experiment. The results of practical working, on a small scale, have demonstrated that the mines of Kern county are as rich, with a few exceptions, as any on the coast. The close proximity of the railroad, in a short time, will bring our mines to the gates of the sea, and put us in communication with all lands. Our resources, both agricultural and mineral, will become known, and as a consequence an influx of population and capital will follow; our mines will be opened and the thousands of acres of untilled lands in the Great Valley, Tehatchipah, South Fork and Linns Valley will, to a certain extent, be put under a high state of cultivation. Our mountains of gold will be made by the introduction of capital to yield up their wealth of untold millions, which now lies locked up in their ledges for want of developing power, enterprise and capital.

The late discoveries of new mines show that our mineral region contains large quantities of gold, yet; and corroborate the fact that our district is of considerable extent—more so than heretofore supposed.

Improved processes for the reduction of ores are being introduced throughout the mining regions of the world; and Swansea's secret power of reducing ores is becoming equalled. It is cheaper for Swansea to come to our mineral mountains than to move them to Swansea; and sooner or later she will have to succumb to Pacific Coast mines. The question of an opposition company to that of Swansea being formed in San Francisco has been talked of; if started, with equally as good reduction powers as Swansea possesses, we will see a new era in mining operations on this coast.

Parties have gone from here to San Francisco for the purpose of negotiating with capitalists who have already signified their intention of starting the Joe Walker mine. It is said that the water can be taken out for about $20,000 and that active operations can be resumed by an expenditure of $30,000, all told.

The mines of Kernville are looking up. The Bright Star and St. John mines are doing better than ever, and the McKeadney and Jupiter mines hold their own. We possess the mines, now let us interest capital and open them.—*Havilah Miner.*

MONTANA FAIR.—At the late Fair of the Montana Agricultural, Mineral and Mechanical Association, a considerable amount of gold, silver and copper ores was placed on exhibition. Hobert & Barton of the Star mine, Mullen Pass, received a premium for coal; Geo. McBurney also received one for building stone; Lewis, Bull & Co., Legal Tender mine, Jefferson county, premium for silver quartz; also for galena, both varieties from the same ledge; T. H. Klemeclimidt received a premium for a general collection of ores; a cabinet was also exhibited by G. E. McKiernan. Other ores and minerals were exhibited which were not entered for premiums. We are glad to see the general interest being manifested in the exhibition of mineral products, which should bear as conspicuous a place as agricultural in the Fairs of the Pacific States and Territories.

SCIENTIFIC PROGRESS.

Climatic Changes on the Earth.

At the last meeting of the California Acadsmy of Sciences Professor Geo. Davidson, President of the Academy, read an interesting paper sntitled "Suggestive of a Cosmical Cause for the Great Climatic Changes npon ths Earth." The paper had previously been snhmitted to Professor Agassiz who considsrsd it a new idea and worthy of promulgation. It read as follows:

Disliking theories and hypothesis, I must characterize as a suggestion what I have to state npon this subject. So far as I am aware, geologists have failed to indicate any reasonable or rational cause for the sub-tropical fossil flora and fanna found within the Arctic circle, and for the great ice shest—the nniversal glacier—which donbtless covered nearly the whole land from the poles toward the tropics at a comparatively recent period. To mention is to condemn the extravagant hypothesis of the changing of the direction of the earth's axis, as it involves changes necessarily of greater amount than the motion of a boy's top. Partial npheavals and great changes of the surface of the earth are insufficient to acconnt for the phenomena.

The palæontologist has roughly indicated by his zones of fossil flora, and fossil fanna, that the pole of the earth has not changed its direction, and the astronomer utterly rejects such a change. My suggestion is that we must look to a coemical cause for these phenomena, and that cause is in the material or materials burning upon the snrface of the snn.

The spectroscope has made known to us the connection between sudden outbursts of storms npon the snn's surface, and the exhibition of magnetic phenomena. This instrument has revealed to us a sun wherein a sudden outburst of luminous hydrogen, has increased the brilliancy of a star from the ninth to the second magnitude, and its comparative slow return to its formor condition.

It appears to me that herein we strike the key-note of the canses at work to solve our problem of short or long periods of varying climate npon the earth. If the above phenomenon is possible in one snn, it is possible in every one of the millions of millions of suns aronnd ns, and of course in ours. That such an eruption of burning hydrogen affected the planets revolving around that snn we cannot for one instant douht. To our instruments it was an exhibition of force lasting hut a few months, and its effect upon probable planets around that sun we can never know. Doubtless all new stars that have suddenly appeared with great brillancy were the exhibitions of similar forces. If such forces are possible for short periods, they are possible, and to my mind, more probable for comparatively long periods.

In onr snn the forces are evolved in irregular and also in moderately regular periods or cycles; and mnst have an infineuce npon the general climate of the earth and of the other planets. Even in this year of exceptionable heat over the earth, we have the resnlt of the spectroscope revealing an nnusual dsvelopment of incandescent magnesium over the sun's surface. If these forces of the sun exhibit themselves in short and long periods, we can comprehend how periods of almost nniversal flood, of earthquake and volcanic action, of a climate to develop sub-tropical fauna and flora, even within the Arctic circle; if a great ice sheet spreading from each pole over the land toward and even embracing the equator, may be not only probable, but place the two latter in full accord with the astronomical dictum that no violent change of the direction of the earth's axis is admissible. The spectrocope is the present means of gathering observations to test my suggestions, or to develop a law nnderlying these changes; and as we observe the exhibitions of the forces upon the surface of our sun, and note the effects upon the earth, we can also watch the changes npon Mars and the other near planets. But we cannot hope to determine the law of connection within a short time, unless some wonderful event happened in our sun similar to the sudden ontburst of luminons hydrogen in the star in the Northern Crown, to show us in an hour the effect that such great cosmical changes have npon the earth and other planets of our system; or unlsss other instrumental means, far beyond the capacity of the spectroscope, be devised to show minute connections between changes on the sun's surface and limited periods of earth phenomena, such as years of great heat, and earthqnake and volcanic activity, perhaps even years of peetilence, a long cycle of years may be required to demonstrate whether a law lies at the base of my suggestions.

Like the observers who make their measures to determine the gradual elevation or subsidence of continental shores, we may not learn the result, but we can aggregate observations for discussion by the next generation.

A RED COLOR has sometimes been observed in white lead, and has been formerly attributed to the preeence of silver. German investigations have recently shown that this is incorrect, and that the red tinge is due to defects in manufacture.

Boring for Science.

It sssms that the bors hole which is to bo pnt down in Englsnd, is not so mnch for the sake of discovering coal as to ascertain what the lower formations rsally are. The project is due to Mr. Willstt, and ho was incited to ths proposal by thinking of aome fitting method of greeting the British Association on its visit to Brighton. The happy thonght struck him that scientifio men could not he better met than by a scientifio work. Upon inquiry ho found that that not one single experiment for pursly scisntifio purposss in ths Southsast of England had svsr bssn made. He therefore considsred himself fortunate in having hit upon a problem yet unsolved. Hs pronounced the purposs of ths work to be "To ascsrtain (by actual experiment of a horing) the nature and thickness of the geological strata lying immediately beneath the lowsst seriss of the Wealdsn formation in Knt and Sussex (known as the Ashburnham beds). Thereby to put an end to the differsnce of opinion among scientifio men on the subject, who may otherwise continns to form adverse speculations for anothsr csntury. Subordinately, to ascertain whsther carhoniferous strata (as in Belginm and tbe Boulonnais district in France) extond ncross the channel in this direction. To endeavor to reach Palæozoic rocks, if such exist within 2,000 feet of the surface, and to ascertain the temperatures of the rocks (snccessively reached), by the methods and instruments recommended by the British Asseciation Committee ou Snhterranean Temperatnres." The bore hole will be nine inches in diameter, and the estimates of the depth to be snnk are max. 1,350 feet; min. 730 feet. The site is at the Councellors Wood, in the county of Sussex.—*Eng. and Min. Jour.*

Has Our Climate Changed.

Under the above heading a writer in the *Popular Science Monthly* gives conclnsive arguments in the negative. From the averages of observations made at Boston, New York, Philadelphia and Charleston it would seem that, so far from changing, the averages of each decade for the last one hundred years have been strikingly near equivilence. We constantly meet with statements in the press of the country made by *psuedo-savants* to the effect that our climate is becoming more extreme and the rainfall less. So frequent have been these assertions that most intelligent persons whose means of arriving at the figures in the case are limited, have had no doubt of the truth of these assertions. Yet, if the data cited by this writer are correct, there would seem to be no shadow of basis in the truth of either assertion. What a study of the meteorological variations of the climate extending over several hundred years would show there is no knowing, but it is fair to suppose that there has been no great change. That there are cycles of climatic phenomena is undoubted, bnt their recurrence is marked by no great change in the averages, such as should lead us to believe that our climate is becoming more extreme. As far as imperfect observations go, it would seem that there have been no considerable changes in the climate of any country within the last thousand years.

A TRUE AND REAL SCIENTIST.—The illnstrious chemist, Scheele, of Sweden, lived and died an humble apothecary, in the little town of Koping. Althongh he died at the age of forty-three, his career as an investigator is unequslled in brillancy, especsially considering the fact that he had only the simplest apparatus and vesssls that he could contrive and make for himself. He examined the question of changing water into earth, discovered oxygen and nitrogen in the air, chlorine, manganess, barytes, tungsten, molybdenum, prussic acid, hydrofluoric acid, glycerine, and citric, tartaric, oxalic, malic, tannic, uric, and lactic acids.

When the King of Sweeden visited Paris, Lavoisier and all the learned men inquired about Scheele, but the King had never heard of him. He wrote home at once and ordered his ministers to look him up. The only Scheele who could be found was a clerk in one of the government offices, so he was knighted and pensioned. But when the king returned the real Scheele was found, and offered every inducsment to take up his residence in Stockholm, but he preferred his shop in Koping, and lived and died in his little laboratory. *Prof. Chandler.*

BAROMETRIO PRESSURE AND LIFE.—Mr. Paul Best hae shown that in the destruction of life by diminishing barometric pressure, the direct canse is the deficiency of oxygen, and that an animal that will die with a pressnre reduced to eighteen cm. (seven inches) will endure a redsnction to six cm. (2.4 inches) before life is extinct, if oxygen be added. The converse is also true, that the evil of great pressure comes mainly from the too large amount, in that case, of oxygen, dilution with oxygen prolonging life. Workmen employed at great elevations would accordingly find benefit in an arrangement for supplying more oxygen; and those occupied in diving for pearls, etc., by a contrivance for supplying nitrogen.—*Les Mondes.*

THE GREENLAND METEORITES. — Professor Nordenskjöld has communicated to ths Geological Society a paper on the remarkable masses of meteoric iron from Greenland, discovered in 1870 at Ovifak, and brought home last year by the Swedish expedition under Baron von Otter. They are the chief masses of an enormous meteoric fall which probably occurred during ths miocene period, and extended over an area of two hundred English miles, embracing not only that region occupied by ths Greenland basalt, but a country composed of granite-gneiss.

Within an area of at most fifty sqnare meters were found sixteen meteorites, the weights of which, in Swedish pounds, ars as follows: 50,000, 20,000, 9,000, 336, 230, 200, 191, 150, 150, 150, 100, 56, 42, 15, 8, and 6. The three largest have ths following diameters respectively: 2 by 1·7 meters, 1·3 by 1·27 meters, and 1·15 by 0·85 meters. Nearly 100 pounds of lendicular shaped fragments of iron, from three to four inches in thickness, were also taken out of ths basaltic dyke close to them. All the masses contain nickel and carbon.

HIGHTS IN COLORADO.—From Prof. Thomas' list of elevations we find that Colorado has six mountains with summits over 14,000 feet above the level of the sea. These six are:

Mount Howard	14 270	feet.
Pike's Peak	14 216	"
Gray's Peak	14 145	"
Mount Lincoln	14 123	"
Mount Yale	14 078	"
Long's Peak	14 056	"

Colorado might be said to be a "high old place," if people were in the habit of using such slang phrases.

THE SIGNAL BUREAU AND STORMS.—The great storm that swept over the lakes on the 28th and 29th of Septemher afforded another proof of the utility of the signal bureau. Its approach was announced in the morning "Probabilities" of the 28th, and on the afternoon of that date the danger became so apparent that cautionary signals were ordered out at Buffalo, Chicago, Cleveland, Detroit, Grand Haven, Milwaukee, Toledo, Oswego and Rochester hours before the storm reached either of these places.

MECHANICAL PROGRESS.

Manufacturing Statistics.

The tabulation of the statistics of manufactures of the United States for the year ending June 1, 1870, as returned at the ninth census, has jnst been completed at the Census Office. The number of establishments is 252,148; nnmber of steam engines, 40,191, with a horsepower of 1,215,711; number of water-wheels, 51,017, with a horse-power of 1,130,416. The average number of hands employed dnring the year was 2,053,988, of whom 1,615,594 were males above sixteen years of age, 323,768 females above fifteen, and 114,626 children and growth. The amount of capital invested was $2,118,247,069, of wages paid $775,621,593. The value of material consumed was $2,488,291,952, of products $4,232,625,892. Of this production $13,040,644 is returned from Alabama, $185.410 from Arizona, $4,629,234 from Arkansas, $63,594,556 from California, $2,852,820 from Colorado, $161,065,474, from Connecticut, $178,570 from Dakota, $16,791,382 from Delaware, $9,292,173 from the District of Columbia, $4,685,403 from Florida, $831,196,115 from Georgia, $1,047,625 from Idaho, $205,620,672 from Illinois, $108,617,278 from Indiana, $46,534,322 from Iowa, $11,775,823 from Kansas. $54,625,809 from Kentucky, $24,161,905 from Louisiana, $79,497,521 from Maine, $76,593,613 from Maryland, $553,912,568 from Massachusetts, $118,394,670 from Michigan, $23,110,700 from Minnesota, $8,154,758 from Mississippi, $200,213,429 from Missouri, $2,494,511 from Montana, $5,738,512 from Nebraska, $15,870,539 from Nevada, $71,038,249 from New Hampshire, $169,237,722 from New Jersey, $1,489,868 from New Mexico, $785,194,651 from New York, $1,921,327 from North Carolina, $269,713,610 from Ohio, $6,877,387 from Oregon, $712,178,941 from Pennsylvania, $111,418,354 from Rhode Island, $985,898 from South Carolina, $34,362,626 from Tennessee, $11,517,302 from Texas, $2,343,019 from Utah, $32,184,606 from Vermont, $38,364,322 from Virginia, $2,851,052 from Washington Territory, $24,118,051 from West Virginia, $77,214,326 from Wisconsin, $765.424 from Wyoming.

HIGH PUMPING.—We are informed of some tall pumping at Triumph, Penn., where the water has to be lifted from the Alleghany river to the summit of Triumph Hill, a vertical hight of six hundred and eighty-five feet, or more than twice as high as Trinity church steeple. The horizontal distance is two and three-qnarter miles. The pressure per square inch in the water cylinders of the steam pumps is seven hundred pounds. Three pumps are used, each lifting two hundred thousand gallons every twenty-four hours. This water is designed for supplying the boilers of the steam engines used at the oil wells in the vicinity. The steam pumps have a piston stroke of eighteen inches; the diameters of the steam and water cylinders are respectively twenty inches, and six and one half inches. The pressure above mentioned in the water cylinder is notable as closely approaching that ordinarily employed in the cylinders of hydraulic presses.—*Am. Artisan.*

DREDGING ON OCEAN BARS.—Major General Gilmors describes in *Van Nostrand*, for September, the apparatus and method employed for deepening the channel over the bar at the mouth of the St. John's River, Florida. Upon this bar the constant ocean swell is of such exceptional magnitude and violence that the usnal method of dredging into lighters or scows, ordinarily pursued in still water, is entirely impracticable. Hence a steamer was fitted with a nine-inch centrifugal drainage pump (Andrew's), which had a suction and a discharge opening each nine inches in diameter. To the suction-opening was attached two six-inch snction-pipes, so as to be able to work on both sides of the boat simultaneously. A portion of each suction-pips was made flexible (of rubber hoss) to prevent the end from being lifted off ths bottom by ths pitching of ths boat. Each end also was loaded with an iron frame or drag, weighing 250 lbs., which moves flat along the bottom during the operation of dredging. To this, directly below the pipe, are attached knives which stir up the sand. The pump-engine was driven by steam from the steamer boiler, and the sand was sucked up into hins on board ths vessel.

The steamer starts from the outside of the har, moving slowly, with pipes lowersd and engine pumping np ths sand. Arriving at the insids, ths pump is stopped, ths pipes are raised and ths steamer is turned around. She crosses slowly to the outside, pumping as before. While the steamer is turning around again, on the outside, the snction pipes are raised from the bottom, the side gates of the hins are opened, and the pump is run at full speed in clear water, which discharges the sand from the bins into deep water. In seven months, with 622¾ working hours, 36,969 cnbic yards of sand were removed at an expense (exclusive of cost of pump and outfit) of $19,870.

APPARATUS FOR EXCAVATING BENEATH THE SURFACE OF WATER.—The completion of the great well—fifty feet in diameter—in Central Park, New York, presented an uncommon mechanical problem, and showed, by its solution, the advantages of scientific edncation. It became necessary to dig the well twelve feet below the source of the water supply. The question presented was to do this in a rapid and economical manner. The New York *Price Current* describes the process adopted:

The apparatus consisted of a strong iron cylinder, three and one-third feet high, and one and a third in diameter, made air-tight in its sides and top, hnt entirely open at the botton; the edge at the bottom being made thin and sharp. The top was provided with two valves which could readily he opened or shut; also with a strong wooden stem six inches square and eight feet long, the whole attached to a proper hoisting apparatus. When this cylinder was lowered into the water, the valves were forced open and the air escaped; then by working the wooden stem back and forth, the cylinder settled of its own weight and filled with sand, when the valves were closed and the upward pressure of the water kept the sand from falling out as the load was raised to near the surface and there deposited on a platform, from which it was afterward removed by ordinsry appliances. By this apparatus five cubic feet of sand were easily taken from the bottom of the well every two minutes.

TO CUT ANN BORE INDIA RUBBER STOPPERS.—Dip the knife, or cork borer, in solution of caustic potash or soda. The strength is of very little consequence, but it should not be weaker than the ordinary regent solution. Alcohol is generally recommended, and it works well until it evaporates, which is generally long before the cork is cut or bored through, and more has to be applied; water acts just as well as alcohol, and lasts longer. When, however, a tolerably sharp knife is moistened with soda lye, it goes through India rubber quite as easily as through common cork; and the same may be said of a cork borer, of whatever sizs. I have frequently bored inch holes in large caoutchonc stoppers, perfectly smooth and cylindrical, by this method. In order to finish the hole without the nsual contraction of its diameter, the stopper shonld he held firmly against a flat surface of common cork till the borer passes into the latter.—*W. Donkin, in Chemical News.*

TINNING WITH ZINC INSTEAD OF TIN. — C. Mene.—The author calls attention to a frand which, in France, at least, seems to be on the increase, viz., that of using zinc instead of tin for the purpose of lining copper vessels, which are in general nee for cooking purposes in France; zinc being readily acted upon by weak acids vinegar, etc., yields poisonous compounds. In order to test the tinning, the author recommends the boiling of vinegar in the vessel; if the surface remains bright, genuine tin has been used, but if the metallio surface becomes tarnished, zinc may be suspected to have been substituted, and further research will be required before using the vessel for cooking purposes.—*French Journal.*

A NEW THEONOLITE.—An engineer of Syria, Haddan by name, has constructed a theodolite on a new system. With this instrument angles are said to be measured with hitherto unattainable accuracy. The telescope is made to revolve with great regularity around a vertical axis, making a revolution in a certain accurately determined time. The angle is measnred by the *time* occupied by the telescope in making this angle. Where the greatest accnracy is requisite, the telescope revolves once in twelve hours. Evidently Mr. Haddan takes heed of the proverb that "haste makes waste."

Stock Sales for Week Ending Oct. 17—S. F. Stock & Ex. Board.

NAMES OF COMPANIES.	Post.	Shs. in ft.	FRIDAY. Shs	Prices.	SATURDAY. Shs	Prices.	MONDAY. Shs	Prices.	TUESDAY. Shs	Prices.	WEDNESD'Y Shs	Prices.	THURSDAY. Shs	Prices.	Tot'l Sh's Sold.	Assm't
Adams Hill	*				30	1½							50	1¾	80	
Alpha	*	300	20	40	41½@42½	48	42 @43	30	42	45	40½@41½	40	40	50	41 @42¾	253	
Alps	*	800	37½	150	4½@4¾			100	4¾@ 4¾					100	4¾	350	½
American Flag	*	2600	14	270	16½@16¾	120	16 @16¾	195	15½@16	100	13¾	50	14½	160	15½@16½	1000	¾
Amador Tun	§			700	7 @ 8	200	8¾@ 9¼	1000	9½@10¾	620	9½@ 9¾			200	8¼	2720	¼
Arkansas	§			100	34									850	3½	950	¾
Arizona & Utah	†	1600	1¾														
Belcher	*	1040	19	90	90½@95	530	90 @92	825	90 @92½	138	90 @95		1¼@ 2	450	88 @90	23	3
Baltimore Con	*			205	2 @ 2¼	140	2 @ 2¼	250	2			40	80c @90c			635	
Bowery	§	1000	30	175	90	565	90c @ 1¼	25	75c	125	80c @85c	150		140	90c	115	
Bacon	*																
Buckeye	*					150	2½@ 2¾									150	
Best & Belcher	*	224	100					25	2½	100	2	100	2	20	2	225	
Bellevue	§	8000	2½					280	5 @ 5½	256	5¼@ 5½	375	5 @ 5½	125	5¼@ 5½	2130	⅜
Belmont	*			660	4¾@ 5½	285	4¾@5	145	55 @56	110	54 @54½	65	53 @54	175	52½@55	1045	
Cholla	*	2800	10	285	53 @ 56	235	26½ @27	110	26½@27½	155	26 @26¾	185	25¾@26	1635	1		
Caledonia	*	5000	4	80	25	215	61¼@ 65	70	60 @61¾	125	63 @64	150	64 @65	65	64 @65	585	
Cons. Virginia	*	1160	20¾	210	10@10¼	265	10 @10¾	220	10 @10¾	100	9¾@10	50	10	40	9½@10	895	
Confidence	*	130	192	220	103 @110	220	108 @115	340	113 @119	375	111 @120	90	114 @115	345	117 @125	1510	1½
Crown Point	*	600	16¾	130	1¾			30	1½			20	1½	10	1¼	190	¼
Central	*	70	357														
Calaveras	§	3200	6¾														
Condor	§			555	75c @80c	170	75c @80c	200	1½			50	170	200	1⅞@ 1¾	1175	45c
Columbus	*																
Chapman	*	700	40							800	1 @ 1¼	350	1 @1¼	250	1½	1900	
Chief of the Hill	*	1000	30	275	10¼@10½	225	10 @10¾	400	9½@10	1035	8½@ 9¾	515	9 @ 9¾	355	8 @ 8½	2675	2
Chief East Ex	§			170	3¼@ 3½	50	3½			100	3¼@ 3¾	200	3	50	2¾	570	⅝
Caderburg	*	1200	20	355	5 @ 6¼			25	4	10		5	4½			385	
Daney	*	2000	12	50	1½	30	1½				1½	20	1½	10	1¼	120	¼
Eureka Cone	*	1000	30	380	18 @18½	225	17¾@18	220	18 @18¾	220	18 @18½	370	18 @18¼	110	17¾@18	1525	½
Eureka	§	1800	12														
Exchequer	*	400	20	60	17	100	17 @17½	10	17½			20	17	20	17	210	
Eclipse	*	70	357	280	9½@10	160	11 @11½							30	9 @ 9¾	470	½
Empire Mill	*	75	16	500	8¾@ 9	290	9 @ 9¼	80	8¾@ 8¾	425	8 @ 8¼	105	8½	280	8½@ 9	1730	
Excelsior	§	4500	2¾														
Gould & Curry	*	1200	4	19	160@162	8	162½			20	165 @170	45	175 @176	20	172 @174	112	12
Golden Chariot	*	750	14¾	20	16½	20	17¼@18¼	135	17 @18			50	13¾	30	12½	255	4
Globe	*	1600	12½	170	1⅞	170	1¼@ 1½	20	1½					200	1¼	560	¼
Con. Gold Hill	§		40			185	5			100	1⅞					285	
Hale & Norcross	*			30	71 @73			50	72 @72½	20	70			50	9	100	
Huhn & Hunt	§	3600	8¼	710	7 @ 7¾	90	7¼@ 7¾	1850	7¼@ 7¾	1615	7¼@ 7¾	635	6¾@ 7¼	270	6¾@ 7	2200	⅜
Hermes	§			20	9	80	8½ @9	35	8	50	8					240	
Ida Elmore	*	1300	17½														
Imperial	*	1840	54¾	2515	9¼@10	2650	9¾@10½	2535	9 @10	1230	8½@ 8¾	270	9 @ 9½	1110	8¼@ 9¾	10340	¼
Ingomar	§	1000	40	400	1	100	1¼			100	1¼	425	1¼@ 1⅜	350	1⅜@ 1½	1375	½
Independent	*	1800	14	30	50c											30	
Ivanboa	§	600	5	150	1 @ 1¼											160	
Julia	*	2000	15	1030	6 @ 7¼	1745	5 @ 5¾	445	5½@ 6	1105	6¼@ 6¾	1035	6⅞@ 7	1555	6¾@ 7	5915	½
Justice	*	3000		50	7¼@ 7¾	10	7	130	7	45	7					235	
Kantuck	*	95	21	50	216@225											50	
Kentucky	§		20					20	7¼							20	
Knickerbocker	*	1200	20			200	4¾@ 4⅞	55	5	35	4¾	50	4¾	80	4¼@ 4½	350	
Mammoth	§	1800	12½														
Meadow Valley	§		13¾	2460	24¾@25¼	1210	25 @25¾	2715	27¾@28¼	2185	27 @28	1720	27½@28¾	1675	28 @28¾	11965	3½
Mahogany	*	720				80	8¼@ 8¾	150	9	110	8¾@ 9					340	
Mooking Bird	*																
McMahon	*		40														
Newark	§	800	12	105	4¾			220	4½			100	4	220	4	655	¾
Ophir	*	1400	26¾	525	58 @60	340	56 @59	390	53 @57	730	50 @52½	180	52 @56	60	56 @58	5225	2
O. H. Treasure	§	800	10¾	50	4½	65	4½	125	4¾	70	4¾@ 4⅞	440	4¾@ 5			750	
Overman	*	12-0	12½	5	58	20	59 @60	25	61 .@63	65	61½@62½	30	63 @64	60	63	205	5
Occidental	*	2000	29			200	3¾									200	
Pioche	§	1000	16¾	145	16 @16½	30	16¾@17	370	17 @18	335	17½@18	190	16½@17	105	16½@16¾	1175	
Pioche West	§		30	10	4¾			125	4							135	
Page & Pansoa	*	2400		210	2¼			50	2¼	185	2¼			10	2¼	505	
Pea Vine	§	1000		100	90c			500	80c @85c	60	75c					710	
Phœnix	*			360	4 @ 4¼	400	4	500	4¼	800	4¼@ 4¾	300	4¼@ 4½	20	4¼	2380	
Raymond & Ely	*	4000	20	160	136 @138	465	130 @134	425	129 @133	745	111 @12 1	365	136 @140	355	132 @138	2515	
Savage	*	800	40	405	90 @95	170	88 @92½	145	99 @103	115	95 @100	100	92 @95	120	92½@93	1055	2
Seg. Belcher	*	160	7¾		571					50	78	15	68			70	
Sierra Nevada	*	3000	3	75	16	68	15			135	15 @15½	10	15			440	1½
Senator	§			150	1¾			198	1¾	100	1¼	840	1¼@1⅜	300	1¾	1088	
Sucoor	*	7660	12½					20	3¾	50	3½	70	3 @ 3¼			140	
Silver Hill	*	430¼		1270	7 @ 8	100	7	140	6½	20	7	10	7	105	7 @ 7¾	1625	½
South Chariot	§	660										50	1¾			50	
Trench	*		20	50													
Wash. & Creole	§	200	150	250	4¼@ 4¾			100	4							350	
Woodville	*	1400	20	100	3¾	85	4½	470	3¾	400	3¾@ 3¾			350	2½@ 3¼	1405	⅝
War Eagle	*	1000	10	200	5	200	5¼@ 6									400	
Utah	*	1000	20														
Yellow Jacket	*	1200	25	137	92 @96	45	90 @93	65	91 @93	323	81 @83½	80	83 @83½	120	81½@89	752	7
Yule Gravel	*	400	25														

NOTE.—†—California. *—Washoe. ‡White Pins. §—Ely District. ¶Eureka District. ‖—Idaho. ¦—Nearly. †—Ovar.

S. F. Stock and Exchange Board.

THURSDAY, October 17, 1872.

The sales at the Board for the week ending October 9th amounted to $2,374,000. Imperial was the feature. The excitement in the Stock circles this week was the election of the Eureka Consolidated Mining Company which resulted contrary to the expectation of many; an account of this matter will be fonnd in another column. The leading stocks sold this week are as follows: Meadow Valley, 11,965 shares; Imperial, 10,340 shares; Julia, 5,915; Huhn & Hunt, 5,200; Chief of Hill, 2,875; Amador Tunnel, 2,720; Savage, 2,515; Phœnix, 2,380; Belcher, 2,333; and Ophir, 2,225. Rumors of rich strikes in the drifts in both the 1500 and 1600 ft. levels of the Imperial, gave the stock of that mine a start, and accounts for the large nnmber of shares sold. The miners were shut up in the mine as usual, and the stock advanced. An assessment of $1, amounting to $100,000 has been levied on the stock this month. No new developments in the snit of the Kentucky against the Raymond & Ely mine have occurred. Mining assessments delinquent this month are as follows: American Flag, $60,000; Alaska Cons., $3,750; Atlantic and Pacific, $8,000; Bowery, $30,000; Caledonia, $40,000; Chapman, $15,000; Cook & Geyer. $12,000; Condor, $25,000; Dauey, $24,000; Fallis, $7,500; Golden Chariot, $10,000; Globe, $20,000; Huhn & Hunt, $30,000; Kinston, $15,000; Lyons & Wheeler, $5,000; Louise, $15,000; Minnesota, $10,000; Newark, $24,000; Succor, $22,800; Savage, $160,000; Sonth Chariot, $10,000; Washington & Creole; $15,000; Yuba Gravel, $2,500. There are 24 of these assessments amounting to $584,550, and only one dividend to offset them, that of the Raymond & Ely mine, amounting to $210,000; this leaves $374,550 on the wrong side of the account for this mouth. During the last six months 92 assessments have become delinqnent, amounting to $2,008,610, and 22 dividends have been paid, amounting to $4,090,000, leaving a balance in favor of shareholders of $2,081,390, a very small amount compared to the disbursements. In May the assessments were $351,750, and the dividends $1,067,000, leaving in favor of shareholders for that month $715,250. This mouth the reverse of this has taken place. We should hear of more paying minee, taking into consideration the great dieproportiou of dividend and non-dividend companies.

On Friday the stocks were a little firmer than on previous day. From highest ratee on previoue morning Yellow Jacket advanced $9, Belcher, Crown Point and Ophir, each $5; Hale & Norcrosss, $3; Consolidated Virginia, 2; Chollar-Potosi aud Savage, each $1. Gould & Curry declined $5; Kentuck, $4.50; Segregated Belcher, $4, and Exchequer, $2.

Saturday the market was pretty steady considering the state of the money market. From highest sales on Friday morning Crown Point advanced, $8; Overman, $3.50; Chollar Potosi, Confidence, Pioche and War Eagle each, $1. Raymond & Ely declined, $6; Belcher, $4; Consolidated Virginia, $3.50. Ophir and Savage each, $3; Yellow Jacket, $2; and American Flag, $1.

On Monday the market was steady and prices generally firm. At the afternoon Board the market was more active and prices closed generally better. Belcher was $2 higher; Crown Point, $4; Savage, $10; Pioche, $1; Amador, Tunnel, $1; Meadow Valley, $4; Raymond & Ely was $3 lower; Chief of the Hill, 50 cts; Chollar, $1; Imperial, $1; Empire Mill, 75 cents.

On Tuesday there was a moderate amount of business done with no material change in prices. Consolidated Virginia and Overman each advanced $2; and Belcher, Chollar-Potosi, Ophir and Yellow Jacket each $1; Raymond & Ely advanced $19.

Wednesday the sales and business were light at lower prices. Gould & Curry advanced $11; Ophir, 5; and Overman $1; Yellow Jacket declined $1; Crown Point and Savage, each $3 Segregated Belcher, $2; Chollar-Potosi, $150; and Alpha and Caledonia each $1.

To-day stocks were more active and prices a little better. Crown Point advanced $10, Yellow Jacket, $5.50; American Flag, $20; Chollar, $1; Con Virginia, $1; Ophir $2.

Below will be found news from the prominent mines, later than that found in our MINING SUMMARY.

CHOLLAR POTOSI.—During the week ending October 16, 1,925 tons of ore was extracted and sent to mill of au average assay value of $28.34 per ton.

HALE & NORCROSS.—For week ending October 12th, 825 tons of ore were extracted, 718 sent to mill, and 1,070 tons remain on dump. No now developments have taken place in the mine.

SAVAGE.—From this mine during week ending October 12th, 742 tons assaying $33.25 per ton, were extracted; 742 tons delivered at mills, and 385 tons remain on the dumps. A large portion of this ore came from the north mine, second station; the old mine. however, produced 241 tons.

RAYMOND & ELY.—Last shipment of bnllion was $32,821; previous shipmente for month, $101,684 ;] total, $134,505, equal to $10,347 per day. The mine ie yielding about 100 tone of first class and 20 tone of second class ore per day.

PHŒNIX.—On the 8th inst $10,197 was shipped. Aesay value, gold and silver, $269.17 per ton. On the 10th inst. 10 bare of bullion were ehipped, valued at $4,790; assay value in gold and silver, $359 per tou. On the 12th 15 tons of bullion were shipped, valued at $6,601. On the 14th 10 bars were shipped, valued at $4,860. The mine is looking well, turning out about eight tons a day of an average value of over $400 per ton.

Reports from the PROOHE mine say there is great improvement in the first and second levels, with better ore, although the ledge is quite small.

The sonth drifts on both the 1500 and 1600 feet levels of the IMPERIAL show heavy bodies of ore.

MINING SUMMARY.

THE following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

California.

ALPINE COUNTY.

SILVER GLANCE.—Monitor *Miner*, Oct. 5: The Silver Glance shaft is progressing finely, and the ore vein is enlarging.

AMADOR COUNTY.

KENNEDY.—Amador *Ledger*, Oct. 12: The first of the present week the Kennedy made a clean-up of a little over $8,000 after 15 day's run. A fine large shaft is being sunk about 200 ft. southeast from the mill.

BACON.—The rock at the bottom of the present shaft prospects very flattering and the walls are well defined, with every indication of being permanent.

ANOTHER MINE.—The Kearsing Bros. are sinking a shaft in the bed of Jackson oreek and have struck a fine-appearing ledge only a few feet below the surface.

EAGLE.—The owners are taking steps to open up and prospect the lead, and as soon as practicable a shaft will be sunk so as to intersect the lead abont 100 ft. deep.

CALAVERAS.

UP COUNTRY.—Calaveras *Chronicle*, Oct 12: Railroad Flat Dis. The Freeman Bros'. mine is being worked again by a Washoe Oo. A tunnel has been etarted a few feet above high water mark of the South Fork, ehowing splendid walle but no ore ae yet. The new tunnel of the Herzer, some 300 ft. above the level of the South Fork, is expected to meet the north chimney in a few daye.

GWIN.—On Thursday last we were shown the product of twelve day's run of 16 stamps at the Gwin. There wae $12,000 of the "stuff." The south shaft is down 580 ft., and the ledge has widened out to 7 ft. The yield from 16 atsmps has averaged $20,000 per month for sometime past. When the shaft reaches 600 ft. stoping will be commenced and a much larger number of stamps kept in motion than at present. Stoping has begun in the central shaft, at 200 ft., and a fair quality of rock is being extracted.

BLUE MT.—The Heckendorn Co.'s 18 stamp mill is in full operation crushing rich quartz from that lode.

Work on the Imperatrice and Prince Imperial mines is progressing rapidly.

Work on Good Hunter is to be resumed.

RAILROAD FLAT DIST.—Petticoat running levels north and south at the depth of 450 ft. The fissure is from 8 to 12 ft. wide. The Sanderson is again free of water and the contractor commenced sinking.

MOSQUITO DIST.—Twenty tons of Grasshopper ore yielded $2,150. The dump of the mine is filling again with better ore. S. Smith & Co.'s mine yields at the rate of 8 tons per day. Nearly 100 tons of high grade on dump.

WEST POINT DIST.—The Blazing Star has been leased for 6 months. The Pasco is to be put in working condition. The shaft 60 ft. deep is located on a chimney over 300 ft. in length, the ore is from 1 to 3½ ft. wide and yielded as high as $96 per ton.

SHEEP RANCH.—San Andreas *Citizen*, Oct. 12: Ferguson & Wallace cleaned up their mill again last Saturday, and the result was $1,400. The rock averaged a trifle over $50 per ton.

KERN COUNTY.

GRIZZLY BEAR MT. DIST.—Havilah *Miner*, Oct. 5: Several valuable mines have been discovered lately.

TO BE WOKED.—Several abandoned mines in Kelsey Cañon are about to be worked on an extensive scale.

NEVADA COUNTY.

GOOD.—Grass Valley *Union*, Oct. 10: The Buchanan above Nevada city had another crushing; 23 tons of rock yielded $32 per ton; a total of $734.

MINING HEREABOUTS.—Nevsda *Transcript*, Oct. 8: Recently the developments in this vicinity have been most encouraging. The older minee appear to be yielding well and the recent prospecte are excellent. The Penneylvania Co. has reached about 900 ft. on the incline, and are abont running off from the latter. The ledge on both sidee looks first rate. The Gold Tunnel ie very rich, it being estimated that the rock ie worth fully $100 per ton. The Providence ledge is said to be from 4 to 5 ft. thick, and the rock of first grade. The Murchie continues to yield handsomely.

OUR MINING SHAREHOLDERS' DIRECTORY.

ASSESSMENTS.

Name of Co. Location.	Secretary. S. F. Office.	Aasm't.	Laviad.	Deling't.	Sala.
Alaska Con. M. Co. Lyon Co., Nev.	G. R. Spinney. 320 California St. 25.		Sept. 3.	Oct. 7.	Oct. 28.
American Flag M. Co. Ely District.	Geo. R. Spinney. 320 California St. $2 00.		Sept. 2.	Oct. 8.	Nov. 1.
Atlantic & Pacific Con, M. Co. El Dorado Co.	A. Noel. 419 California St. 20.		Sept. 11.	Oct. 15.	Nov. 2.
Alpine G. M. & M. Co. Amador Co., Cal.	W. L. Ustick. 438 California St. $1.50.		Oct. 16.	Nov. 16.	Nov. 30.
ALTONA G. M. CO. Grass Valley, Cal.	Daniel Waldar. 204 Montgom'y St. 10.		Oct. 3.	Nov. 2.	Nov. 25.*
AUBURN G. M. CO. Placer Co., Cal.	Geo. W. Dixon. corner Mont. & Cal. 25.		Sept. 13.	Oct. 14.	Nov. 6.
BECKWITH M. CO. Ely District.	Wm. H. Watson. 302 Montgomery St. 20.		Aug. 19.	Sept. 28.	Oct. 23*
Bellevue M. Co. Placer Co., Cal.	T. F. Cronise. 438 California St. 75.		Oct. 12.	Nov. 13.	Nov. 30.
Bowery Cons. M. Co. Ely Dist.	O. E. Elliot. 419 California St. $1.		Sept. 17.	Oct. 24.	Nov. 10.
Calaveras G. M. C. Calaveras Co.	T. B. Wingard. 318 California St. 50.		Aug. 26.	Oct. 1.	Oct. 22.
Caledonia S. M. Co. Storey Co., Nev.	R. Wegener. 414 California St. $2 00.		Sept. 11.	Oct. 18.	Nov. 6.
Cederburg 1st N. Ex. Co. California.	J. N. Webster. 505 Montgomary St. 10.		Sept. 9.	Oct. 14.	Nov. 2.
Cederburg, 1st S. Extension. California.	J. N. Webster. 505 Montgomery St. 4.		Sept. 11.	Oct. 12.	Nov. 12.
Chapman M. and M. Co. Ely Dist.	F. Swift. 405 Montgomery St. 50.		Sept. 16.	Oct. 24.	Nov. 15.
Cherokee Flat Mine O. Co. Butte Co., Cal.	H. Picholr. 603 Washington St. $1 00.		Sept. 6.	Oct. 11.	Oct. 29.
Condor M. Co. Ely District.	H. O. Klbbs. 419 California St. $1 00.		Sept. 12.	Oct. 23.	Nov. 13.
Consolidated Virginia. Washoe.	D. T. Baley. 401 California St. $3 00.		Sept. 26.	Nov. 1.	Nov. 21.
Cook & Geyer M. Co. Storey Co. Nev.	O. H. Fish. 419 California St. 50.		Sept. 4.	Oct. 8.	Oct. 28.
Daney M. Co. Lyon Co., Nev.	Geo. R. Spinney. 320 California St. $1 00.		Aug 29.	Oct. 2.	Oct. 23.
Deseret Con. M. Co. Utah T.	El Dorado M. Oo. Amador Co., Cal.		Sept. 16.	Oct. 18.	Nov. 7.
El Dorado M. Oo. Amador Co., Cal.	E. McFaddan. Express building. 50.		Oct. —.	Nov. 10.	Nov. 25.
Eliza M. & M. Co. Siskiyou Co., Cal.	T. F. Cronise. 438 California St. $1.		Oct. 11.	Nov. 12.	Nov. 28.
Empire M. Co. Grass Valley.	S. Fiukham. 401 California St. $3 00.		Sept. 3.	Oct. 12.	Oct. 28.
Empira M. Co. I. T.	C. F Balcom. 426 Montgomery St. 50.		Aug. 5.	Sept 6.	Sept. 30.
Empire M & M. Co. Washoe.	W. E. Dean. 419 Cal. St. $1 00.		Oct. 8.	Nov. 10.	Dec. 2.
EXCELSIOR S. M. CO. Nye Co., Nev.	W. A. Kollmyer. 640 Washington St.	10.	Sept. 28.	Oct. 29.	Nov. 22
Fallis S. M. Co. Ely District.	A. Treadwell. Merchants' Ex. 25.		Aug. 26.	Oct. 2.	Oct. 22.
Globe M. Co. Gold Hill.	W. E. Dean. 419 California St. $1 00.		Sept. 5.	Oct. 7.	Oct. 25.
Goldan Chariot M. Co. Idaho.	L. Kaplan. Merchants' Ex. $1 00.		Sept. 12.	Oct. 18.	Nov. 8.
Greenville M. Co. Plumas Co., Cal.	H. O. Kibbe. 419 Cal. St. 50.		Oct. 1.	Nov. 5.	Nov. 26.
Huhn & Hunt M. Co. Ely District.	L. Kaplan. Merchants' Ex. $1 00.		Aug. 30.	Oct. 4.	Oct. 25.
Imperial M. Co. Washoe.	W. E. Dean. 419 California St. $1 00.		Oct. 7.	Nov. 6.	Nov. 23.
Independent G. M. Co., Butta Co., Cal.	G. T. Grimas, 240 Montgomery St. 40.		Oct. 15,	Nov. 19.	Dec 10.
Justice M. Co. Washoe.	R. Wegener. 414 California St. $2 00.		Oct. 2.	Nov. 6.	Nov. 27.
Kentuck M. Co. Ely District.	J. F. Cavallier. 509 Cal. St. 50.		Oct. 4.	Nov. 9.	Nov. 13.
Knickerbocker M. Co. Storey Co., Nev.	Henry Boyle. Stevenson's Build'g. $1 00.		Oct. 7.	Nov. 9.	Nov. 28.
LADY FRANKLIN G. & S. M. CO. Cal.	J. S. Luny. 507 Montgomery St. 50.		Sept. 24.	Oct. 28.	Nov. 18.
Kinston M. Co. Ely District.	L. Kaplan. Merchants' Ex. 50.		Aug. 26.	Oct. 1.	Oct. 21.
Lemon M. & M. Co. LEureka Dist.	L. T. Millikin. 608 Merchant. $1 50.		Aug. 14.	Sept. 17.	Oct. 21.
LOUISE M. CO. Incoln Co., Nev.	Wm. H. Watson. 302 Montg'ry St. 50.		Sept. 14.	Oct. 18.	Nov. 9.
Lyons & Wheeler M. Co. Arizona.	T. W. Colburn. 409 Cal. St. 50.		Sept. 2.	Oct. 4.	Oct. 29.
Mahogany M. Co. Idaho.	T. J. Owens. Express Building. $2 00.		Sept. 25.	Nov. 4.	Nov. 20.
Minnesota O. & S. M. Co. Idaho.	Wm. Wills. 419 Cal. St. 50.		Sept. 4.	Oct. 12.	Nov. 2.
National M. Co. Nye Co, Nev.	B. B. Minor. 411½ California St. 50.		Sept. 26.	Oct. 28.	Nov. 18.
Newark S. M. Co. Ely District.	D. T. Bagley. 401 Cal. St. 15.		Sept. 24.	Oct. 50.	Nov. 23.
Newton Booth Con. M. Co. Ely Dist.	E. F. Scott. 314 Cal. St. 25.		Sept. 5.	Oct. 7.	Nov. 4.
NEVADA L. & M. CO. Elko Co., Nev.	Wm. H. Watson. 302 Montg'ry. St. 8.		Oct. 1.	Nov. 10.	Nov. 23.*
NOONDAY S. M. CO. White Pin, Nev.	Ohas. H. Fish. 419 California St. 20.		Oct. 11.	Nov. 15.	Dac. 4.*
North Oro Fino. Idaho.	C. F. Balcom. 426 Montg'ry St. 50.		Aug. 22.	Sept. 28.	Oct. 19.
OHIO OONS. G. M. CO. Calaveras Co.	W. A. Knapp. 432 Montgom'y St. 10.		Sept. 24.	Nov. 2.	Nov. 23.*
O. H. Treasure M. Co. White Pine.	D. A. Jennings. 401 Cal. St. $1 50.		Oct. 9.	Nov. 15.	Dec. 6.
Overman S. M. Co. Washoe.	W. W. Steteon. 414 Cal. St. $5 00.		Oct. 8.	Nov. 11.	Nov. 3.
Pacific Coal M. Co., Contra Costa Co., Cal.	A. Lachman. First and Market. $10.		Sept. 25.	Nov. 13.	Nov. 30.
Pacific Borax Co. Esmeralda Co.	E. Leuba. 507 Montg'ry St. 20.		Sept. 5.	Oct. 7.	Oct. 31.
Pauper M. Co. Idaho.	J. L. King. 411 California St. 50.		Oct. 14.	Nov. 9.	Nov. 30.
Pawvina S. M. Co. Ely District, Nev.	C. F. Balcom. 426 Montgomery. 25.		Oct. 11,	Nov. 20.	Dec. 16.
Placer G. M. Co. Placer Co., Cal.	G. W. R. Kline. 411 Cal. St. 15.		Sept. 16.	Oct. 22.	Nov. 8.
POOAHONTAS G. M. Co. El Dorado Co.	D. A. Jenninge. 401 Cal. St. 50.		Sept. 17.	Oct. 24.	Nov. 18.
Pride of Mountain M. & Co. Winnemucca.	T. W. Colburn. 419 Cal. St. 5.		Aug. 26.	Sept. 30.	Oct. 21.
QUAIL HILL M. & M. Co. Calaveras Co.	T. F. Oronise. 409 Cal. St. $5 00.		Aug. 22.	Oct. 2.	Oct. 24.
Savage M. Co. Washoe.	E. B. Holmes. 401 Cal. St. $10 00.		Sept. 10.	Oct. 16.	Nov. 2.
Shipley N. & M. Co., Placer Co., Cal.	W. L. Ustick. 438 California St. $1.		Oct. 16.	Nov. 16.	Nov. 30.
SILVER SPROUT M. Co. Kearsarge Dist.	B. Wingard. 318 Cal. St. 50.		Aug. 26.	Oct. 8.	Nov. 8.*
SILVER WAVE M. CO. White Pine.	J. W. Olark. 418 Cal. St. $1 00.		Sept. 21.	Oct. 28.	Nov. 25.*
Silver West Con. M. Co. Eureka District.	F. R. Bunker. Montg'ry Block. 50.		Aug. 26.	Oct. 5.	Oct. 30.
South Chariot M Co. Idaho.	J. L. King. 411 Cal. St. 50.		Sept. 6.	Oct. 12.	Nov. 4.
Stiokla M. Co. Calaveras Co. Cal.	T. B. Wingard. 318 Cal. St. $1 00.		Sept. 4.	Oct. 7.	Oct. 28.
Succor M. & M. Co. Washoe.	W. H. Watson. 302 Monte'ry St. $1 00.		Sept. 20.	Oct. 11.	Nov. 21.
Tennisen G. S. & M. Co. Calaveras Co., Cal.	F. J. Herman. 634 Washington St. 25.		Oct. 10.	Nov. 16.	Dec. 5.
TELLURIUM G. & S. M. CO. Amador Co., Cal	Wm. H. Soery. Or. Clay & K'rny. $1 00.		Sept. 3.	Oct. 5.	Oct. 26*
Tehama Cons. Schell Creek.	W. W. Stetson. 414 Cal. St. $2 00.		Aug. 2.	Oct. 1.	Oct. 19.
Washington & Creole M. Co. Ely District.	F. D. Cleary. Merchants' Ex. 50.		Sept. 9.	Oct. 19.	Nov. 11.
Yuba Gravel M. Co. Nevada Co., Cal.	J. L. King. 411 Cal. St.		Sept. 17.	Oct. 21.	Nov. 11.

MEETINGS TO BE HELD.

Name of Co. Location.	Sacratary. Office in S. F.	An'l or Sp'l.	Date.
Amador M. Co. Amador Co.	F. A. Hill. Express building.	Special.	Oct. 28.
Andes M. Co.	T. O. Sanborn. 329 Montgomery St.	Special.	Nov. 4.
Exchequar M. Co. Washoe.	D. T. Bagley. 401 Cal. St.	Annual.	Oct. 21.
Hayden Hill M. Co.	Wm. H. Knight. 331 Monte'ry St.	Annual.	Nov. 3.
Heckerdorn M. Co.	L. Leorns. 513 Jackson St.	Special.	Oct. 26.
Indus G. and S. M. Co.	John Fowler. Merchants' Ex.	Anuual.	Oct. 19.
Omega Virginia Co.	T. O. Sanborn. 329 Montgomery St.	Special.	Nov. 4.
South Chariot. Idaho.	J. L. King. 411 Cal. St.	Annual.	Oct. 21.

LATEST DIVIDENDS—Within Three Months.

Name of Co. Location.	Secratary. Office in S. F.	Amount.	Payabla.
Belcher M. Co. Washoe.	H. C. Kibbs. 419 California St.	$3.00.	Sept. 10.
Black Diamond Coal Co. California.		½ per cent.	Oct. 1.
Crown Point G. & S. M. Co. Washoe.	O. E. Elliot. 419 California St.	$3 00.	July 5.
Eastport Coos Bay Coal. Oregon.	I. L. Pecil. Merchants' Ex.	$5 00.	Oct. 12.
Keystone Quartz M. Co. California.	L. Vesaria.	50.	July 10.
Mahogany G. & S. M. Co. Idaho.	T. J. Owens. 402 Mont'ry St.	$1 50.	Aug. 7.
Meadow Valley M. Co. Ely Dist., Nev.	T. W. Colburn. 419 California St.	$1 00.	June 20.
Raymond & Ely M. Co. Ely Dist., Nev.	A. J Mouldar. 419 California St.	$7 00.	Oct. 10.
Pioche S. M. Co.

GOLD TUNNEL.—A splendid ledge has been struck in the Gold Tunnel at a depth of over 500 ft. The rock is very rich and the ledge of good size.

PROVIDENCE.—The lessees have struck a first rate ledge, from 4 to 5 ft. thick, and the rock is very rich.

SOOOS.—First rate rock was struck a few days ago in the old Soggs mine on Deer Creek.

PLACER COUNTY.

PICATUNE.—Placer *Herald*, Oct. 12: The shaft is down 80 ft. on a fine prospecting ledge, 4 ft. thick, with smooth solid walls. The owners have out 140 tons of ore that has prospected so finely and uniformly from the top down that they have gone to the expense of erecting a new and complete 10-stamp quartz mill, propelled by water, which is ready to commence crushing ore.

SISKIYOU COUNTY.

RICH.—Yreka *Union*, Oct. 5: Two miners have recently opened a claim in a bar on the Klamath River which is proving very rich.

TUOLUMNE COUNTY.

RICH.—Sonoma *Democrat*, Oct. 12: Mr. Hill struck some rich rock on Turnback Creek above Cherokee, one day of the present week.

Nevada.

EUREKA DISTRICT.

RUNNING.—Enreka *Sentinel*, Oct. 8: The new furnace of the Phenix Co. fired up Saturday night is running successfully.

The mines are looking splendidly. On the 400-ft. level a drift is being run for the ledge with indications favorable for a speedy and valuable development.

SILVER WEST FURNACE.—This furnace has been running continuously over 30 days, and the daily average of ore smelted has been over 48 tons. The average value per ton of the bullion has been $305.

ELY DISTRICT.

REVIEW.—Pioche *Record*, Oct. 6: The amount of bullion for the week is $50,084.16.

CHIEF OF THE HILL.—About 10 tons of high grade ore are being raised daily from the second and third levels. Out the third level the west drift is being pushed, also two winzes, which are being sunk at a distance of 100 and 200 ft. from the main incline. Winze No. 1 is down 40 ft. and is in ore from top to bottom, assaying $200 per ton. Winze No. 2 is down 12 ft. and presents the same characteristics. It is intended to sink winzes at each 100 ft. of the third level.

MEADOW VALLEY.—The works at the several shafts are being urged forward and drifts are being run connecting the several shafts. The exploration of that portion contiguous to the Raymond & Ely continues to be gratifying and induces the belief that the rich body of ore struck in the Lightner shaft may probably extend into the Meadow Valley ground.

WASHINGTON AND CREOLE.—New hoisting works have just been completed. The incline is 500 ft. deep and is being well timbered; 4 or 5 tons of good ore are being raised daily.

PIOCHE PHŒNIX.—This Co. is sinking a vertical shaft with which it is expected to strike their vein in something over 400 ft. from the surface. Work on the incline is progressing and has reached a depth of 350 ft.

RAYMOND & ELY.—From 90 to 100 tons is being raised daily. The product of bullion is about $12,000 per day. A cross course is being cut from the shaft to the sixth or 523-foot level. It is in over 50 ft. and will take about 100 ft. in all to reach the level. About 300 men are employed in and about the mines.

ARKANSAS.—The incline is 310 ft. deep and the work of sinking is being rapidly pushed. Drifting is going on in the 120-ft. and 250-ft. levels, from which very fine ore is being taken—that from the 120-ft. level assaying $350. This drift is in 40 ft. and shows a vein 3¼ ft. wide. The lower level is in about 50 ft. and yielding fine ore.

MOUNTAIN VIEW.—An incline has been commenced and is down 10 ft. The vein is 2 ft. wide at the bottom of the incline and shows considerable metal.

AMADOR TUNNEL.—The tunnel is over 200 ft. in length. About half-way from the mouth some rich ore was struck, and a shaft is being sunk on the vein containing it. It is thought that the ledge, which is 2½ ft. wide, will average $250 per ton.

PIOCHE.—The work of sinking the incline has been temporarily stopped, a depth of 460 ft. having been attained.

BALTIC.—Work is going on vigorously. The incline has reached 80 ft. showing a ledge at the bottom of about 3 ft. in width. The vein carries considerable ore which assays about $125 per ton.

MEADOW VALLEY EAST EX.—The lowest workings are about 170 ft. from the surface. A straight shaft has been sunk 150 ft. from that point, a cross-cut run 35 feet from the further extremity of which an incline is being sunk and is 18 ft. in depth.

MARION.—The shaft is about 100 ft. in depth. The ledge is 5 ft. in width in which rich ore is found assaying as high as $300 per ton.

KENTUCKY.—The shaft is down about 360 ft. At the 330-ft. level a drift has been run, in which a connection has been made with the workings of the Raymond & Ely.

PACIFIC TUNNEL.—The tunnel is 1,000 ft. in length, and a contract has been let for another 100 ft.

PIOCHE WEST EX.—A large double shaft is being sunk on the claim and has attained a depth of 200 ft.

KENTUCKY RIFLEMAN.—Still sinking, with the ledge improving in size and character.

PAGE AND PANACA.—Sinking and drifting are going on, but without making any remarkable discoveries.

PIOCHE CHAMPION.—Work on this claim is progressing rapidly. No. 1 shaft is down 80 ft., showing a large ledge. A second shaft, for working purposes, has been started, which is down some 35 ft., and is intended to strike the vein at a depth of 370 ft.

CHIEF OF THE HILL.—The inclines is being sunk, and is 90 ft. deep, and is soon expected to cut the ledge.

SPRING MOUNT.—The shaft, which is a large double one, has reached a depth of 300 ft.

THE SPRING MOUNTAIN TUNNEL is in about 200 feet.

LILIAN HALL.—Drifting is going on about 70 ft. from the surface. Some good ore is being taken out.

INGOMAR.—The shaft is about 420 ft. deep. Contractors are at work sinking 100 ft. further.

KINSTON.—Work is for the present suspended. The shaft is about 250 ft. deep.

HUMBOLDT.

BULLION.—*Silver State*, Oct. 12: Amount shipped from the Arizona through W. F. & Co., since our last issue, was $6,408.

ARABIA.—Livelock and S. S. Grass have recently struck a big thing in Arabia, Trinity Dist. They have located a ledge, named the Virginia, which is 6 ft. thick and well defined. The ore is argentiferous galena, which assays from $38 to $58.50 per ton in silver.

MANITEE.—The Manitee Gold Run Dist. continues to produce rich ore. Several tons have been shipped, which have netted from $500 to $1,200 per ton. Another lot of 4½ tons has just been shipped, which assays $800 per ton.

SEMINOLE T. Co.—The Seminole Co. continues to prosecute work on their property. In the upper tunnel the ledge is 3 ft. thick and remarkably well defined.

ECLIPSE.—Work is about to be resumed on the Eclipse in the main range west of Unionville.

GEM.—At the bottom of the shaft, 175 ft. from the surface, the vein is 18 inches in width, carrying very fine ore, estimated to contain $2,000 per ton.

REESE RIVER.

BELMONT.—Reese River *Reveille*, Oct. 10: Monitor Co. is pushing its tunnel, No. 2, with 3 shifts of men; raising ore from the north incline; opening some breasts of fine ore down in the south workings.

The Monitor mill is fast approaching completion. This Co. is working 40 men.

BELMONT CO—Is opening the lower levels of the Canfield, also raising some fine ore from the upper levels, also running levels 200 ft. down the Highbridge.

EL DORADO CO.—The graders on the new mill site are blasting away in good earnest. In the El Dorado and Arizona mines work progresses steadily. The ore-houses and dump are filled to overflowing. The second level in the Arizona is being continued north. Over 10 tons of ore from the upper workings of the Arizona, worked in the Manhattan mill, yielded over $410.50 per ton.

IONE—STONEWALL.—The E. M. & M. Co. is driving a level south of the incline at a depth of 115 ft, and stoping in the old works above and taking out about 2 tons of first-class, or $150 ore per day. In the new level, ore assaying as high as $2,000 per ton has been cut through.

CROWN.—Mr. Beatie has gone below for the purpose of procuring an engine and other machinery for the completion of the hoisting works.

INDIANAPOLIS.—The Co. is only stoping in the 2d and 3d levels, and taking out from 2½ to 3 tons of $125 ore per day. Employs 10 men.

ELLSWORTH—ELLA FLORENCE.—The Co. is sinking the main incline—5 by 8 ft in size—and working 3 shifts. Present depth of incline 23 ft, with a vein 4½ ft wide at the bottom, and good ore.

ESTA BUENO.—This Co. is driving its third level at a depth of 210 ft. and stoping in the 2d level. Taking out about 2½ tons of $200 ore per day.

WASHOE.

SUMMARY.—Gold Hill *News*, Oct. 12: IMPERIAL-EMPIRE.—The work of opening the 1700-ft level is progressing well. The main drift is 77ft, making good headway. Last Monday morning the 3 o'clock shift of men working on the 1600ft level was shut down in the mine, and have been kept there for 5 days and nights, no communication from the outside being allowed. Rumor has it that a fine body of ore has been struck on that level.

VIRGINIA.—The progress of the main west drift on the 1167-ft level has been quite slow during the week. The main south drift and east and west cross-cuts on the 500 ft level are running through low grade ore. Sinking the shaft 500 ft deeper for a new level will be commenced in a few days. Work on the new hoisting works is progressing rapidly.

CALEDONIA.—All work on the 400-ft level of the new shaft has been stopped for the present. Work in the winze from the 400-ft level of the old works is being pushed with vigor to make connection with the 400-ft level of the new shaft. The prospecting drift south on the 300-ft level of the old works is still pushed steadily ahead, with promise of fine developments.

INSURANCE.—The whole face of the drift is in ore that promises a rich development.

BUCKEYE.—The 375-ft station is opened and a drift run through the ledge 5 ft, developing a fine body of excellent ore, some assays running as high as $65 per ton.

HALE & NORCROSS.—The exploration of the 1500-ft level is pushed forward without any valuable disclosures.

GOULD & CURRY.—The main drift of the 1500 ft level is in 64 ft, making good headway.

SILVER HILL.—Prospecting is carried on at the first level, with very favorable results. In the shaft encouraging indications have been met with.

SIERRA NEVADA.—Prospecting work on the 500-ft level progresses finely. The mill is crushing about 80 tons per day.

CHOLLAR-POTOSI.—Daily yield 160 tons worth $30 per ton. The different ore breasts are looking and yielding finely. The work of repairing the shaft is progressing slowly.

SAVAGE.—Good progress has been made opening the 1600-ft station, and a drift is started for the ledge. The ore developments on the 1500-ft level are more promising; while the body recently opened on the 500 ft level of the old works is yielding finely.

SENATOR.—Shaft down 180 ft with small feeders of quartz in the bottom. The sinking is making excellent progress.

WOODVILLE.—Daily yield 10 tons of high grade ore. Cleaned up $3,600 last Saturday from a run of 100 tons.

JULIA.—The shaft is down 920 ft in good sinking ground. The main east drift is in 200 ft., cutting during the week a fine body of ore, with excellent indications.

KNICKERBOCKER.—The main west drift is in 200 ft.

OVERMAN.—Work on the new machinery is fast approaching completion.

JACOB LITTLE.—Assays from the main ledge during the past week have averaged from $140 to $230 to the ton.

BELCHER.—Daily yield 250 tons. The ore bresats on the 1000 and 1100 ft levels are looking and yielding well. The drift south from the ore stope at the 1000 ft level is in 224 ft, with the face in barren quartz. The drift south from this incline on the same level, to meet the last mentioned drift, is in 149 ft, the face showing barren quartz and porphyry. The drift south at the 1200 ft level is in good ore.

YELLOW JACKET.—Daily yield, 20 tons. A cross-cut east is being made from the main drift north at the 1300 ft level, the indications in which are very favorable for finding ore.

CROWN POINT.—Daily yield 450 tons. The mine is looking well throughout.

KENTUCK.—Daily yield, 55 tons, from the old workings.

WHITE PINE.

REVIEW—BULLION.—White Pine *News* Oct. 5: The shipment from White Pine during the past week, was $11,486.43.

EBERHARDT & AURORA CO.'s MINES.—The Eberhardt and Blue Bell shafts are still sinking. In the Ridsdale and DePass chambers continue drifting from the bottom of the Ridsdale shaft to form a connection with the South Aurora tunnel. Working in the South chamber from the Lady's chamber in a body of high-grade ore, and shipping daily to the Big Smoky mill. The body of ore in this chamber continues improving in richness as developed. Have got good ore in the Central shaft at a depth of 100 ft.

BEECHER CONS.—Work in these mines is progressing as usual, and shipping daily about 28 tons to mill. There are about 700 tons of second class ore on dump.

TREASURE.—The ore in the shaft below the lower tunnel continues to hold out. Work on the Wheeler continues.

EAST SHEBOYGAN.—The drift from the Air shaft to the south drift for ventilating that part of the mine is being pushed ahead rapidly.

COPPER GLANCE.—Ore of good grade is being taken out of the north-west drift, which is being continued to form a connection with the north shaft, where there is good ore.

SILVER WAVE.—The ore in the Boswell works continues and shows some improvement.

OUTSIDE DISTS.—SCHELL CREEK.—Work on the Tehama Co.'s mill is progressing rapidly, and is expected to be completed by the 10th of next month. The mines are showing well and steadily improving in quality and quantity of ore.

WARM DIST.—Considerable work has been done on several of the mines, showing assays from $40 to $400 in silver.

WESTERN SLOPE WHITE PINE MOUNTAINS.—TRENCH.—The north drift is showing good ore and the mine is looking well.

MILLS.—BIG SMOKY.—Running on ore from the Eberhardt & Aurora Co.'s mines.

MANHATTAN.—Running steadily on ore from the Beecher Cons. Co.'s mines.

TAILINGS MILL.—This mill below Shermantown, started up this week on tailings.

MCMAHON.—Schell Creek *Prospect*, Oct. 5: Working three shifts in the shaft and 2 in the tunnel. The shaft is down 70 ft. below the croppings. The tunnel is in 57 ft., showing vein matter and suggesting the probability of a parallel vein. In our opinion the permanence of the vein is established with very encouraging prospects of a valuable mine. There is a large quantity of ore on dump, and we are informed that the Co. will have a ten-stamp mill erected before winter sets in.

JUPITER.—Work being prosecuted with vigor in shaft and tunnel. The shaft is down 35 ft. in fine looking quartz; the tunnel is in 45 ft., showing ore of average quality.

KAVANAGH TUNNEL.—During the week quartz of good quality was struck at a distance of 85 ft.; the owners expect to strike the main ledge of the hill when in about 100 ft. further.

WOODRUFF.—Will start up shortly.

TEHAMA.—Work progressing every day; tunnel in 315 ft.; for the last 15 ft. have been working in quartz; ore is being taken out of the cuts on the War Eagle, Allen No. 2 and other parts of the hill.

SCHELL CREEK.—Tunnel in about 215 ft.; shows some quartz in the face; working on croppings and extracting some good ore; 3 shifts working.

ALBERT.—Tunnel in about 40 ft.; taking out some very fine ore, and working a large force of men.

QUEEN SPRINGS.—LA BROSS TUNNEL.—Work is being pushed day and night; the tunnel is in 180 ft. The Co. intend running it 420 ft. further, when they expect to strike the main ledge of the hill at 300 ft. from the surface.

DISCOVERY.—Ore of fine quality was struck last week about six miles north of Egan Canon.

Arizona.

MINES AND MINING.—YAVAPAI CO.—Prescott *Miner*, Sept. 28: Jesse Jackson & Co., on the Del Pasco section of Bradshaw Mts., struck richer rock than they have yet worked. The mill is running.

Capitalists in S. F. and the East, who part own mines at Black Cañon, talk seriously of starting work upon them.

Placer mining—with paying results—is being prosecuted on Lynx Creek and the Hassaysmpa.

At Weaver the rock worked by the Marcus Co. during the past six weeks has averaged over $100 per ton.

Colorado.

CLEAR CREEK CO.—Central *Herald*, Oct. 2: Drifting progresses on the last lode cut by the Marshall tunnel, 1,200 ft. from the month of the latter, displaying a large, strong vein of ore containing much brittle silver. The Marshall Tunnel Lode No. 5, is producing very rich ore, and the Compass and Squars is also yielding good paying ore.

Glass and Gaskell are obtaining large quantities of immensely rich ore from the Saco.

E. Y. Naylor is driving the Hiswatha and Wild Wagoner tunnels, near Mill City. The former is in 500 ft. On the mountain above, some very rich looking gold ore has been struck on the Root Hog. The tunnel driven along the Wild Wagoner is 405 ft. long, developing an abundance of low grade ore. The width between walls on this lode is 50 ft.

Mr. Wann is rapidly reconstructing the Whale mill for smelting purposes.

IRON.—Colorado Springs, *Out West*, Sept. 16: A new discovery of ore has been made. The deposit is in Wet Mountain Valley, and the ore is claimed to be equal in quantity and superior in quality, to that of Grape Creek.

During the past 10 days the Caribou mill, Middle Boulder, has shipped $20,000 worth of silver to New York.

Idaho.

BULLION.—Owyhee *Avalanche*, Oct. 5: W., F. & Co. shipped from here during the week ending yesterday, 5 bars, valued at $8,548.46.

SOUTH MT.—Mr. Dewey starts up the Independent to-day. This mine has a shaft to the depth of 60 ft., and Supt. Conway will immediately start a level.

ROCKY BAR.—Idaho *Statesman*, Oct. 8: S. Mattingly is crushing very rich ore from the "Lenora" and "Stanley" mines. H. T. Lantis has just got through crushing some 11 tons of Atlanta ore, which paid as high as $1,000 to the ton.

John McNally, on Red Worrior, has struck a very rich solid vein of pure quartz, in the lower level of the "Wide West" and 2 ft. wide at a depth of 210 ft. from the surface, which will pay not less than $150 a ton. Kessler & Dardis are sinking a shaft on the ledge to the depth of 50 ft.

Utah.

LITTLE COTTONWOOD.—S. L. *Tribune*. Oct. 8: On the Grizzly the main shaft is down about 75 ft.

On the North Star work was resumed a few days ago, and will be carried on during the fall and winter.

On the Amador a shaft has been sunk 50 ft., passing through a mineral formation the whole distance run.

The smelters have shut down in East Cañon, but the Pioneer Quartz Mill, New Jersery Milling and Furnace Co. and the different arastras are all in full blast.

ROCKY DIST.—Among those appearing the most favorable at present are the Rockyfellow. The vein, is a large, well-defined fissure of over 6 ft. A shaft has been sunk upon the lead, a distance of 50 ft. or more, showing a uniform width of a fine quality of copper ore. The percentage of copper, from an average of the 100 tons on dump, has yielded over 28 per cent. in copper and $40 in silver to the ton of 2,000 lbs.

Hammond & Co. are vigorously pushing work upon the Champion. A shaft is down on the vein over 70 ft., the ore and fissure looking well.

Homeward Bound, to the depth of 20 ft., the present depth of the shaft, the vein maintains a uniform width of about 6 ft. with a heavy clay gouge on each wall. The ore assays 20 per cent. copper and $40 in silver.

The Belcher shows a vein of about five ft., a shaft has been sunk upon it 23 ft. the ore assaying as high as 30 per cent. copper, $50 silver, to the ton.

STAR.—Unionville (Nev.) *Silver State*, Oct. 5: The De Soto continues to look well and produce rich ores. The Sheba is improving. The ledge is larger and better defined than heretofore. The Trinity ledge is yielding rich ore. A large force of men are at work on the KNOW Concentrator building.

Apparatus for the Firing of Mines by Electricity.

The colliery of Crachet at Frsmeries, Belginm, has recently begun to apply practically elsctricity to ths firing of mines in underground works. The experiments have been followed dnring sevsral months, and have proved undoubtedly, and by ths bsst results, the high value of this improvement at ths point of visw both of economy and ssourity.

Ths author of the nots, Mr. F. Guchez, Mining Engineer, was present at all the experiments mads during ths sinking of a shaft. Ons of ths principal advantagss of ths process consists in ths faculty to firs several mines togetber, the result being, especisily in shaft-sinking, a great economy of tims, and somstimes an increase of usefnl effect from ths simultaneity of the explosions.

The electric wick is formed hy two iron wires placed in a thin board of wocd. the length of which is a little greater than the depth of ths mine-hole. Thess wires, at the end of ths hoard, meet into a small shset iron case containing a fulminating substance which is put in the middle of the powder of the cartridge. The spark is discharged hetween the extremities of the wires about one-twentieth of an inch apart, and determines the explosion. Ths filling and the ramming of the mins don't require any partienlar precantion. The wires pertaining to the electric wicks of the different mines are connected at their upper ends with other wires having the same diameter, and establishing a galvanic circuit hetween those wicks. The extremitiee of tbis circnit connect, in their turn, with two stronger copper wiree, in communication with the electric source. The two principal wires are isolated hy a donble covering of tarred wool and gutta percha, and bonnd together by a general covering of twisted wool, in order to form a eingle rope. This rope is fifty metere long, one end hanging in the shaft at about two meters above the hottom, and can be lengthened when the ehaft becomee deeper. The preparations for the firing of three or four minee are made very rapidly. When they are ended, and all the men raised up or eheltered under proper cover, the electric machine is worked, and all the mines explode together.

Up to tbis dav, more than 4,000 mines have been fired at tbe Crachet colliery, and only twenty bave missed on account of small imperfections, which bsve been since corrected. The machine is enclosed in a wood case, etrong, easy to carry, and waterproof. It produces static electricity by the rubbing of a gutta percha cylinder against a catskin, and accumulates in a kind of bottle like a Leyden jar; an excitator provokes the discbarge. It is worked with a crank. According to the devolopment of the conducting wires, the degree of perfection with which they are isolated, and the keeping in order of the machine, two to eight revolutions of the crank are required. The machine is very simple, and consequently not very liable to get out of order. It ie sufficient to clean the catskin from time to time, which becomes dirty by use, and dry the piecee which would have been chsrged with moisture. Its cost is only 100 francs ($20 gold), the wires not included: the price of the wicks ie about two cente apiece, and as for the rope witb double wire, extending from the orifice to the bottom of the shaft, its price is about twenty-five cents a meter.

This mode of firing comes from Germany: its nse is likely to be extended to all mines and qusrriee. Simple and cheap, it affords at the eame time economy of time and consequently expense, and offere the great advantage to render impossible the numerous accidente occurring by the ordinary method of firing mines. At this last point of view, it deserves all the attention of mine owners interested in the eecurity of their workmen.—*Coal and Iron Record.*

Rediscovery of an Ancient Mine.—The Montezuma mine, in the Ivanpah region, in this county, is a mystery. It was discovered a few months ago by Mr. Mat. Palen and another gentlemau. who are now its owners. It is auriferous, and bears nnmietakable evidence of having been extensively wrought in bygone times. The vein is of eight feet thicknees, and from the surface downwards for more than fifty feet has heea displsced, and the ore removed. The few pieces of quartz left clinging to the side wall of the aperture give evidence of exceedingly rich ore. Near, or in the mine, not the elightest trace of machinery, toole, furnaces, or any other signs have been found that would indicate the chronology of the work or race of meu that did it. Nothing survives of these former miaers except the open, gaping crevice from which the quartz was excavated. The hottom of the crevice hae not been found at a depth of fifty-three feet, owing to the great amount of rubbish which in the course of centuries, has fallen into it from the walls and surface. Could a single mining implement left hy ite ancient owners he unearthed, the mystery ae to who they were wonld be cleared up. After ineffectual attempts to find the bottom of the crevice, Mr. Palen and partner, thoroughly convinced of the exceseive richness of the ore, have commenced tunnelliug, eo as to etrike the veia two hundred feet or so below the apex of the ridge from which it cropped. From the examiaation made there ie the assnrance that in a shorttime will he developed the richest auriferous "find" on the Pacific coast.—*San Bernardino Guardian.*

Eccentricities of Stratified Limestone Formations.

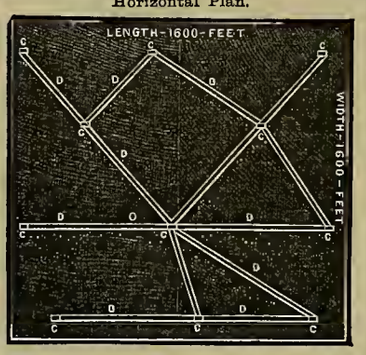
The following letter appears in the London *Mining Journal* of a rscent dats. We have given ths previous lsters of Mr. Sewell on this subjsct in former numbers of the Press, and this is a continnation of them:

In my former letter I described the two fissure veins in the district of Chanarcillo, in Chili, and the length and depth to which they had been worked, I omitted then to state that no quartz matrix or silica was ever found in thess veins, ths principal gangne consisting of crystallized lime-spar, oxides of iron, and alumina. In Jauli, in Peru, I inspected mines in this formstion at a hight of 15,500 feet above the level of ths sea; the fissure veins here carried rich galenas, containing throughout ruby silver ore. These are calcined and smelted in a species of reverberatory furnacs, and the fuel employed is sheep and llama dung, which is collected and dried during the summer months. I resided in these exalted regions, in 1857, for about eleven months, in the management of soms silver mines and reduction works. The latter wers situated at 16,500 ft., the former at 17,600 ft. above sea level. The works consisted of several arsstras for grinding the ores, and the amalgamation was performed in

Sectional Plan—With denudation up to point B.

Treea growing on the silver stratum. A to B, boundaries of the mine. The perpendicular lines denote the ledge, or quartz stratum, as I have named it. The horizontal lines the limestones.

Horizontal Plan.



C, C, C, C, shafts 8 feet deep sunk into the a ratum; D, D, D, D, surface ditches on the stratum, communicating one shaft with the other, and were made to prove the amount of ore contained in sight.

barrels. In the chlorination of the ores I was forced, at first, to use the fuel above mentioned for several months, nntil I diecovered some coal mines a few miles from the works. The limestonee of Mexico I need hardly describe, for they are similar to those of Chili.

Those of Spain are similar to those found in Utah and Nevada, producing similar classes of ore, carbonatee of lead rich in silver, and mostly strata veins. In the vicinity of the Almaden minee I found them to consist mostly of contact veins. having the limestone as a hanging wall, and sandstone as the foot wall. In Utah I have found tbat most of the veins in limestone are strata veins, such as the Emma, Flagstaff, and other mines. The Reid and Benson Mine in Big Cottonwood, in the Wahsatch range, is composed of a fissure vein, cutting the strata, and joined at a depth of 60 feet from surface hy two strata veins, where the large chamber of ore was discovered. The oree of this miae resemble those of the Emma Mine, consieting of decompoeed galenas or carbonates and antimonial silver oree. In the Oquirrih range, which is parallel to the Wahsatch, aud distant about 25 miles, we have two different limeetones—one almost pure, and the other highly charged with silica.

Lion Hill, in East Cañon, distant about fonr miles from Camp Floyd mining district, hae mostly fiseure veins: the bed rock consists of feldspathic porphyry, which bursts through the limestone in eeveral points. In one of these miaee, at a depth of seventy feet from the surface, the bonee of several small animals were found, of the hadger tribe, forming a regular conglomerate with the ore. I have given theee to Professor Leidy, the celebrated palæontologist, to determine for me. Thie is not the first time I have found petrifactiona in fissure veins in the limestonee. In 1852, I forwarded to Professor Cotta, of Frieberg, two petrified shells I found in a vein in Chili, and surrounded by horn-silver. The existence of these bones in the fissure is easily explained. These fissuree are of recent formation, and were not filled up altogether with mineral matter, for in some placee on this hill, ia driving and sinking, hollow spacee have been found in the fissures, from sixty to one hundred feet in length; theee, no doubt, had communication with the eurface, and were undoubtedly the abode of these animale. The importance of the discovery consists in the bonee having been found imbedded in the ore, *proving* that after the death of thess animals ths infiltrations and solutions of ore still continued. I will hereaftsr forward you a description, by Profsssor Lsidy, of this singular occurrence.

Now I come to the limestones on the foothills of East Cañon. On these are sitnated the Rip Van Winkle, Green Chloride mines and several others, which have been under my superintendence from ths time of their discovery. The Green Chloride, however, is the most remarkable of ths whols gronp, and a "rara avis in terris nigroque simillima cygno." This is a quartz stratum, from six to eight fest in thickness, and the angls of declination is from five to ten degrees, and perfectly denuded of all cap work; the underlying rock on which this quartz stratum rests is an argillaceous limestone. Ths workings of this mine havs had to hs carried out in quits a novel fashion, as the accompanying illustrations will explain.

[Since this letsr was published in the *Journal*, Mr. Sewell informs ua that he has commenced an incline shaft on ths quartz stratum, but under ths cap of limestone shalee at point marked *X X*, and has struck very rich horn silver ore. Ens.] The ore is all fres milling or horn silver; 10 tons were recently sent to ths Reno mill for reduction, and averaged $451 per ton. Thers is ahout 500 tons on the dumps that will averags about $80, and about 30.000 tons discovered that will average about $50. This may rightly he named quarrying for silver ors. Two tons taken from one spot produced $2,000 per ton. In Belmont, Nsvada, I inspected last year ths El Dorado Sonth, Monitor and Arizona minss. In these the hangiag wall is limestone, and the foot-wall feldspathic porphyry, and, consequently, a contact ledge. The ores are chiefly horn-eilver, near the snrface, and change into antimonial silver ores, with a little copper generally called stetefeldite. These minee are destined to become celehrated, and are prodncing large quantities of bullion. On my return from the Mineral Hill minee I will forward you informaation as to these limestone formatione.

Henry Sewell.

Salt Lake City, U. T.

Utah Railroads.

One noticeable feature in the wonderful progress being made in our Territory is the increase in the railroads which will soon reach every prominent dietrict in the country. The Utah Southern, on the broad gauge principle has been extended as far as Lebi, where it will stop this season but will eventually be extended as far as the Colorado river, and possibly to the Southern Pacific in Arizona.

The American Fork narrow guage will be completed in a few days from Lehi, its janction with the Utah Southern, to Deer Creek, American Fork Caõon, nearly twenty milee in length. This will be pushed to the Sultana worke before the season closes.

A third enterprise, which will soon be under way aud completed probably hefore snow flies, will he the Bingham Caõon narrow gange road, about seventeen miles in length.

The last road, already being built, will run from Echo through Parley's Park and along the Provo River to Provo, connecting with the Utah Sonthern.

Other roads are projected, but these are all that are fairly under way. Utah ie surely looking up.—*Utah Mining Journal.*

El Dorano South Consolidated.—The Reese River *Reveille* of October 5th saye of the El Dorado South Consolidated Mining Company that the busiest spot in Nye county seems to be on El Dorado Hill. The graders on the new mill site are blaeting away in good earnest. The grading is all in blasting rock. The pan room is nearly completed. Carpenters, masone and blackemithe can be seen in every direction. Another installment of machinery has jnst arrived, and if no eerious delay occure the etamps will be playing on the rich El Dorado oree before the enow fliee. In the El Dorado and Arizona mines work progresses steadily. The ore houses and dump are filled to overflowing. The second level in the Arizona ie etill beiug continued north, and carries with it the eame rich vein of chloridee that has made the Arizona and Monitor minee eo famoue. Over ten tone of ore, taken from the upper workings of the Arizona, and worked in the Mahattan mill of Anstin on the 10th ult., yielded over $410.60 per ton.

Steam Plowing in Cuba.—A sugar planter in Cuba writee that in Novemher, 1868, he commenced work with one of the Fowler steam-plowe, (running with two enginee of fourteen-horse power each,) and since then has broken up 2,000 acres of strong clay land intermixed with stones of all sizee, and reeting for the most part on a etone bottom, plowing to an average depth of eighteen inches. The plow having been managed by an experienced hand, the breakagee have been few and of a trivial character, and the wire rope is still in excellent condition. The lands of the estate have been doubled in value by steam-plowing, and what wae formerly almost an impervious marsh, the effect partly of nature and partly of inefficient cultivation, hae been reduced to a porons soil.

A chill-roll was cast at the foundry of A. Garrison & Co., in Birmingham, Penn., its dimensions being two feet eeven inchee in diameter, and eight feet long on the working face, weighing 29,000 lbs., or 13 tons—said to be the largest chill-roll in the world.

Lida Valley Mines.

A correspondent of the Reess River *Reveille* writes as follows from Lida Valley:

From about the middle of July until within the last ten days very little was done in either developing mines or taking out ore. Despondency superinduced by disappointments had seized upon, and to an extent paralyzed the energies of the miners and mine owners; not that confidence in the mines was wanting, or the ultimats success of the district doubted. The latter is assured hsyond a doubt, and in proof we submit the figures, lsss the fractions, taken from certificates of pnlp assays of ten different ledges, the ore having been worked at the Deep Springs mill, and challenge any mining district in the State to equal the product per ton from the same number of ledges:

Names.	per ton.
Simon Pure	$1,303 00
Sewana	1,171 00
Mountain View	1,016 00
Bennett	1,012 00
Oro Fino	895 00
Lida Bella	724 00
Frenchman	425 00
Martin & Henry	386 00
Monitor	330 00
Rappahannock	265 00

Brown's Hope, owned by the Deep Springs Mill Company, has prodnced ore that worked much higher than any of the ledges named.

Now that the district has been vieited and the minee examined by a practicable, competent and reliable mill man, whose opinion was, when he left on the 9th inst. so far as we know, locked up in his own breast; but snch is the confidence we have in the mines, that to have them examined, together with the facilitiee for reducing the oree, ie the precursor of the speedy erection of reduction works, hence the new impetue given, not only to the miniug interests but to every branch of business. It requires no prophetic pen to see Lida Valley district in the list of first-class bullion producing districte in Nevada.

In Gold Mountain district, 20 miles north of Lida Valley, there are many fine ledges—about 100 locations on record—the developments made on eome 35 ledgee aggregate from 10 to 75 feet in depth. In many of the lodes gold predominates. Though this district is much the senior of Lida Valley, very little developments have been made, save on the State Line ledge until, since the organization of Lida Valley. Bordering on the undisputed domain of the "Noble Red Man," its attractions have not hitherto been appreciated.

There are at present about 20 miners in the district—all buoyant with confidence of soon realiziag handeome compensation for their labor.

Mountain View Consolidated S. M. Co.—The mines belonging to this company are sitnated on Prospect Mountain, Eureka, Nevada. This consolidation bas four firet-class locations, viz.: the Mountain View, Anna, Mazeppa and Lightning-Bug, each having 800 feet in the location. The works of this consolidation cover an area of 100 feet, as the mines are all together and join one another, makiag it one of the most valuahle locations on the hill. The Mountain View has a shaft down about 80 feet, and about 25 feet down they have run a drift 30 feet, taking out rich eulphuret ore. The ledge variea from 18 inches to five feet in width. On the Anna mine they are down about 35 feet, running directly towarde the Mountain View with a ledge about three feet wide and fine rich ore. The Mazeppa has sn incline of about 30 feet, with well-defined walls with a fine showing ledge from 14 inchee to 2½ ft. in width.

The Lightning-Bug hae two shafte. One down abont 12 feet, with an incline running from ehaft of 30 feet, the other shaft about 15 feet, both shafte and the incline showing the richest kind of ore, with pay-ledgee from 21 inches to 40 inches in width. The poorest ore-assays go $180.

Business at Eureka Mills.—The new sawmill of the Eureka Mills Mining Company is in operation, and turne out daily about 25,000 feet of lumber. For the new flume and quartz mill the Company are building 1,200,000 feet of lumber will be required. The new mill is beiag bnilt on the eonth side of the mountain, two miles from the old mill. The ore will be brought to the mill from the mine through the old Mammoth Drain Tunnel, which is 1,400 feet in length. Thie tunnel ie seven feet wide and seven feet high in the clear. The new mill now being erected, it is expected, will be completed this fall, and will have forty etamps. The entire cost of all the improvemente now being made by thie Company in their mine, flume, huildinge, etc., will aggregate $250,000. The ehipment of hullion from the mine for the month of September was $25,000. The Company have now in their employ 326 men, of whom 95 are Chinamen.—*Truckee Republican.*

Mitchell County, Kansas, according to a correspondent of the Waterville *Telegraph*, pans out a petrified sea animal fifteen feet long, and another that measured twenty-two inches between the eyes, the body of which is about three feet in diameter, and to show that that field was appreciated long ago, a field hoe has been fonnd forty feet below the surface, imbedded in solid rock.

Useful Information.

Oyster Babies.

An observer of the oyster says hs is not as stupid as he looks. He can keep his mouth shnt, and thoreby defy all our arts to wils a secret from him. Whon spatting time with the oyster comes, it is said to be sick or milky. This appearancs is due to ths accumulation of ths spat, which is, in tho carlier stages of its dsvelopmcnt, of a creamy consistence of color. Whcu the spat is matnre, it assnmes the spparance of the scraping of a slate-peacil; the parent oyster then opens ita shell, and a kind of mistiness is obscrvablo in the surrounding water.

This is cansed by the myriads of younq oysters scattered in every directiou. No sooner are these tiuy creatures free from thsir mother than they assumo the most active state of life aud motion, dancing and gyrating np and down in concentric columns, aa midgeta play in ths evening sunbeams. Under ths lons of a microscopo yon will sse how exquisitely thess littlo fellows are fashioned.

A pair of tiny shells, the connterpart of thoss of the mature oyster, encloss the yet rudimsntary organs, while affixed to the mantle is a kind of tiuy coronst, compossd of minute, hair-liks appendages (cilia). Ths violent and ceaseless vibration of thess living paddlss serves to row the infant oyster rapidly from the place.

Shonld it bscomo the dsstiny of ons of thsse frsgile beings to become a steady, well-behaved oyster, it finally settles itself on soms suitable rssting-place, to which it makss itssIf fast—no ono ever clearly knows how—by the nnder valvs or shell. . Ths hristls-like oars of cilia, no longer of any ntility, disappear, and now a permauent fixture, the baby oyster hegins to grow.

At about a fortnight old it is not mnch bigthan a fair-sized pin's head, and at three months ahout that of a split pea. Having attainsd a ysar's growth under favorabls conditions, the young oystsr will become as big as an ordinary halfpenny; whils at four years' growth they are considered marketabls.

Antiquity of Fermented Liquids.

It is highly creditahle to the ingennity of our ancestors, that ths pecnliar property of fermented liquids, in virtus of which they "make glad the hesrt of man," sesms to havs heen known in ths remotest periods of which we havs any record. all savages take to alcoholic fluids as if they were to the manor born. Onr Vedict forefathers intoxicatsd themssl ves with the jnice of ths "soma;" Noah, by a not nnnatural reaction against a supsrfluity of water, appears to have taken ths sarliest practicahls opportnnity of qualifying that which he was ohliged to drink; and the ghosts of the ancient Egyptians were solaced hy picturss of hanquet in which the wine-cnp passes round, gravsn on the walls of thsir tombs. A knowledgs of ths process of fsrmentation thersfors, was in all probability possessed by the prehistoric population of ths globs; and it must have bscoms a mattsr of grsat interest even to ths primæval winshibbers tostudy ths methods by which fermentsd liquids conld bs sursly manufactnred. No donbt, therefors, it was soon discovsred that the most csrtain, as well as the most sxpsditions, way of msking a sweet juice fermsnt was to add to it a littls of ths scnm, or lses, of anothsr fermenting juice. And it can hardly he questioned that this singular excitation of fsrmentation in one fiuid, by a sort of infection, or inoculation, of a littls fsrmsnt taken from soms other fiuid, together with the strange swelling, foaming, and hissing of the fermentsd snbstancs, must have always attracted attsntion from ths mors thonghtful. Neverthelsss, the commencement of ths scientific analysis of ths phenomena dates from a period not earlisr than ths first hslf of ths sevsnteenth century.—*Popular Science Monthly.*

Hydroscopy—What Is It?—A Frsnchman by tns name of Paramslle has besn devoting himsslf to ths scientific study of subterransan watsrs, ths kind of ground where they ars to bs found, their flowing, ths physical laws that govern their abundancs or scarcity, and their depth. Ths sciencs is now ssid to hs complste, and it has bsen christened "hydroscopy," or subtsrranean hydrology. Its applications are definite, and amoug them we must place in the first rank ths discovsry of springs and well sitss. Within easy accsss of every villags, almost of every houss, and generally at a little depth below tbe surface of the aoil there exista streama of water. By a simple digging (indicated aftsr a thorough survey of the plncs, and not by the aid of the divining rods, which have made so many dupes), one can channel out the hidden streams, and make them flow to the surface; or else a well can bs dug which will fnrnish an abundant anpply of water. Paramelle has already, it ia stated, discovered 9,500 springa in Francs, and hia disciplss have bssn squally successful.

Do Fishes Think?

It is a novsl qnsstion, bat not beneath ths consideration of a philosopher. It is a common way of dispoaing of difficnlt problems in regard to manifestations of intelligence in animals which ars departnres from the ordinary rontine of their acts, to call them extraordinary deviations from their natnral instincts.

Ths monkey that smoked at ths Zoological Gardens last acason for ths pleasure of it, and dogs which ars met on Broadway carrying home a hasket of provisions, threading their way through crowds of husy humanity, all perform acts ahovs the law of simple instinct, which makes no progress, hnt repeats ths same thing in each snceeeding generstion.

The first associated a sensation of pleasnrs from charging a pips with tobacco, and ths latter has in mind ths approbation of their masters in faithfully delivering the marketing to ths cook.

If there is no reasoning here, what is it? And next, how ars snch mental pheuomsna to bo explained?

Fishes havs a pecnliarly nice sense of smell, and their ears are curiously constrncted with reference to appreciating the slightest concussions at a very conaiderable distancs. When waves dash against rocks or a belligsrsnt contest is raging betwsen aquatic enemies, thsy appear to havs exact knowledgs of what is transpiring, throngh their delicate acoustic organs.

Fishes also receivs impnlsss from ths air, sv●n slight as may he ths force of aerial nndulations on ths dsnssr mediums on which they float. It is positively certain they may bs tanght to gather for fseding at the ring of a bsll. That is a dsmonstration.

If, whsn thsy hear ths hell they rush to ths spot whers the food is given thsm, it is an indication of memory? A particnlar sound is associated with ths idsa of satisfying hnngsr; can thers hs msmory without reflecting?

What property of mind is it hy which they ars instructed, so that by repstition a csrtain amonnt of actual knowlsdgs is aoquirsd, in that thsy do not think?

The Human Ear.

Profsssor Tyndall oonclnded ons of his rscsnt lecturss by giving a minuts description of the hnman ear. Hs sxplained how the sxternal orifics of the sar is clossd at ths hottom hy a circular tympanio memhrane, bshind which is a cavity known as ths drnm; ths drum is separated from ths brain hy two orificss, ths one ronnd, the other oval. Thess orifices are closed by fine msmbranes. Across the cavity of ths drum stretches a seriss of four littls bones, one of which acts as a hammer and anothsr as an anvil. Behind ths bony partition, which is pierced by the two orifices already msntionsd, is the extraordinary organ called the lahyrinth, filled with watsr; this organ is betwsen the partition and the brain, and over its lining msmhrane the terminal fibsrs of ths auditory nsrvs are distribnted. Thsre is an apparatns insids ths labyrinth admirahly adapted to respond to thsse vibrations ot the water, which correspond to the rates of vibration of certain "hristles," of which ths said apparatus consists. Finally, thsrs is in ths labyrinth a wonderful organ, discovsred by the Marchese Corti, which is to all appsarancs, a musical instrument, with its cords so stretched as to accept vibrations of diffsrsant psriods, and transmit them to nervs filaments which traverse the organ. Within ths ears of men, and without their knowledgs or contrivancs, this luts of thrss thousand strings haa existed for agss, accepting ths music of the outsr world and rsndsring it fit for rsception by the hrain. Each mnsicsl trsmor which falls upon this organ sslects from its tensioned fibsrs the one appropriats to its own pitch, and throws the fiber into unisonant vibration. And thns, no matter how complicated ths motion of ths extsrnal air may bs, thsse microscopic strings can analyze it and reveal the constituents of which it is compossd; at lsast such are the prssant views of thoss authorities who best understand the apparatus which transmits sonorous vibrations to the anditory nervs.—*London Paper.*

"What is a Hogget?"—It is an English term applied to sheep, and, like many other similar tsrms, does not ssem to havs any very definite meaning. Wsbster, quoting from ths American agricnltnral writer Skinner, says, "A hoggst is a shsep two ysars old." As we nndsrstand ths matter, howsver, the general mesning of the tsrm as used by English farmers is a sheep, mals or fsmale, from ths time it ceases to be a lamb until it is shorn for ths first time. After it is shorn, it is a "shearing" or "shsarling;" when shorn the second time, it is a "twoshear" sheep, and when shorn tbe third tims, a "thrss-shear" ram, ews, or wethsr, as ths case may bs. A "hoggst," then, ia a lamb, without regard to aex, from five to fifteen months old, or nntil it ia sheared. After that, it censea to be a hogget and becomea a shearling. For the sake of distinction it is, ws believe, proper to say sws hogget, wether hoggst, etc.

Soldering Lead.—Plnmbers' solder is an alloy of 1 part lead and ¾ part tin; apply with an ordinary soldering iron, ths joint having been first scraped clean and rnbbed with tallow or rssin.

Good Health.

The Influence of School-Life on Sight.

Dr. Lisbreich, opthalmie snrgeon and lecturer at St. Thomas's Hospital, London, has hcen making investigations on this snbject in English schools, and finds almost everywhsrs arrangmsnts mors or lsss injurions to the organ of sight. An articls in the *American Artisan* gives an abstract of Dr. Liebreich's remarks, from which ws select ths following:

The changes in ths fnnctions of the visual organ developed under ths influencs of schoollifs are thres in numher:

1. Dscrease of the range of vision.
2. Decrease of the acntencss of vision.
3. Decrease of ths endnrance of vision.

Decrease of the range of vision, or shortsightedness, is dsveloped almost exclusively dnring school-life. It is true that short-sightedness is often hereditary, bnt this must not he thought to mean that the children of short-sighted parsnts are horn with this defect. They have only the predisposition to become short-sighted, and this predisposition is developed during school-lifs, more or lsss, according to circumstancss.

Decreass of acutensss of vision is generally the rssult of positivs dissases of ths eye, which may exceptionslly hs induced at school. This dsfect is, howsver, often produced in one eye by unsuitahle arrangments for work, which disturh the common action of the two syss, and wsaksns ths eys which is sxcluded from uss.

Decreass of sndurancs is a vsry frequsnt affection, and arises principally from two causes. The first is a congsnital condition called *hypermetrophia*, which can hs corrected hy convsx glassss, and which can not thsrefore bs laid at ths door of school-lifs. Ths second is a disturhance in the harmonions action of the muscls of tbs eye—a dsfect which is difcult to cure, and which is generally caussd hy nnsnitable arrangements for work.

Thess thrss anomalies all ariss from ths same circumstances, viz.: insufficient or ill-arranged light, or a wrong positiou during work.

Insufficient or ill-arranged light obliges ns to lessen the distance hetwesn the eye and the book while reading or writing. Ws must do ths same if the desks or seats ars not in the right position or of ths right shaps and sizs. When the eye looks at a very near object, the accommodating apparatns and ths mnscls which turn tho sys, so that ths axes convsrge toward the same object, are hrought into a condition of a greater tsnsion; and this is the principls cause of short-sightednsss and its increass. If the mnscles of the eys ars not strong enough to rssist such tension for any length of time, one of ths eyes is left to itssIf; and while one is directed to the objsct, ths other deviates ontwardly, receives false imagss, and its vision hecomes indistinct. Or, perhaps, ths mnscles resist these difficulties for a time, bscoms weary, and thns is producsd the diminntion of endnrancs.

In ordsr to prevsnt these svils, ths light shonld he snfficisntly strong, and fall on the tabls from the left-hand side; and, as far as possible, from above. The students should sit straight, and not havs ths book nearsr to the sye than ten inches at the least. Bssidss this, the book shonld he raised 20° for writing and ahout 40° for reading. The proper light ie most easily ohtained if ths class-room is of an oblong shaps; ths windows bsing in one of ths long sides, and the desks arranged parallel to the short walls, so that ths light falls from ths lsft side. The dssk of ths master should bs placed nsar the short wall toward which the scholars look.

Tea, Coffee, Cocoa, and Alcohol.

Ws extract from the *British Medical Journal* ths conclnsions of a French physician, Dr. Angel Marvand, who has heen experimenting on the physiological and thsrapsutical effects of coffes, tea, cocoa, maté or guarana (Paraguay tea), and alcohol, which he classes together as aliments of economy, or anti-wasts foods. He considsrs their influence on nntrition from two points of visw as stimnlants to ths nervons system, as anti-waste foods or anti-assimilators. Alcohol acts directly on ths sensory apparatns of the spinal cord, and indirectly on the motor apparatns. Cocoa acts directly on ths motor apparatus, which it excites in the same mannsr as strychnins. Coffee, tea and maté act principally on the brain. Alcohol and cocoa excits ths exerciss of the muscles; coffee, tea, and maté, the exsrciss of thougbt. Further, by lessening ths wasts of ths tissnes, connteracting organic oxidation, and diminishing loss by means of ths secretions, they all act as alimsnts of sconomy. In this way is explained their action in stimulating to work in ths evening, in partly supplying the want of solid food, and in modsrating vital comhnstion. Hence arisea their incrsaaing consumption, and their mors general uae aa articles of daily régims; hence, too, their ntility in alimentation, and their important place in hygiene. The abuse of theas ailments has, it ia true, two principal inconveniences. In the first place, ths excitement of ths nervons aystem which they cause ia liahle to bs followed by fatigue, weakneaa, and even inertia. In the sscond place, hy their inteference with and reduction of the processea—indiapensably necessary to life—of combination, transmntation, and decomposition, thsy may canss arrsst, snspension, or even complets suppression of the nutritive changes in the cellular elements, and may produce as results, torpor, atony, fatty degeneration, and necrobiosis of the tissues. Thus ars explained alcoholism, coffeeism, thsinism, and cocoaism.

Mental Vigor in Old Age.

Of a cslebrated writer, whose age is sixty-seven, it is said: "He now lives in retirement, having given up all labors, literary and otherwiss." How often is this record made of men whose powers ars unimpaired and whoss lahors, if continnsd, might hless ths world to the end of time.

It is ssid of Arnanld, the Janseniet, that hs wished his friend Nicole to assist him in a new work. Nicols replied: "We are now old; is it not time to rest?" "Rest," exclaimed Arnauld, "have we not sll eternity to rest in?"

Dr. Samuel Miller says: "There is no donbt that the prematnrs dotage of many distinguished men has arisen from their ceasing, in advanced life, to exert their facnlties under the impression that they wsre too old to engage in any new enterprise."

When John Adams was 90 years of sge he was asked how hs kept the vigor of his faculties np to that great age. Hs replied "By constantly employing them; the mind of an old man is like an old horse; if you wonld get any work out of it yon mnst work it all the time."

We may havs many remarkabls instances of earnest aud successful workers after they have passed into the psriod known as old ags.

Ecclesiastical history tells the story of Cassidorus, who, at ths age of 70 rstired to monastery and dsvoted ths remaining twenty ysas of his lifs to literature and rsligion; and of Epiphanius, who hecams an author at 64 aud wrote ssvsral largs works bsfors his death.

Betwesn ths ages of 58 and 67 Baxter wrots forty works; after the age of 66 soms of his most valuabls works were writen.

"Ths only rsmarkabls thing," says Hanna Moors, "which helonged to ms as an authoress, was that I had writen elevsn books aftsr the age of sixty."

Says Lord Brougham, at ths conclusion of his autobiography: "If any statsments have been feehly and inaccuratsly rsndsred, it may bs remembered that I began this attempt aftsr I was eighty-thres years of age, with snfsebled health, failing memory, and but slight materials hy ms to assist it."

Plato disd at ths ags of eighty-ons, it is said, with psn in hand; and an account is given of anothsr who wrote a history of his time at the ags of one hundred and fifteen.

Cundurango and Sarsaparilla.—The Philadelphia *Medical Times* remarks that "It waa not ths cnring of cancer, bnt it was the obtaining of a profit of somswhers abont 1,900 per cent. ($38 per ponnd on an articls costing not $2 per pound), that animated the advocates of cundurango. Ths hnhble has, however, been pricked; and we presnme that Messrs. Bliss & Keens, mors in sorrow than in anger, watch ths fading glories of their great spscific. They are making a fesble stand, or some ons is trying to do so for them, on its anti-syphilitic powers; this will psrhaps work off the stock they have on hand, bnt it will hsrdly do mors.

Onè point of cnrions dissimilarity may he noticed betwesn the medical history of this article and that of its analogus, sarsaparilla: namely, the comparatively short time reqnired for ths sxplosion of the claims of the formsr. Ths explanation is undonhtedly to he fonnd in the free and constant rsports of the resnlts of experiment all over ths world, which modern means of commnnication alons conld render possible. Sarsaparilla held its own in country nsighhorhoods, rstired towns, and rsmote places, long after it had besn trisd and fonnd wanting at ths grsat centrss of msdical sciencs. Cnndurango is known as a stnpsndous failurs wherevsr it is known at all."

Sprains and Bruises.—Thsse injuriss ars sometimss very distressing and their consequsnces vsry ssrions. The dsnss ligamsnts and synoval membranss of the joints swell, and somstimss inflame, as the result of local injnries, and the pain is oftsn sxtreme. Bnt simpls watsr is all the treatmsnt nscessary in any cass. It shonld howevsr, be of a tempsrature adopted to ths circnmstances, ths purpose being to unload ths congested vesssl of the injured parts as much as possible. If ths parts are hot and painful, apply cold water or cold wet cloths, frequently renewed, nntil ths heat hecomes normal. If thsre is pain or tendernsss without increased hsat apply fomsntations until the pain is relieved. All ths after dosing reqnired in either case is a wet cloth covsred with a dry ons, and worn until all tsnderness is gone. This simpls treatment will do all that any medication can do, and is hetter than all the liniments and lotions, plasters and poultices that wsre evsr invented.—*Science of Health.*

Cold in the Throat.—This diseass is manifsst in fowls by a noiss, as if aome aubstance had stuck in ths throat—phlegm is present in the throat. The following remedy ia highly recommended: A tablespoonfnl of water containing two dropa of the tinctnre of aconits, given two or three times a day, and plenty of fresh watsr to drink.

Frost-bitten Limbs—Shonld hs immsdiatsly hathed in cold water, and rnhbed until heat ia restored. Avoid warming numbsd hands and fset at ths fire.

MINING AND SCIENTIFIC PRESS.

W. B. EWER.....SENIOR EDITOR.

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ILLUSTRATIONS AND REPORTS OF MINING ENTERPRISES WANTED.—Drawings or photographs of mining works that are of general interest to our readers are solicited for publication in this journal. Official reports of Companies, and description of mines of importance, of special interest, are also desired. Sketches of any new method and discoveries will be very acceptable.

San Francisco:

Saturday Morning, Oct. 19, 1872.

Gold and Legal Tender Rates.

SAN FRANCISCO, Thursday, Oct. 17, 1872.—Legal Tenders having, 88¾; selling, 89. Gold in New York to-day, 113⅜.

Table of Contents.

ILLUSTRATIONS.—Reversible Water Filter, 241. Sectional and Horizontal Plans of Limestone Formations, 246. Sectional Vein of the Comstock Lode, 249.

EDITORIALS.—A Jury of Experts; A New Motor for Sewing Machines, 241. The California Slate Fair, 252.

CORRESPONDENCE.—Mining in Utah—List of Patented Mines—New Improvements in Salt Lake City—Walker House, etc., 242.

SCIENTIFIC PROGRESS.—Climatic Changes on the Earth; Boring for Science; Has Our Climate Changed; A True and Real Scientist; Barometric Pressure and Life, 243.

MECHANICAL PROGERSS.—Manufacturing Statistics; High Pumping; Dredging on Ocean Bars; Apparatus for Excavating Beneath the Surface of Water; To Cut and Bore India Rubber Stoppers; Tinning with Zinc Instead of Tin; A New Theodolite, 243.

MINING SUMMARY from various counties in California, Nevada, Arizona, Colorado, Idaho and Utah; Mining Shareholders' Directory, 244-5. Market Reports, 252.

USEFUL INFORMATION.—Oyster Babies; Antiquity of Fermented Liquids; Hydroscopy—What is It; Do Fishes Think; The Human Ear; What is a Hogget, 247.

GOOD HEALTH.—The Influence of School-Life on Sight; Tea, Coffee, Cocoa, and Alcohol; Mental Vigor in Old Age; Cundurango and Sarsaparilla; Sprains and Bruises, 247.

MISCELLANEOUS.—Notes on the Reduction of Gold Ores; Kern County Mines; Montana Fair, 242. Apparatus for the Firing of Mines by Electricity; Utah Railroads; El Dorado South Consolidated; Steam Plowing in Cuba; Lida Valley Mines; Mountain View Consolidated S. M. Co.; Business at Eureka Mills, 246. Columbus Mill and Mining Company; What is Said About Coffee; The Crosby and Judd Works; Progress in Utah; Railway Air-Cushion; Printing from Photographs, 250.

SAMPLING OF ORE.—Our readers will recollect the sampling works of S. W. Howland & Co., in this city, for the crushing and sampling of ores, in which a close approximate estimate of their richness is obtained, so that sales of parcels of ores are effected here. Mr. Howland, the pioneer in this business, who has for some time been absent experimenting on ores in Utah Territory, has lately returned, and having dissolved partnership with Mr. Thurman several months ago, has resumed business at his original quarters, corner of Drumm and California streets. He has introduced several improvements in his apparatus, the result of extensive experience. One of these consists in the construction of a false bottom to the mill in which the ore is finely pulverized, so that every minute particle can, it is claimed, be recovered, and a reliable sample obtained. Mr. Howland requests that when possible, owners of ores or their representatives will be present at the final sampling and cleaning up of their several lots, which will prevent the possibility of the manner of sampling being called in question by any party.

MINING ACCIDENTS.—Thomas Manning, a miner in the Meadow Valley mine, Ely district, was killed by a cave on the 10th inst.

Edwin T. Lake, Chief Engineer of the Eureka Consolidated Mining Company, was crushed to death in the machinery last week, while attempting to adjust a belt.

Notes of Travel in Nevada.

[By our Traveling Correspondent.]

The Comstock Lode.

The characteristics of the famous Comstock lode, its discovery, extent, geological features, the mines upon it, etc., have been commented upon by the press, technical works, etc., so often, that they are familiar to all interested in mining operations, I shall therefore only give your readers some slight idea of a few of the mines as they now are, instead of going into well known particulars; suffice it to say that the ledge was discovered in 1858 by some miners who were working gold placers. The black stuff, as it was called, or rich silver ore, which interfered with their mining operations, was taken to Mr. Melville Atwood, at Grass Valley, to be assayed, and a short time after the result was made known the great Washoe excitement broke out. This happened in 1860, and was one of the most important excitements which ever occurred on the Pacific slope, where the people are especially prone to "rushes" of this kind, now confined principally, to California street in your city.

Character and Extent of the Lode.

The Comstock lode runs nearly north and south along the eastern slope of the Washoe mountains, at the foot of Mount Davidson their loftiest peak, which is 8,080 feet above sea level. Its outcrop is not continuous but consists of parallel belts of quartz extending from east to west, and in many places nearly a thousand feet in width, visible chiefly on the tops of the highest spurs running down from the main ridge. The west wall is separated from the country rock by a well defined clay seam and keeps a uniform dip of about 40° to the eastward at the surface gradually increasing to 45° which it maintains to the lowest depth explored. Near the surface the east wall has a false dip west but gradually becomes vertical at 300 feet down and it turns to the eastward between 400 and 500 feet, and after that continues down more or less parallel with the west wall. This eastern, or hanging wall, is not so clearly defined as the foot wall, for it frequently drops down near to the latter. When this is the case another clay seam is usually found to the eastward. The length of the lode as far as known is about three and one half miles, extending from the Utah mine on the north side of Virginia city to the Overman on the south side of Gold Hill, the ledge matter varying from 20 to 600 feet in width, but not by any means all productive. The ore chimney runs like a wave; in some of the mines it appears near the surface while in the next one adjoining it may dip to the 400 foot level, rise to within one hundred feet of the surface in others and again dip to the one thousand foot level in another. This chimney of pay ore has varied from a few feet in thickness to between 400 and 500 feet. In some of the mines a second chimney of ore has been found, and even passed through, after passing through barren quartz, and this is one reason why so many companies are working at an apparent loss, for they all hope to strike this ore body.

Bullion Yield.

The yield of bullion from this extensive lode has been enormous, and various estimates have been made from different sources to ascertain its exact amount. The magnitude of the operations have been such as to render it difficult to obtain the correct figures in all cases, but it may be summed up as follows, without particularizing the yield of each mine:

From 1860 to Dec. 31st, 1869	$118,480,636
Jan. 1st, 1870, to Dec. 31st, 1870	11,790,713
Jan. 1st, 1872, to Dec. 31st, 1871	11,053,328
	$141,324,676
1872.	
January	$ 914,189 22
February	954,111 38
March	1,066,247 70
April	1,691,970 31
May	1,422,396 86
June	1,162,161 90
July	1,157,014 23
August (to 18th)	387,661 18
Yield Jan. to Aug. 18, 1872	$ 9,136,752 78
" from 1860 to Jan. 1, 1872	141,324,675 00
Total Yield	150,460,428 78

How much of this immense amount of money has been *profit* it is impossible to state. Some of the mines have been wonderfully productive and paid their owners handsomely, while others have realized nothing at all. In the early days as mining on the lode, and, in fact nearly up to the present time, the expenditures have been very great. Costly machinery and reduction works, high price of fuel, great cost of reducing ores, difficulty of transportation, all increased the expenses so much that only the richest ores could be worked to advantage. Now, railroads have exercised their usual influence, the country is settled with a permanent population, ore is worked at a comparatively low cost, rich ore has been found in the lowest levels of the deepest mines, and in fact all circumstances show that hereafter the profits from the mines will be greater than heretofore. The completion of the Sutro Tunnel will assist materially in effecting this needed change, since it will drain the mines and do away more or less with the expensive pumping machinery now in use, at the same time save the trouble of hoisting the ore such great distances. The bullion yield given above came from the following mines, commencing on the extreme north end of Virginia City and extending to the south end of Gold Hill.

Locations and Feet Claimed.

	FEET.		FEET.
Utah	1,000	15*Imperial Empire	123
Allen	925	14*Bacon	45
Sierra Nevada	2,667	13*Empire North	66
Union	332	12*Eclipse	80
Ophir North	1,200	11*Trench	20
Mexican	100	10*Empire South	20
Ophir South	200	9*Plato	10
Central	160	8*Bowers	20
California	300	7*Piute	20
Central No. 2	100	6*Consolidated	61
Kinney	50	6*Rice	13½
White Murphy	210	4*Imperial South	65⅔
Sides	500	3*Challenge	50
Best & Belcher	224	2*Confidence	130
Gould & Curry	921	1*N. Y. & Washoe	130
Savage	758	Yellow Jacket	967
Hale & Norcross	400	Kentuck	90
Chollar Potosi	1,434	Crown Point	540
Bullion	967	Belcher	940
Exchequer	400	Seg. Belcher	160
Alpha	278⅓	Overman	1,200
15*Treglone	31⅓		

[By reference to our illustration, the situation and number of feet in the mines on the lode, will be seen. The mines marked thus * and numbered from 1 to 16, located on Gold Hill, are so close together that it was difficult to get their names on the map. By referring to the table showing locations and feet claimed their names will be seen and the number of feet in each. The diagram is sufficiently clear as to need no explanation. Other diagrams, showing the geological formations and topography of the country, in connection with the Sutro Tunnel, will appear as soon as the engravings are completed.—Ens,]

As far as developments thus far go, the most of the wealth which is under Gold Hill seems to have concentrated in the Crown Point and Belcher mines. Still the success attending the progress of work in the deep levels of these two mines inspires the owners of the others with hope that the question of richness is only one of depth in the whole line.

The Crown Point

As well as the Belcher has the ore body growing richer and wider in the 13th level. The assays run all the way from $200 to $1,000 per ton and the vein is about 126 feet wide. In May the Crown Point mine paid $500,000 in dividends which money was obtained from 11,478 tons of ore from the 1200-foot level. During that month the ore averaged $65.67 per ton and the yield for the month was $819,000. In May, June and July the work on the 1200 and 1300-foot levels was temporarily suspended on account of water in the shaft and breakage of machinery. They then worked the upper levels which did not run so high. They then paid $300,000 per month dividends, but in August it was passed on account of a cave, although the earnings were $265,000. No dividends have been paid since that time by this mine. The mine is now yielding about 460 tons of ore per day from the 1100, 1200-ft. levels. The ore body in this mine now fills the walls, being 126 ft. in width on the 1100, 1200 and 1300-foot levels. This ore is sent to mill just as it comes without sorting, as there is no waste at all. Number of men employed in the Crown Point is 400. J. P. Jones is Superintendent and G. F. Kellogg is Foreman.

This mine, as well as the others on this lode, is literally infested with rats, a circumstance which must seem peculiar to persons unfamiliar with the fact. They are fat and hearty and instead of being an annoyance to the miners are looked upon as their friends. They find plenty to eat, scraps of lunch, candle ends, etc. The reason why the miners are glad to have them there is because their motions give them the alarm in case of an impending cave. At the time of the great cave a few months since all the rats in that part of the mine left, and the miners followed their example in time to save their lives. The probability is, that they felt a gradual contraction of their holes and natural instinct led them to arrive at the cause. Visitors will therefore be careful not to attempt to kill any rats in the mine unless they want to try their skill in fighting miners.

Belcher.

The Belcher is now working 350 men. D. B. Tyrell is Superintendent. This mine lies next adjoining and south of the Crown Point and as above stated owns 940 feet of location. The daily yield at present writing is about 260 tons of ore, taken principally from the 1000 and 1100-ft. levels. The main incline is sinking at a good rate and the station will be ready for hoisting about the 15th of October. The ore body in this mine is similar to that in the Crown Point in width, richness and other characteristics and opinions differ as to which will prove the richer. As regards the width of vein and the pay body there is little or no difference in either one. The Belcher has in the past been working under great disadvantage from being compelled to work its levels from the Crown Point, its shaft being 715 feet south of the Crown Point. All the ore it raises at present is carried through the 1100-ft. level of the Crown Point, across the Kentuck 90 feet and 200 feet into the Yellow Jacket to reach the Jacket shaft where it is hoisted. In this manner the last three levels, the 1000, 1100 and 1200 ft. have been opened. They have also sunk a winze to the 1300-ft. level. At the time of my visit it was excessively hot, the thermometer standing at from 90° to 115° in the mine; so hot that it takes from two to three men to the pick, that is one man works 20 minutes and goes to a cooler spot while another relieves him, and he is relieved in turn. The water from the 1100-ft. level is quite hot as it also is in the Crown Point from both the 1200 and 1300-ft. levels. The mine turns out in the neighborhood of 5,000 tons per month, which runs from $60 to $70 per ton. They have been paying regular dividends of $312,000 per month for some time. There is no conceivable reason why the same body of ore will not continue on into the Segregated Belcher and Overman, as it is known to exist in the Empire, Imperial and Kentuck.

The following will give some idea of the state of the workings of this mine at the time of my visit:

No. ft. main drift south from Crown Point line 1000-ft. level 200 in ore; do. 1100-ft. 590 ft. 300 ft. in ore; do. 1200-ft. level 120 in ore; average width of ore on track floor of 1100-ft. level 70 feet; length do. 300 ft.

The width of ore bed on the 1000 and 1200-ft. levels was not known. Depth of incline and shaft 1,150 feet. It is impossible to give any estimate of ore in sight, as the headings and cross-cuts on the various levels are not far enough advanced either upon the 1000 or 1200-ft. levels to allow even an approximation.

At or near the line of the Kentuck, in passing from the Jacket shaft to the Belcher mine, I encountered a livery stable, where there were two hale and hearty mules. They have been down there some months and are used to transport the cars of the different mines to the Jacket shaft for hoisting. The mules draw these ore cars about 1,500 feet.

Yellow Jacket S. M. Co.

Incorporated July 17th, 1862. There are 1,200 feet in the mine in 24,000 shares. Total product from incorporation to Sept. 1st, 1872, is $14,272,172; of this $12,772,173 was from bullion and $1,500,000 from sale of ores. Dividends declared since incorporation, 1 to 25 inclusive, $2,184,000; assessments levied, 1 to 14 inclusive, $1,518,000; excess of dividends over assessments, $666,000; or dividend per share, $91; and assessments per share, $63.25; net profit per share, $27.75. All above the 1,100-ft. level is worked out; 2 winzes sunk to 1300-ft. level from this one which is 300 feet north of shaft and 400 feet deep; and the other 550 ft. north of shaft and 450 ft. deep; on the 1200-ft. level one drift runs east from station 300 feet; on the 1300-ft. level one drift runs east from station 300; one drift north from this drift 550 feet; and one drift south from this drift 240 feet; on the 1400-ft. level one drift runs due east 125 feet; on the 1500-ft. level drift runs due east 85 feet; bottom of incline, vertical depth, 1,534 feet; about 180 men are employed in this mine. The officers of this mine are as follows: Trustees—Thos. G. Taylor, Wm. Sharon, D. L. Bliss, T. B. Storer and G. W. Hazleton. President, Thos. G. Taylor; Secretary Geo. W. Hopkins; Treasurer, Wm. Sharon; Superintendent, T. G. Taylor.

Chollar-Potosi.

This mine is now yielding about 170 tons per day worth about $31 per ton. The ore breasts in the Belvidere and Blue Wing sections are looking well. During the fiscal year ending June 1st, 1872, this mine produced 37,789 tons of ore, principally from these sections. The company milled 35,930 tons yielding $940,120—an average of about $26.17 per ton. The previous year, 84,681 tons were produced and the year before that 56,636 tons. The profit on the ore last year, after deducting expenses, was $7.44 per ton, the previous year the profit was $24.61 per ton against $8.06 in 1869-70. The amount disbursed to stockholders as dividends for the year was $252,000. This consisted of 8 dividends, one of $2 per share amounting to $56,000 and 7 of $1, each one being $28,000. The previous year the company disbursed dividends amounting to $1,946,000.

Savage Mine.

The daily production of the mine is 100 tons of ore. This comes from the 2d and 3d levels, of the North mine, 11th and 12th levels of the South mine, and from the 5th and 6th levels of the old mine, and taken together has been of a low grade. But the recent strike of a new body of ore on the 6th level of the old mine, about seven feet wide, and assaying $100 per ton, will materially raise the average value of the ore, and be an important acquisition if it should prove to be of the extent which is now anticipated.

At present they are extracting from the 11th level 50 tons, and from the 12th level 25 tons daily.

On the 12th or 1,500 foot level, so called, which is the lowest level yet opened, the work so far down has been principally to make connection with the winze down from the 11th level, which is about 30 feet from the South line of the mine, for the purpose of ventilation. This connection has been made, and furnishes plenty of air, and the drifting is now being continued on to the Hale & Norcross line. On the route of these connecting drifts, ore has been found, from which some very good assays have been obtained, and a cross-cut to the East shows the ore to be extending out in that direction, and indicating that the ore vein is quite flat, pitching fast to the East. There is such a decided improvement in the quality of the ore thus far met with on this level over that on the level above, that it gives much encouragement to believe that the vein matter which is very wide in this level will, on the next level below, concentrate into a body of productive ore.

The shaft, down to the 10th level is perpen-

dicnlsr. From that point it is carried down un an incline at an angle of 38 degrees, and this incline has now reached 160 feet below the 12th etation, leaving bnt a short distance to go to reach a point where another 100 foot station can he opened.

The shaft at the old mine on B street is in good repair; the engines and machinery for hoisting, work smoothly, and are amply snfficient for any work to be done there. The shaft on E street, which is the principal centre of the company's mining operations, and the shaft incline, are iu excellent condition. There are three powerful hoisting engines, working separately, ono for each compartment of the shsft, and althnugh they are now nsed forlifting from a perpendicular depth of nearly 1,600 feet, they are of sufficient power to lift from a considerably greater depth than that. Steol wire ropes aro nsed, five inehee in width aud three-eighths of an inch in thickness. There is also one large beam engine, used exclnsively for pnmping—a model of strength and of smooth and easy working, and with power enough tu pump 1,000 feet, at least calculation, deeper thau it is doing at present. Tho running of the engine six hours out of every twenty-four honrs is sufficient to keep the mine completely drained of water. Mr. A. C. Hamilton is the Superintendent of this mine.

Consolidated Virginia M. Co.

Working about 40 men. Main ehaft of three compartments—pump shaft 6x5 feet in the clear. Two hoisting shafts 4½x5 feet in the clear, each. Shaft down 500 feet, aud prospecting on that level, driving drift south in very promising quartz, carrying low-grade oree and cross-cutting; slso driviug prospecting drift north from the Gould & Cuary shaft 1,166-feet station, and at present making cross-cut west. New and heavy machinery is in course of construction, and will be orected immediately, wheu the sinking of the ehaft will he commenced to make connection with the 1,166-foot drift of the Gould & Curry. Sam. Curtis is Snpt. of the mine.

Senator S. M. Co.

Original nnmher of sharee of incorporation 24,000; J. E. Do La Montagnie Pres., Henry Boyle Sec., and H. V. S. McCullough Supt. This company's hoistiug works are located ahont 1,500 feet east of the Hale & Norcross, on what is snpposed to he a parallel ledge, or ledges. This corporation claim a location of 600 feet, running north and south, situated hetween tho Julia mine on their south and the Colnmbia on their north extension. Their improvemente consist of fine hoisting works, run by steam; their main working shaft is down vertically 260 feet, in three compartments, 6 by 15 feet. At a depth of 200 feet in this shaft, drifts are run, one east 100 feet and about 80 feet to the west; in this latter drift, a body of oro 8 feet thick was struck; it is low grade, assaying about $15 per ton; but betterindicatione are obtained for ever foot advanced. It is the intention of tbis company to sink some 800 feet and then cross-cut. The ledge matter in this mine pitches east at an angle of 45°. No 4 shaft of the Sutro tunnel is on a line with this company's shaft, and the tuunel when completed will pase within 150 feet of this company's works. Their main shaft will he pushed downward as fast as time and money will admit.

Virginia and Gold Hill Water Co., Virginia, Nev.,

Is an incorporation. A. K. P. Harmon is President; W. E. Dean, Secretary, and N. C. Hall, Superintendent. Thie company supply the principal portion of all the water consumed at the mills and the cities of Virginia and Gold Hill. The supply of water to furnish this Company's works is brought in wooden flumes a distance of from 2½ to 6 miles; ohtained hy tunneling into the eurrounding mountains. One of these tunnels is run into the mountain a dietance of 4,000 feet through the hardest kind of rock. They have a capaeity to furnish 50 inches of water daily, under three-inch pressure. This ssme Company are now engaged in constructing flumes and pipes, which are expected to he completed hy this time next year, for hringing in an additional supply of water from the Sierra Nevada mountaine, a distance of 27 miles; it is taken from the vieinity of Lake Tahoe. Another water company, known as the

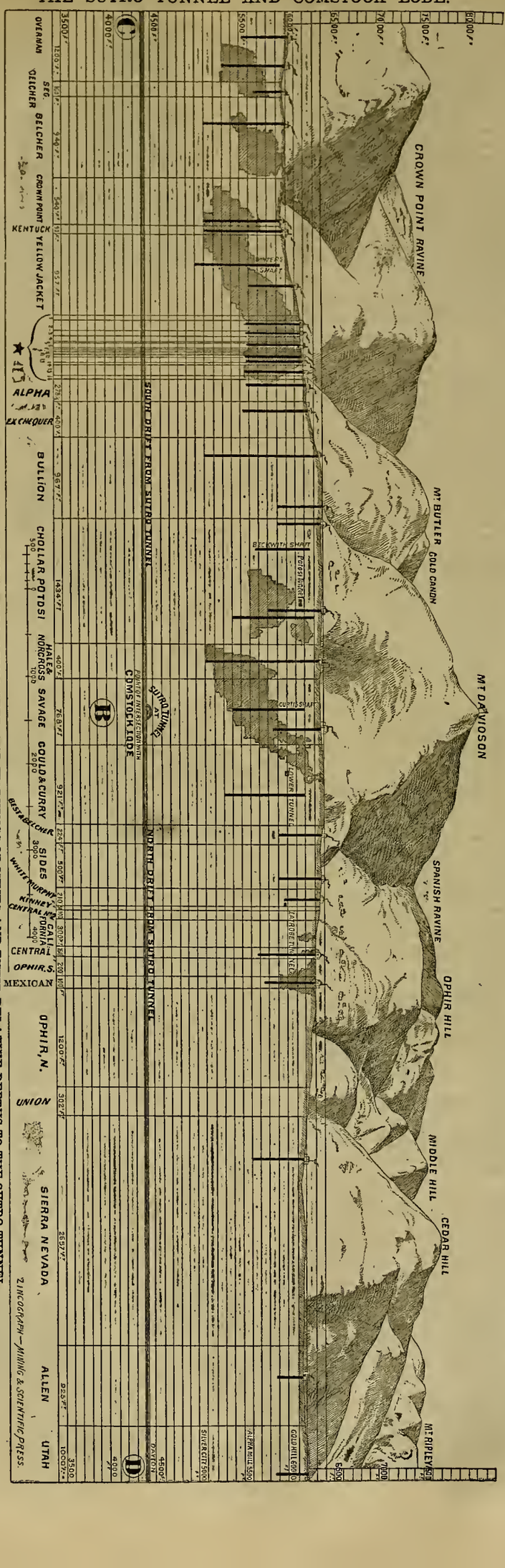
Cole Water Company,

A California incorporation, supply ahout one-fourth, or the halance of the consumption of water in this district. This Company ohtain their supply in a similar way to the ahovementioned one.

Neighboring Towns.

The neighhoring towns on and eurrounding the Comstock lode are numerous and are as followe: Virginia City, the principsl place, is the county eeat of Storey county, and contains a little over 10,000 inhabitants; elevation 6,260 feet; two excellent daily papers, the *Virginia Enterprise* and *Chronicle*, are published here, and the city has as much life and business as many of its size in older settled districts. It ie distant hy rail 344 miles from San Francisco. Gold Hill next in population is three miles south of Virginia City, at an elevation of 6,000 feet, in the same county, and has a population of 4,000. Passing from Virginia City to Gold Hill the stranger would uot know when he wae out of one town and into the other, for it ie settled eo thickly as to form in reality one place. On what is knowu as the "divide" between these two towne are eituated the foundries and machine shope. The following firme are carrying on the principal hueiness in that line: The Gold Hill Foundry and Machine ehop, Geo. Emmett, proprietor smploye ahout 60 men.

THE SUTRO TUNNEL AND COMSTOOK LODE.



The Fnlton Fonndry employs 50 men, John McCone, proprietor. Union Iron Works, Tyrrell & Cnmmings, proprietors, employ about 75 men. My attention was called to a spnr wheel in the latter shop, which is intended for the hoisting works of the Chollar-Potosi mine. This wheel 12 feet in diameter has a 12-ineh working face, and weighs 7¼ tons, as fine a looking casting as I have seen turned nut in your city. Among the fine buildings in Virginia City is the Odd Fellows' Hall, which will he completed abont February of the coming year. The structure will be 125 feet in length, runniug from C to D street, and fronting 45 feet on C street. It is 4 etories high on D street and three stories on C, owing to the great inequality of the ground. The public hall will be the entire length and breadth of the building with dressing rooms and galleries. The hnilding will cost when completed about $60,000.

American City lies 2½ miles sonthwest of Gold Hill; contains about 1,000 inhabitants. Silver City, one mile southeast of Gold Hill, is in Lyon county, and has a population of 1,500; elevation 5,000 feet. Dayton, the county seat of Lyon county, is 4 miles nearly east of Silver City, at an elevation of 4,500 fect; population 1,000. Sutro, in the same county, is three miles nearly north of Dayton and five miles due east of Virginia City. It is at the mouth of the Sutro Tunnel, an elevation of 4,400 feet. It contaius only ahout 300 inhabitants. These towns derive their principal eupport from the mines on the Comstock lode,

Timber and Improvements.

The timher that once covered the hills and mountains surrounding Gold Hill and Virginia, has all passed from sight. The visitor of ten years ago will ask, where hae it gone? Our answer wonld he, look at the husy tows and cities above enumerated for a portion of it; see the 50 different sets of extensive hoisting works, and half as many mills for another portion; hut go helow ground in the different working mines on this lode, and see the millions upon millions of feet of lumber and timhers used there. The visitor's next question will be "where else was this vast sea of timher ohtained?" for there is at the present writing a sufficient amount of timher underground on the Comstock lode, to huild 10 euch cities as that of Virginia Their lumber is now principally ohtained from the Truckee, and commands nearly double the price at present paid in your city; cord wood sells readily at $16 per cord. The timbers used in the mines are from 12 to 14 inches square, the timhering is fitted and placed in squares, both horizontal and verticle, 6 feet apart; aud each floor of 6 feet is covered with from 2¼ to 3 inch plank, for working purposes. When a cave occurs theee 14 inch timhers are crushed endwise as thongh they were made of tallow.

As an example of the amount of hlasting going on in these mines, I will give you the consumption of Giant Powder for the past three yesrs. The amonnt eold by one agent in Virginia City, General Van Boklin, was in 1869 and 1870, 15,200 lhs.; in 1871, 20,300 lhs., and up to this time in 1872, 48,800 lbs., and other agents are now selling ahout 20,000 lbs. per year also. It will he seen hy this that there is a vast and steady increase, not only in the use of this material, hut in blasting in mining operations on this lode. L. P. Mo.

Alto Relief Topography.—Chas. W. Hendel, St. Louis, Sierra County, exhibited at the State Fair, at Sacramento, a beautiful specimen of relief topography of portions of Plumas and Sierra counties, showing the corresponding hight of the ranges of mountains, the depth of cañons and ravines on each side of Slate creek. Also Bald Mountain, Tahle rock and the ranges connecting with Pilot Peak; the worked ground at La Porte, Gibsonville, Newark, Potosi, Howland Flat, Pine Grove, Chandlerville, St. Louis, Gardners' Point, Port Wine, Scales Diggings and other intervening and adjacent places, showing also the Blue Lead channel wherever developed; the different formation of rock, the heds of tailings in the creek, and the denuded hed rock being denoted hy different colors. We wish Mr. Hendel would send us a photograph for making an engraving of this fine piece of work.

The Beet Sugaries.—One at Alvarado the other at Sacramento, are hoth turning out sugar in large quantities and of superior quality. The success of the enterprise is estahlished heyond question. The per cent. of profit upon the investment must depend much upon the original coet of land, huildings and machinery. At Alvarado we learn the cost of land wae very nearly $200 per acre; at Sacramento $30 per acre.

A Wonderful Instrument.—At the recent State Fair, the exhihit of the Dictator and Little Giant Hydraulic Joint Apparatus, attracted the attention of old and young; we instance, that of a little fellow who very naturally asked his father—fathers are supposed to know every thing—the use of it. Taking a square look at the instrument, he replied: "It's a hot-water gun used for the protection of the decks of ships of war, hy turning a etream of hoiling hot water in any direction upon any unwelcome hoarders."

On File.—"Prospecting and Mining" hy T. S. Tunneling in Eureka Dietriot.

Domestic Economy.

To Cook Mushrooms.

As thers are, no douht, many who wonld hs plessed to learn of the msny wsys for cooking this fungus, we copy ths following from sn English paper :

Ths pssssnts of a great portiou of Europe eat mushrooms raw, witb salt and dry bresd, and wholssome and good they are. The true flsvor of mnshrooms, nevertheless, is grsatly hightened by cooking; and cook them how you may—a broil, a stew, or a fry, with the simple addition of butter, sslt and peppsr, and they ars excellent. There is one rule thst should alwsys be observsd in whatever mode tbey are cooked, and that is that they shonld hs servsd up quickly and hot. The following modes of cooking mnshrooms may prove ussful at this seasou of the ysar:

Mushrooms au Gratin.—Take twelve lsrge mushrooms, ahont two inches in diametsr, psre the stalks, wash and drain the mushrooms ou a cloth; cnt off and chop the stalks. Put in a quart stew-pan an ounce of hutter and half an ounce of flonr; stir over the firs for two minentes; then add one pint of broth; stir till rednced to half tbe quantity. Drain the chopped stalks of the mnshrooms thoroughly in a cloth; put tbem in the sauce with three tablespoonfuls of choppod and washed parsley, one tablespoon of chopped and washed shalot, two pinches of salt, a small pinch of pepper; reduce on a hrisk fire for eight minutes, put two tablespoonfuls of oil in a *saute* pan; set tbe mnshrooms in the hollow part outwards; fill them with the fine herbs, and sprinkle over them lightly a tablespoouful of raspings; put in a brisk oven for ten minutes, and serve.

Curbien Mushrooms.—Peel and remove the stems from a dish of full-grown mnsbrooms, sprinkle with salt, and add a very little hutter; stew them gently in a little good gravy or stock. Add four tablespoonfuls of cream, and one teaspoonful of curry powder, previously well mixed with two teaspoonfuls of wheat flour; mix csrefully, and serve on a hot dish, with hot toast and hot plates attendant. Mind the "curry stuff is good," says an Indian friend, and not too much of it. The word "curry," by itself, it seems, being merely the Tamul word for "meat." The large, horse-mushroom, when half or three parts grown, and curried in this fashion, will he found to he delicious.

To Pot Mushrooms.—The small, open mushrooms suit best for potting. Trim and rnb them; put into a stew-pan a quart of mushrooms, three ounces of bntter, two teaspoonfuls of salt, and half a teaspoonful of Cayenne and mace, mixed, and stew for ten or fifteen minutes, or till the mushrooms are tender; take them carefully out and drain them perfectly on a sloping dish, and when cold press them into small pots, and pour clarified butter over them, in which state they will keep for a week or two. If required to be longer preserved, put writing paper over tbe hutter, and over that put melted snet, which will effectually preserve tbem for many weeks, if kept in a dry, cool place.

To Pickle Mushrooms.—Select a nnmber of small, sound, pasture-mnshrooms, as nearly as possible alike in size; throw them for a few minutes into cold water; then drain them; cut off the stalks, and gently rub off the outer skin with a moist flannel dipped in salt; then boil the vinegar, adding to each quart two ounces of salt, half a nutmeg sliced, a drachm of mace, and an ounce of white pepper-corns; put the mnshrooms into the vinegar for ten minutes over the fire; then pour the whole into small jars, taking care that the spices are equally divided; let them stand a day, theu cover them.

Another Method.—In pickling mushrooms, take tbe huttons ouly, and while they are quite close cut the stem off even with the gills, and rnb them quite clean. Lay them in salt and water for forty-eight hours, and then add pepper and vinegar, in which black pepper and a little mace have been hoiled. The vinegar must be applied cold. So pickled they will keep for years.

Mushroom Stems, if yonng and fresh, make a capital dish when the supply of mushrooms is limited. Rub them quite clean, and after washing them in salt and water, slice them to the tbickness of a shilling, then place them in a saucepan with sufficient milk to stew them teuder; throw in a piece of butter and some flour for tbickening, and salt and pepper to taste. Serve upon a toast of bread, in a hot dish, and add sippets of toasted hread. This makes a light and very delicate supper dish, and is not bad sauce to a boiled fowl.

Breakfast Mushrooms.—Clean a dozen or so of medium-sized, place two or three ounces of nice clean beef-dripping in the frying-pan, and with it a tablespoouful or more of nice beef gravy. Set the pan on a gentle fire, aud as the dripping melts place in the mushrooms, adding salt and pepper to taste. In a few minutes they will be cooked, and heing soaked in the gravy and served npon a hot plate, will form a capital dish. In the absence of gravy, a *soupcon* of "extractum carnis" may be substituted.

Mushroom Soup.—Take a good quantity of musbrooms, cut off tbe earthy end, and piok and wash them. Stew them with soms hutter, pepper, and sslt in a little good stock till tsndsr; tske them out, and chop them up quits smsll; prepare a good stock as for any other soup, and add it to tbe musbrooms and the liquor they have heen stswed in. Boil sll togsther, and servs. If whits soup hs desired, use the whits hutton musbrooms and a good veal stock, adding a spoonful of cream or a little milk, as ths color may require.

Mushrooms and Toast. — Peel the mushrooms and take out the stsms. Fry thsm over a quick fire. When tbe butter is melted take off the psn. Squsezs the juice of a lemon into it. Let ths mushrooms fry again for soms minutes. Add salt, pepper, spices snd a spoonful of water, in which a clovs or garlic, baving bssn cut into pisces, has soaked for hslf an hour; let it stsw. Wben ths mushrooms are dons, make a thickening of yolks of eggs. Pour tbe mushrooms on bread fried in butter, and laid in a dish ready for them.

Baked Mushrooms.—Pesl tbe tops of twenty mnsbrooms; cut off a portion of tbs stslks, and wips tbem carsfully with a piece of flannsl dipped in sslt. Lay the mushrooms in a tin disb, put a small pisce of hutter on the top of sach, and season tbem witb pepper and salt. Sst the dish in the ovsn, and bake from twenty minutes to half an hour. When done, arrange them high in the ceuter of a very hot dish, pour the sauce round them and servę quickly, and as hot as you possiòly can.

Mushrooms a la Creme.—Trim and rub half a pint of button mnshrooms, dissolve two onnces of butter rolled in flower in a stew-pan, then put in the mnshrooms a bunch of parsley, a teaspoonful of salt, half a teaspoonful each of wbite pepper and of powdered sugar, shake the pan round for ten minutes, then beat up the yolks of two eggs, with two tablespoonfuls of cream, and add hy degrees to the mushrooms; in two or three minutes you can serve them in the sauce.

Mushrooms on Toast.—Put a pint of mushrooms into a stew-pan, with two ounces of hutter rolled in flour; add a teaspoonful of salt, half a teaspoonfnl of white pepper, a hlade of mace powdered and half a teaspoonful of grated lemon; stew till the hutter is all ahsorbed, then add as much white *roux* as will moisten the mnshrooms; fry a slice of hread in hutter, to fit the dish, aud as soon as the mushrooms are tender serve them on the toast.

To Stew Mushrooms.—Trim and rub clean a half pint of large button mushrooms; put into a stew-pan two ounces of butter, sbake over the fire until thoronghly melted; put in the mushrooms, a teaspoonful of salt, half as much pepper, and a small piece of mace pounded; stew till the mnshrooms are tender, then serve them on a hot dish. They are usually sent in as a hreakfast dish, thus prepared in hutter.

Mushrooms a la Provenoale.—Take mushrooms of good size. Remove the stems aud soak them in olive oil. Cut up the stems with a clove of garlic and some parsley. Add meat of sausages, and two yolks of eggs to unite them. Dish the mushrooms, and garnish them with the forcemeat. Sprinkle them with fine oil, and dress them in an oven, or in a *four de campagne*.

Mushrooms En Raoout.—Put into a stew-pan a little stock, a small quantity of vinegar, parsley and green onions chopped up, salt and spices. When this is about to boil, the mushrooms being cleaned, put them in. When done, remove them from the fire, and thicken with yolks of eggs.

Mushrooms with Bacon.—Take some full-grown mnshrooms, and, having cleaned them, procnre a few rashers of nice streaky bacon, and fry it in the usual manner. When nearly done, add a dozen or so of mushrooms, and fry them slowly until they are cooked. In this process they will ahsorh all the fat of the bacon. and with the addition of a little salt and pepper, will form a most appetizing breakfast relish.

Mushrooms En Caisse. — Peel the mushrooms lightly, and cut them into pieces. Put them into cases of huttered paper, with a bit of butter, parsley, green onions and shalots chopped up, salt and pepper. Dress them on the gridiron over a gentle fire, and serve in the cases.

Columbus Mill and Mining Company.—The Reese River *Reveille* of Septemher 4th says: "The Columhus Mill and Mining Company are pnsbing operations ahead in Columbus District. J. Miller, the Superintendent, is in town, and will leave for Columbus in a day or two. A ten-stamp mill and a White furnace are heing erected, which are expected to he in operation in abont six weeks. A rock-crusher will he attached to the mill, and it ie estimated that twenty tons of ore per day can be reduced hy the works. The Company own ten or twelve mines in the District, four of which have heen thoroughly opened, and show large bodies of fair grade ore, tbe ledges varying from tbree to ten feet in thickness. There are at present ahout 300 tons of ore on the dumps, with plenty more in sight. Twenty men are at present engaged in extracting ore, and the force is to bs douhled in the course of a couple of weeks. From information which we deem reliable we are convinced that this is one of tbe finest properties in Eastern Nevada, and we expect to be enabled in the course of a few months to chronicle handsome returns from that section."

What is Said About Coffee.

Ths coffee tree csms originslly from sfrica whers from time immemorial it has beeu cultivsted on tbs declivities of Ahyssinia thst slope towsrd the Red Sea. Ahont ths fifteenth century, somsthing like four hundred years ago, the coffes tree crossed tbis sea and penetrated into Arahia, where it hss sincs been cultivated, and whsncs especially ws gst the famous coffee of Mocba. Ths use of coffee spread very early and with great rapidity in the East. It penetrated Europs much more slowly, snd it wss first taken into France at Msrseilles.

Coffee was first drunk in Paris in 1667. The seeds which furnished it wsrs brought in small quantity by a Frsnch traveler named Tbsvenot. Two ysars afterwsrd, in 1669, Soloman Aga, Ambassador of the Suhlime Ports in tbe time of Louis XIV., induced tbe courtessns of tbat great king to taste it, and thsy found it vsry agreeahls. Howsver, its nse did not spread for a long tims. It was not untill the eighteenth century that it begsn to bs generally ussd. In fact it is scarcely a century and a half since it hecame an articls of general cousumption hy the people of Europe.

During many years Europe remained tributary to Arahia for this commodity. All ths coffee consumed in Europe came from Arabia, and particularly from Mocba. Toward the commencement of the eighteenth century the Dutch attempted to import it into Batavia, one of their colonies in the Indian Archipelago. They succeeded very well. From Batavia some stalks were taken to Holland and put in a hothouse, where they succeeded equally well. One of these stalks were brought to France toward 1710, and was placed in the conservatory of the Jardin des Plantes, and there also it prospered and gave growth to a number of sprouts.

In 1720 or 1725, (we have not heen ahle to find the precise date) an officer of the Freuch Navy, Captsin Dsselieux, thought that, since Holland had cultivated coffee at Batavia, he might also acclimate it in our colonies of the Gulf of Mexico. When emharking for Martinique, he took from the Jardin des Plantes three stalks of coffee, and carried them with him. The voyage was long and difficult, hy reason of contrary winds. The supply of water proving insufficient, it was necessary to put the crew on ratious, Captain Deselieux, like the others had but a small qusntity of water to drink each day. He divided it with his coffee plants.

Notwithstanding all his care, two died ou the passage; only one arrived safe and sound at Martiniqne. Put at once into the earth, it prospered so much and so well that from it have descended all tbe coffee trees now spread over the Antilles and tropical America. Twenty years after, our Western colonies exported millions of pounds of cóffee. You see the coffee tree starting from Africa, has reached the extremety of Asia on the east and America on the west. Hence it has nearly traveled round the world. Now in this long voyage, coffee has hecome modified.

Passing by the tree, of which we know so little, let us consider the seed. We need not he growers to know the different qualities of coffee and their different production. Nobody would confound Mocha with Bourbon, Rio Janeiro with Martinique. Each of these seeds carries in its form, in its proportion, in its aroma, the certificate, so to say, of its birth. Whence came these changes? We cannot know the certainty, and explain the why and the how, and follow vigorously the filiation of canse and effect; hut, considering the phenomena as a whole, it becomes evident that it is to difference of temperature, of climate, of culture, that all these modifications are due.

This example taken from vegetahles, shows that if we transport to considerable distances different specimens of the same vegetahle, placing them in different conditions of cultivation, we obtain different varieties. And tea, transported some years ago into tropical America would present us with like facts.—*Popular Science Monthly.*

The Crosby & Judd Works.—We have just returned from an inspection of this Amalgamation Mill. It is now completed, and seems to be perfect in all its appointments. Its machinery was put in motion to-day, and on Friday or Saturday will produce its first hrick.

This grand fabric has been put np in about six months, at a cost of ahout $50,000. It is calculated to roast, pulverize, chlorodize and amalgamate about 15 tons of ore per day when in perfect running order. The starting of this mill is another of the hopeful signs of Georgetown. We think this mill can run $400,000 worth of bullion a year, wbilst Stewart's, whose capacity is about one-third larger; can run $600,000. This will make a round million a year from two of our works. We cannot but wish the most abundant success to the enterprising founders of all our mills. We expect hereafter to report the weekly product of the Crosby, as we uow do the Stewart works.—*Colorado Miner.*

Progress in Utah.

It is astonishing with whst rapidity the country wsst of tbe Wabsatch range is heing developsd and brought into uss to sustain a wonderfully incressing popnlstion. Wben it is remembsred thst scarcely less than a quarter of a century ago tbe whole western conntry from the Missouri rivsr to the Pacific Cosst was almost one vast dessrt, and now inhshited by hundreds of thousands of energetic people, who bave built up cities, towns, villages, railrosds, and who hsvs developed the agricultursl and mineral resources of the country, it ssems almost a msrvel, so much so that hsd any ons predicted twsnty-fivs yesrs ago wbat is actnally in existence to-day, that individual would he pronounced insane. Yet the facts of progress are before us, and in no one circnmstance do we notice tbe svidence of rapid progress more tban in ths building of railroads. Formerly it was ths idea to settle countries first and thsn build railroads. Now this ordei of tbings is rsvsrsed, and capitalists build rsilroads in order tbst ths country may be settled and brought under tbe influence of civilizstion. We see this idea exsmplified in tbe building of ths Northern and Southern Pacific Rsilroads, and in the rspid sttling up of the country slong tbe lines.

Ths opening up of Utsh and Nsvsda within the past two years hy means of railroads, is something remarkahls, and the probabilities are tbat within ths next tsu years, thsss and adjoining Territories will bs interwoven with a series of broad and narrow-gauge roads as dense as in many of onr oldest States. Utah's north and Sonth lins, intersecting the great continental trunk linss, we helisve will bs fed by innumsrable narrow-gauge roads, from almost every direction. * * * If tbe picture drawn of the future seems overcolored, we point to the events of tbe past two years in justification of our faith in the future commercial prosperity of Utah, as a land redeemed from sage-brush and the dominion of antiquated ideas.—*Salt Lake Tribune.*

Railway Air-Cusheon.—Persons nnused to travel often suffer much fatigue in the lower limbs from a long journey by rail, which is attrihuted to the tremulous motion commnnicated from the floor of the car. Those who hsve exsrienced the difficulty there as in walking over a bridge or a loose plank road while a vebicle is passing, by the painful effort required to keep the legs in trim, will appreciate the case. As a preventive it is recommended to rest the feet on an air-cusheon, and foot-stools of a proper construction have heen made for this purpose. All invalids and persons unused to hsrdships would do well to supply themselves with this simple convenience before starting upon a long railroad journey.

Printing from Photooraphs.—A method of printing from photographs adopted in Prussia consists in the employment of a sensitive film of gelatine containing bicbromate of potash. This film is spread upon thick glass, and after exposed in the camera in the usual way, the photographic image is fixed by liquid ammonia. The picture is invisihle until the inking roller has passed over the glass plate, which may be printed from much the same way as a litbographic stone. About 5,000 impressions have been taken from a glass plste prepared in this way, the plate being in all cases strong enongh to be capable of heing passed through the press without injury. The procese has heen adopted at Krupp's works in Essen.—*Am. Manufacturer.*

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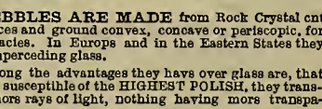

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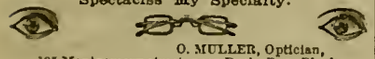
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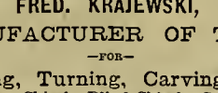
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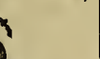
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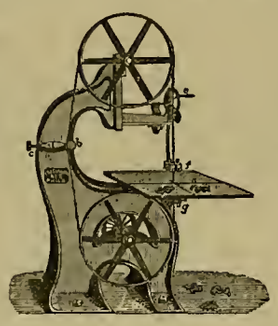
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Same system as the "Remington" Celebrated Military Rifle, of which over half a million have been sold. Its simplicity unsurpassed. For strength and durability unequalled. In accuracy unrivalled. In range, penetration, and ease of manipulation, without comparison.
The "Sportsman's" Delight, the "Hunter's" Favorite, the "Target-Shooter's" Pride. Also
REVOLVERS FOR HOUSE USE.
In these days of thieves and Burglaries, every householder should have a revolver for home protection.
REMINGTON'S RIFLE CANE.
Every gentleman should have one for protection against dogs and rowdies, and for field use.
E. REMINGTON & SONS,
19v24-6m 193 Broadway, N. Y.

Improved Band Saws,
WOODWORTH PLANERS,
Molding Machines, Mortisers, and every description of Wood-working Machinery and Planing Mill Supplies. Address
TREADWELL & CO.,
Machinery Depot,
9v25eow San Francisco.

Blowers, Steam Pumps, Hair Felt. Mining Tools
PORTABLE ENGINES, TURBINE WATER WHEELS, Wood and Iron Labor-Saving Machinery, Hardware, Belting, Lacing, Packing, and a general stock of Engineers', Miners', Farmers' and Mechanics' Tools and Mill Supplies.
TREADWELL & CO.,
At the Old Stand, } Cor. Market and Fremont Sts., SAN FRANCISCO.
eow 12v24

J. M. STOCKMAN,
Manufacturer of
PATTERNS AND MODELS,
(Over W. T. Garratt's Brass Foundry).
N. W. corner Natoma and Fremont streets, S. F. Entrance on Natoma street. 6v23-3m

PACIFIC STONE COMPANY.
Ransome's Patents,
For which Commissioners for the International Exhibition of 1862 awarded the Prize Medal, and Gold Medal at the Mechanics' Institute Fair, 1871, of San Francisco.
The Pacific Stone Company call the especial attention of Architects, Engineers and the public in general, to the SUPERIOR QUALITY of the Stone now being manufactured by them in this city under the Ransome Patents. They make to order and keep in stock:
Building Fronts, Water Pips
Sinks, Monuments, Fountains,
Tiles, Copings for Walls,
Filters, etc., etc.,
Together with Ransome's Celebrated Free-Grit Grindstones, all of which we guarantee superior, and at a price far below that of hand-cut work.
The attention of private parties intending to build is respectfully solicited.
OFFICE, No. 10 BUSH STREET, San Francisco.

LEA & PERRINS'
CELEBRATED
Worcestershire Sauce.

Declared by Connoisseurs to be the only good SAUCE
Caution Against Fraud.
The success of this most delicious and unrivalled Condiment having caused certain dealers to apply the name of "Worcestershire Sauce" to their own inferior compounds, the public is hereby informed that the only way to secure the genuine is to ASK FOR LEA & PERRINS' SAUCE, and see that their names are upon the wrapper, labels, stopper and bottle.
Some of the foreign markets having been supplied with a spurious Worcestershire sauce, upon the wrapper and labels of which the names of Lea and Perrins have been forged, L. and P. give notice that they have furnished their correspondents with power of attorney to take instant proceedings against manufacturers and vendors of such, or any other imitations by which their right may be infringed.
Ask for LEA & PERRINS' Sauce, and see name on wrapper, label, bottle and stopper
Wholesale and for export by the Proprietors, Worcester; Crosse & Blackwell, London, &c., &c., and by Grocers and Oilmen universally. 15v24-tf

H & L AXLE GREASE.

The attention of Teamsters, Contractors and others, is called to the very superior AXLE GREASE manufactured by
HUCKS & LAMBERT.
The experience of OVER TWENTY YEARS, specially devoted to the preparation of this article, has enabled the proprietors to effect a combination of lubricants calculated to reduce the friction on axles, and thus
Relieve the Draft of the Team,
Far beyond the reach of any who have but recently gone into the business; and as the H & L AXLE GREASE can be obtained by consumers at as
LOW A RATE
As any of the inferior compounds now being forced upon the market by unprincipled imitators, who deceive and defraud the consumer.
HUCKS & LAMBERT
invite all who desire a First-class and Entirely Reliable Article, and which for Over 18 Years in this country has given such GENERAL SATISFACTION, to ask for the H & L AXLE GREASE. See that the trade mark H & L is on the red cover of the package, and take no other.
3v24-eowr

JUST PUBLISHED.
Froiseth's New Sectional, Topographical and Mineral
MAP OF UTAH.
SIZE, 40 BY 56 INCHES; SCALE, 8 MILES TO AN INCH.
Handsomely engraved on stone, colored in counties, and mounted on cloth, showing the Counties, Towns, Rivers, Lakes, Railroads, Mines and Mining Districts throughout the Territory, and all GOVERNMENT SURVEYS made to date. Price, mounted, $8; Pocket form, $5. Mailed to any part of the United States, on receipt of price, by A. L. BANCROFT & CO., 721 Market street, San Francisco, Cal., or by B. A. M. FROISETH, Publisher, Salt Lake City, Utah. 10v25-tf

THE Gardner Steam Governor
Is acknowledged by engineers to be, as an engine regulator, without an equal. We have all sizes of these Governors on hand, with also a full stock of Engineers' and Mining Supplies. TREADWELL & CO., San Francisco. ☞ Send for Price List. 9v25eow

SAN FRANCISCO AND COLORADO RIVER RAILWAY.
Office of the San Francisco and Colorado River Railway Company,
NO. 305 SANSOME STREET,
SAN FRANCISCO,.....SEPT. 24, 1872.
TO THE PUBLIC.
THE BOARD OF SUPERVISORS OF THE CITY and County of San Francisco, having passed an Ordinance submitting to the Electors the question of granting a subsidy to our Company, for the Construction of a Railroad to the Colorado River, to connect with the railroads being built from the East, we are now in a better position to ask the citizens of San Francisco to join us and urge the importance of the undertaking; and beg to say:
First—We propose in good faith to build a first-class railroad, with all the dispatch possible, and certainly within the time provided in the ordinance.
Second—We pledge ourselves as men to the fact that we are entirely disconnected and free from all association with the Central or Southern Pacific Railroad Companies or their Managers or Directors, and are in genuine competition with them, and we have no association or connection with any other Railroad Company or combination in existence, and expect to have none, except business or running arrangements with lines from the East and South, which hereafter may desire to exchange business with us.
Third—We invite every citizen of the City and County of San Francisco to subscribe to our stock. Our Books are open to all. Our Company is not a close corporation, and in no sense a monopoly. We particularly invite every Taxpayer to subscribe, at least as much as he will be called upon to contribute to the subsidy, and thus, in a manner, free of legal difficulties, participate in the advantages growing out of the enterprise.
Fourth—A Committee of the Board will be in attendance at the office of the Company, No 305 Sansome street, to receive subscriptions, and duly authorized parties will wait upon the citizens generally, giving them an opportunity to subscribe.
Fifth—This being an independent and competing road, there can be no reason for those who desire the success of such an enterprise to decline their co-operation, which we cordially invite.

J. MORA MOSS,	JOHN PARROTT,
PETER DONAHUE,	H. M. NEWHALL,
W. C. RALSTON,	WM. T. COLEMAN,
GEO. H. HOWARD,	R. B. WOODWARD,
JOHN O. EARL,	JOSIAH BELDEN,
MICHAEL REESE,	ALBERT GANSL,
H. D. BACON.	

13v25-1m

Agents Wanted for Zell's Encyclopedia.
Z.E. is a Dictionary of Language. It contains every word in the English language with its derivation and definition.
Z.E. is a Biographical Dictionary. It has a sketch of every noted person of all ages, many of them with portraits.
Z.E. is a Complete Gazetteer. It has a description of every county, sea, lake, river, mountain, town, etc., in the world.
Z.E. is a Medical Dictionary. It contains a description of diseases, remedies instruments, surgical operations, etc., etc.
Z.E. is a History of the World. It contains a description of the migration of races, the progress of nations, their customs, laws, religions, etc.
Z.E. is a complete Natural History. It describes all animals, birds, insects, fishes, and reptiles.
Z.E. is a complete work on Botany. It describes every plant, flower, vegetable, and tree, with their properties, uses, etc.
Z.E. is a complete work on Mechanics. It describes all new inventions, engines, machinery, tools, etc.
Z.E. is a complete Church History. It describes impartially the various divisions of the church of all ages.
Z.E. is equal to a whole library of works. It describes every material or non-material thing that is capable of description in the language.
Z.E. is well illustrated. It contains nearly three thousand engravings of persons, animals, plants, trees, flowers, machines, buildings, etc.
A specimen number, containing forty pages, will sent to any address on the receipt of ten cents. Sold only by subscription. Apply to
FRANCIS DEWING & CO.,
542 California street, San Francisco.
7v4-4m General Agents for Pacific Coast.

All sizes, Horizontal or Vertical, Hoisting Engines
5½x12 } COOK, HYMES & CO.'S, WITH VERTICAL
6x12 } Boilers and heavy Iron Beds, with or without Trucks. For sale at Eastern prices,
7x12 } by TREADWELL & CO., Sole Agents, San
8x12 } Francisco. 4v25 tf

C. J. COLLINS,
HATTER,
No. 321 Montgomery street, near California street, under I. O. O. F. Hall.
Masonic, Army and Navy Goods a Specialty
22v24-3m

ALL KINDS OF
Office Desks and Book Cases
On hand and Manufactured to Order, by
JOHNSON & BEST,
No. 311 Pine street, opposite the Pacific Bank,
18v24-6m SAN FRANCISCO.

SELL YOUR PATENTS
Through WIEDER & CO., 17 New Montgomery street, SAN FRANCISCO, CAL.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[From Official Reports to DEWEY & CO., U. S. and Foreign Patent Agents, and Publishers of the Mining and Scientific Press.]

For Week Ending September 17th, 1872.*

Subaqueous Tunnel.—Henry Anderson, S. F., Cal.

Grape Crusher and Stemmer.—Oliver Hyde, Oakland, Cal.

Machine to Cut Corrle-Stones.—Jacob Bolliger, S. F., Cal., assignor of three-fourths of his right to Louis Dutertre and E. D. Sawyer, same place.

Seed-Planter.—Oliver Hyde, Oakland, Cal.

Rotary Sod-Cutter.—William B. Hyde, Oakland, Cal.

Gimlet-Ventiduct.—Job. F. Peacock, Reno, Nevada.

Chute-Gate.—James M. Thompson, Quincy, Cal.

FOREIGN PATENTS—ENGLAND.

Augustus A. Schlesinger, of San Francisco, Cal., A new or improved apparatus for Beating Carpets and other fabrics, dated July 6th, 1872.

C. W. M. Smith, of San Francisco, Cal., Pavement, dated July 9th, 1872.

Oliver Hyde, Oakland, Cal., Improvements in Road Traction Wagons, etc., dated July 15th, 1872.

Samuel B. Martin, and James M. Beath, of San Francisco, Cal., Refrigerating apparatus, dated July 24th, 1872. (Provisional Protection).

Henry Stephen Flood, of San Francisco, Cal., Improved Corset, dated July 3d, 1872.

John Charles DeVoy, of San Francisco, Cal., An Improved Ink Erasing Compound, dated August 6th, 1872.

George Swift, of San Francisco, Cal., Improvements in the manufacture of pnlp, from vegetable fibres, for making paper and other materials, dated April 8th, 1872. (Provisional Protection).

*The patents are not ready for delivery by the Patent Office until some days afterward.

Note.—Copies of U. S. and Foreign Patents furnished by Dewey & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

The California State Fair.

Exhibition of Manufactures, Inventions, Etc.

[Continued.]

Late Rose Potatoes.—Chas. H. Dwinelle exhibited the first Late Rose potatoes raised in Cal. to our knowledge. They were very fair and give promise of being an acquisition to our number of good varieties. Also samples of the Peerless potato; which variety is said to be well adapted to adobe soils in localities where other potatoes will not grow well. The seed were obtained from the East through the Pacific Rural Press. A small quantity of the Late Rose are for sale at $4 per ponnd, by C. H. D. of Oakland, to parties desiring them.

The Wax Work of Madam Anna Gettz Lucas, of No 719 Howard St., S. F., we think will challenge world wide competition. We found her bnsy giving practical lessons in the manufacture of wax flowers. Her exhibit comprised a large variety of articles; we cannot do justice by description of any of her fancy fruit and flower pieces. No admirer of her beantiful as well as useful art will be disappointed by a personal interview and an examination of her work. A perfect *fac simile* of a 7-pound pear raised in this State, is one of her fine pieces which we hope soon to illustrate in an engraving.

Flowers and Plants.—Mr. O'Brien, of Sacramento, gave the largest display of flowering plants and ornamental trees and shrubs. The oleander is prominent in the gardens in Sacramento. Mr. O'B. showed a fine assortment of thrifty trees of the different varieties of this tree.

Challenge Mill.—M. S. Bowdish, of Hawley & Co.'s hardware store, S. F., exhibited this superior mill for grinding barley, corn, oats, etc., however green, wet or dry, with ease and speed, without heating the feed or doing it other damage. It ie essentially a mill for domestic use and economy. Quite a number have already been sold on this coast.

Car Coupling.—We examined with interest Jas. Pearson's car-coupler, an invention calculated to save labor and life in coupling and uncoupling cars.

Patent Punch.—This punch was patented through the agency of Dewey & Co., by D. A. Falkner, S. F. It is especially desirable for plow and carriage manufacture. As a California invention it is of value enongh to support its manufacture here, and we recommend its early introduction East.

Automatic Car Coupling.—J. A. Leaman exhibited his improved automatic car conpling, which we shall probably illustrate in a future number.

New Incorporations.

Caroline M. Co.—October 10. Location: Ely district, Lincoln Conuty Nevada. Capital stock, $3,000,000. Trustees—Jamee B. Haggin, Jesse Wall, Robert Sherwood, George W. Beaver and Charles E. Elliott.

Gray and Bishop M. Co.—October 10. Location: Ely district, Lincoln county. Capital stock, $3,000,000. Trnstees—Charles Richards, H. H. Flagg and S. Bishop.

Anthony Gold M. Co.—October 10. Location: Newcaetle district, Placer County. Capital stock, $1,000,000. Trustees—J. E. de la Montagnie, S. D. R. Stewart, O. Dickinson, Jr., S. W. Lee and W. C. Chapman.

Aspinwall Con. G. and Silver M. Co.—Oct. 16. Location: Coleman District, Lyon Co., Nev. Capital stock, $4,500,000 in 90,000 shares. Trustees — Wm. B. Cobb, N. K. Lawson and Robert Harrieon.

Mobile S. M. Co.—Oct. 16. Location: Ely District, Lincoln Co., Nevada. Capital Stock, $3,600,000 in 3,600 shares. Trustees—G. A. Treadwell, J. E. Kincaid and J. J. Moynihan.

San Francisco Quicksilver M. Co. — Oct. 16. Location: San Luis Obispo Co., California. Capital, $3,000,000, in 30,000 shares. Trustees—Wm. H. Knight, Albert Williams, W. D. Delaney, John A. Robertson and Charles A. Denison.

Mountain Pear M. Co.—Oct. 16. Location: Gold Hill District, Storey Co., Nevada. Capital, $150,000 in 30,000 shares. Trnstees—H. Bruckmaer, H. H. Flagg, L. B. Franklin, J. Gutte and Wm. H. Bremer.

Increase of Capital Stock.—The California Powder Works have filed with the County Clerk a certificate of increase of capital stock, from $450,000, divided into 4,200 shares, to $1,000,000, divided into 10,000 shares. The certificate etates that the 45,000 capital is fully paid in, and the debts and liabilities of the Works are $11,361.73.

Meetings and Elections.

Gravel M. Co.—The first annual meeting of the stockholders of this Company, Schell Creek, was held on the 3d inst. The following Trustees were elected for the ensuing year: M. L. McDonald, James Gamble, Albert S. Evans, W. H. Gamble, and S. Urquart. James Gamble was elected President, W. H. Knight, Secretary, and Caleb Whitlng Superintendent.

Julia G. & S. M. Co.—Oct. 14. Trustees—M. D. Townsend, Geo. W. Fieher, Wm. H. Sears, E. G. Lyone, and E. Heetres. The officers elected are Geo. W. Fieher, President; E. Heatres, Vice-President; M. D. Townsend, Treasurer; A. Noel, Secretary; Frank M. Thayer, Superintendent.

Eureka (Grass Valley,) M. Co.—Oct. 17. Trustees—George W. Beaver (President); R. F. Morrow, William Watt, L. S. Adams, S. B. Sherwood; Superintendent, William Watt; Treasurer, Francis Berton; Secretary, R. Wegener. The receipts for the year were $233,409; dishursements, $202,622; cash balance on hand September 30, 1872, $56,655. Only one dividend of $20,000 was paid in the year.

San Francisco Metal Market.

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

Thuadsay, Oct. 17, 1872.

Iron.—			
Scotch Pig Iron, ₱ ton	$60 00	@	65 00
White Pig, ₱ ton	50 00	@	55 00
Refined Bar, bad assortment, ₱ lb	— 04½	@	— 5
Refined Bar, good assortment, ₱ lb	— 05	@	— 5½
Boiler, No. 1 to 4	— 05½	@	— 06
Plate, No. 5 to 9	— 06½	@	— 07
Sheet, No. 10 to 13	— 07½	@	— —
Shaet, No. 14 to 20	— 07½	@	— —
Shaet, No. 24 to 27	— 08	@	— —
Horse Shoes	8 00	@	
Nail Rod	10		
Norway Iron	8		
Rolled Iron	5		
Other Irons for Blacksmiths, Miners, etc.	5½	@	6½
Copper.—			
Sheathing, ₱ lb	— 40	@	— 45
Sheathing, Yellow	— 28	@	— 30
Sheathing, Old Yellow	— 12	@	— 12½
Composition Nails	— 28		— 30
Composition Bolts	— 28		— 30
Tin Plates.—			
Plates, Charcoal, IX ₱ box	17 50	@	— —
Plates, I C Charcoal	15 50		— —
Roofing Plates	15 50		16 —
Banca Tin, Slabs, ₱ lb	— 50		— 55
Steel.—English Cast, ₱ lb	— 19		— 20
Drill	19		20
Flat Bar	19		20
Plough Points	$ 75		4 00
Rnesia (for monld hoards)	12½		15
Quicksilver.—₱ lb	— 85		— 87½
Lead.—Pig, ₱ lb	— 05¾		— 06
Sheet	— 10		— —
Pipe	— 9		— 10
Bar	— 06¾		— 7
Zinc.—Sheets, ₱ lb	— 11		— 11½
Borax.—Refined	— 27		— 30
Borax, crude	— 5		— —

Leather Market Report.

[Corrected weekly by Dolliver & Bro., No. 109 Poet st.]

San Francisco, Thursday, Oct. 17, 1872.

Wa quote as below:

City Tnnned Leather, ₱ lb	26@29
Santa Cruz Leather, ₱ lb	26@29
Country Leather, ₱ lb	25@28
Stookton Leather, ₱ lb	26@29

French skins continue firm. All California skins are scarce and bring full prices.

Jodot, 8 Kil., per doz	$60	00	@
Jodot, 11 to 19 Kil., par doz	66	00	@ 85 00
Jodot, second choice, 11 to 15 Kil. ₱ doz	56	00	@ 75 00
Lemoins, 16 to 18 Kil., ₱ doz	75	00	@ 77 50
Levin, 12 and 13 Kil., per doz	68	00	@ 70 00
Cornellian, 16 to 19 Kil., per doz	63	00	@ 65 00
Cornellian, 12 to 14 Kil., per doz	56	00	@ 60 00
Cgeran Calf, ₱ doz	54	00	@
Simon, 18 Kil., ₱ doz	60	00	
Simon, 20 Kil., ₱ doz	65	00	
Simon, 24 Kil., ₱ doz	72	00	
Robert Calf, 7 and 8 Kil	35	00	@ 40 00
French Kips, ₱ lb	1	00	@ 1 30
California Kip, ₱ doz	60	00	to 80 00
French Sheep, all colors, ₱ doz	8	00	@ 15 00
Eastern Calf for Backs, ₱ lb	1	15	@ 1 25
Sheep Roans for Topping, all colors, ₱ doz	9	00	@ 13 00
Sheep Roans for Linings, ₱ doz	5	50	@ 10 50
California Russett Sheep Linings	1	75	@ 5 50
Beet Jodot Calf Boot Legs, ₱ pair	5	25	
Good Frenoh Calf Boot Legs, ₱ pair	4	50	@ 5 00
French Calf Boot Legs, ₱ pair	4	00	
Harness Leather, ₱ lb		30	@ 37½
Fair Bridle Leather, ₱ doz	48	00	@ 72 00
Skirting Leather, ₱ lb		34	@ 37½
Welt Leather, ₱ doz	30	00	@ 50 00
Buff Leather, ₱ foot		18	@ 21
Wax Side Leather, ₱ foot		20	@ 22

Bargion's Improved Hub and Axle.

A patent has recently been procnred throngh this agency by Peter Bargion, which fills a want long felt, and which will most probably be generally adopted. It ie an improvement in the manner of securing boxes in the hnbs of wheels, and is more especially applicable to the cast-iron wheels nsed in gang and other plows, and reaping and mowing machines and all other agricultural machinery. There is also a device for preventing sand from working into the box and cutting it out.

In the hub of a wheel, such as ie used in agricnltural implements, a hole is bored ont large enongh to make a square channel at one side of the bore entirely throngh the hub. At about the middle of the bore is a short channel at right angles to the other channel and communicating with it. The box has a projecting flange or rim at one end, and aleo a lug projecting from it at a proper distance from the flanged end, to be turned into the short channel in the manner of forming a bayonet lock after the box has been slipped into the bore of the hub, the lug passing in through the long channel. A flange is also recessed opposite the long channel, and a wooden or other key confines the box in place, and prevents it from shifting.

On the axle a flange is made at the proper distance from the end of the journal to fit against the inner end of the box. This flange is large enongh to fit in the recessed end of the box, and has its onter corner beveled off so as to exclude any sand or dirt which would otherwise get into the box. In order the better to protect the outer end of the box from dirt and sand a nut is employed, having a large beveled flange or head, which screws upon the outer end of the journal. By this means both ends are protected so that dirt and sand can not get in.

The object of this construction of the hnb and providing it with a box is to save the wheel when the box is worn out, as all that it will be necessary to do will be to get a new box and the wheel will be ready for use again. At present in nsing agricultural implements the wheels have to be bushed repeatedly with Babbitt metal, occasioning loss of time and great inconvenience. By using this device the necessity of this will be entirely obviated, for as soon as the box wears out a new one can be procured. The box as above described is merely a cylindrical sleeve with channel, and it may be made by any blacksmith, though they will most probably be easily procnred at trifling expense. This invention is also applicable to axles of wagons, etc., and with light hubs may be also used on buggies and carriages. Those desiring further particulars on the subject can address, Alex. Weed, 443 California St., S. F.

Our Agents.

Our Friends can do much in aid of our paper and the cause of practical knowledge and scienca, by assisting Agents in their labors of canvaseing, by lending their influence and encouraging favors. We intend to eend none bnt worthy men.

Wm. H. Rattenberry—California.
Frank S. Chapin—California.
Wm. F. Spencer—California.
M. S. Senter—California and Oregon.
C. H. Dwinelle—Special Corresponding Agent.
I. N. Hoag—Sacramento, General Agent.
F. M. Shaw—Southern California.
L. P. McCarty—California.
Samuel Cushman—Colorado Territory.
A. C. Knox, City Soliciting and Collecting Agent.

Office of the Chicago Terra Cotta Co.
Chicago, July 19th, 1872.

L. P. Donge, Esq., Sir—The Pulverizer you have furnished for the above Company is an A. No. 1 Grinder. Having used 4 feet horizontal etones, and verlical iron clad hurrs, for eeveral veare, in grinding materials for Terra Cotta, I am willing to say upon the trial we have given yonr machine that it is the best machine we have as yet met.

The great difficulty with Burrs is the wear, when snch material as Glass, Terra Cotta, Flint and Clay are ground, and the consequent stoppage and dressing of stones. But if as you affirm the Pulverizer will wear for six months without renewing of paddles, this trouble is gotten over, at a great saving of time and wages.

We have ground 1,600 lbs of glass in one honr and 150 hnshels of clay in five hours with it, without any trouble; other than it grinds too fine, being an impalpable powder; if it could be made to deliver in a more granular form, say 40 mesh, it would serve ue better; still this is a qneer fault for a grinder, that it does its work too perfectly.

Our Works are at the cor. of Catharine and Lafiin Sts., via Blue Island ave. cars, and you are at liberty at any time to refer to the machine, and we shall be glad to show its action on glaee or other stock material, and visitors will alwaye find enough to repay a visit.

Yours truly,
JAMES TAYLOR,
Sup't at Factory Chicago Terra Cotta Co.

H. B. MARTIN & Co.
MACHINISTS AND BUILDERS
— ALL KINDS OF —
Hydraulic Elevators,
Reversable Hoisting Engines,
Steam and Hydraulic Engines,
Power Pumps
and Pressure Rams, Etc.
No. 13 Fremont street.....SAN FRANCISCO.

C. P. R. R.
COMMENCING
Monday, October 7th, 1872.
And until further notice, Trains and Boats will
LEAVE SAN FRANCISCO.

7.00 A. M. (Daily). Atlantic Express Train (via Oakland) for Sacramento, Marysville, Redding, and Portland, C. Colfax, Reno, Ogden and Omaha.

7.15 A. M. (Daily). Cal. P. R. R. Steamer (from Broadway Wharf)—Connecting at Vallejo with Trains for Calistoga, Knight's Landing and Sacramento; making close connection at Napa with stagee for Sonoma.

2.00 P. M. (Sundays excepted). S. F. & N. P. R. R. Steamer (from Broadway Wharf), connecting nt Donahue with Traine for Cloverdale. Making close connection at Lakeville with atagee for Sonoma.

2.00 P. M. (Sundays excepted). Stockton Steamer (from Broadway Wharf), tonching at Vallajo, Benicia, and Landings on the San Joaquin river.

3.00 P. M. (Daily). San Jose Passenger Train (via Oakland), stopping at all way Stations.

4.00 P. M. (Sundays excepted). Passenger Train (via Oakland) for Lathrop, Merced, Visalia, Tipton, and Los Angeles, Stookton and Sacramento.

4.00 P. M. (Sundays excepted). Cal. P. R. R. Steamer (from Broadway Wharf) connecting at Vallajo with Traine for Calistoge, Knight's Landing and Sacramento.

4.00 P. M. (Sundays excepted). Sacramento Steamer (from Broadway Wharf), tonching at Benicia, and Landings on the Sacramento river.

6.30 P. M. (Deily). Overland Emigrant Train (via Oakland)—Through Freight and Accommodation.

OAKLAND BRANCH.—Leave San Francisco, 7 00 8 10, 9 20, 10 10 and 11 20 a. m., 12 10, 1 50, 3 00, 4 00, 5 15, 6 30, 8 15 9 20 and *11 30 p. m. (9 20, 11 20 and 3 00 to Oakland only).

Leave Brooklyn (for San Francisco), *5 30, 6 40, 7 50, 9 00 and 11 00 a. m., 1 30, 2 40, 4 55, 6 10, 7.55 and 10 10 p. m.

Leave Oakland, *5 40, 6 50, 8 00, 9 10, 10 00, nnd 11 10 a. m., 12 00, 1 40, 2 50, 3 50, 5 05, 6 20, 8.05 and 10 20 p. m.

ALAMEDA BRANCH.—Leave San Francisco, 7 20, 9 00, and 11 15 a. m., 1 30, 4 00, 5 30, and 7 00 p. m. (7 20, 11 15, and 5 30 to Fruit Vale only).

Leave Haywarde (for San Francisco), *3 45, 7 00 and 10 45 a. m., and 3 30 p. m.

Leave Fruit Vale, *4 40, 7 35, 9 00 and 11 20 a. m., 1 30, 4 05 and 5 30 p. m. *Except Sundays.

T. H. GOODMAN, Gen'l Pase'gr and Ticket Agt. A. N. TOWNE, Gen'l Supt.

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Fifty energetic men wanted immediately to complete Ditch between

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Good Wages, Board, and Pay on demand.

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Who have all sizes on hand. 3v25

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An interest in a Valnable Invention.

A NEW, FOLDING, CHILD'S CARRIAGE.

Call and examine at 523 Pine street.

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N. B.—The above invention has been protected Caveat. 9v25-2m

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Examiner of Mines, Consulting Engineer,
MINERAL ASSAYER AND METALLURGIST,
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Anthor of the "Explorers', Miners' and Metallurgists' Companion." (The very Comprehensive Work of 639 pages and 81 illustrations.

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The public are respectfnlly cautioned that BETTS'S Patent Capsules are being infringed

BETTS'S name is upon every Capsule he makes for the leading Merchants at home and abroad,

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Manufactories:—1, Wharf-road, City-road, London, and Bordeaux, France.

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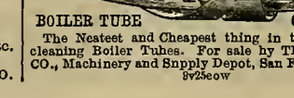
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The Neateet and Cheapest thing in tbe market for cleaning Boiler Tnbes. For sale by TREADWELL & CO., Machinery and Snpply Depot, San Francisco. 9v25eow

Mining and Other Companies.

Owing to the time necessary to mail the present large edition of the M. & S. Press we are obligal to go to press on Thursday evening—which is the very latest hour we can receive advertisements.

Altona Gravel Mining Company—Location

of works, Grass Valley, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 3d day of October, 1872, an assessment of ten cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary, at No. 29 Merchants' Exchange, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the 2d day of November, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 25th day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

DAVID WILDER, Secretary.

Office—29 Merchants' Exchange, San Francisco, Cal.
oct5-5t

Beckwilh Mining Company—Location of

works, Ely Mining District, Lincoln Conuty, Stato of Nevada.

NOTICE.—There are delinqnent upon the following described stock, on account of assessement levied on the 19th day of August, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Curtis, John A	unissued	1500	$300 00
Kitten, W W	unissued	1500	300 00
Lanins, Kinsey	unissued	1500	300 00

And in accordance with law, and an order of the Board of Trustees, made on the 19th day of August, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, Room 5 and 6, No. 302 Montgomery street, San Francisco, California, on Wednesday, the 23d day of October, 1872, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

WM. H. WATSON, Secretary.

Office, Room 5 and 6, No. 302 Montgomery street, San Francisco, California. oc5-3w

Excelsior Silver Mining Company—Location of works, Yellow Pine Distriot, Nye County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 26th day of September, 1872, an assessment of Ten Cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin to the Secretary, at No. 640 Washington street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 29th day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, November 22, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

W. A. KOLLMYER, Secretary.

Office, 640 Washington street, San Francisco, Cal.

Lady Franklin Gold and Silver Mining Company—Location of works, Silver Mountain Mining District, Alpine County, State of California.

Notice is hereby given, that at a meeting of the Trustees of said Company, held on the 24th day of September, 1872, an assessment of fifty (50) cents per share was levied upon the capital stock of said Company payable immediately, in United States Gold Coin, to the Secretary of the Company, at 507 Montgomery street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the twenty-eighth day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on the eighteenth day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of the sale.

J. S. LUTY, Secretary.

Office, No. 507 Montgomery street, San Francisco, Cal.
oc5

Nevada Land and Mining Company—Location, Spruce Mountain Mining District, Elko County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees, of said Company, held on the first day of October, 1872, an assessment of Eight cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the Office of the Company, Room 5, No. 302 Montgomery street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Saturday, the 2d day of November, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 23d day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery St., San Francisco, California. oct2

Noonday Silver Mining Company---Location of works, White Pine District, Nevada.

Notice ie hereby given, that at a meeting of the Board of Trustees of said Company, held on the 11th day of October, 1872, an assessment (No. 12) of twenty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 26 Hayward's Building, California street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 15th day of November, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the 4th day of December, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees,

OHAS. H. FISH, Secretary.

Office—Room No. 26, Hayward's Building, No. 419 California street, San Francisco, California. oc19

Ohio Consolidated Gold Mining Company of West Point, Calaveras County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 24th day of September, 1872, an assessement of Ten Cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No. 432 Montgomery street, Room No. 1. Any stock upon which said assessement shall remain unpaid on the second day of November, A. D. 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 23d day of November, A. D. 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

W. AUGUSTUS KNAPP, Secretary.

Office, 432 Montgomery street, over Donahne & Kelly's Bank. se28-4t

Pocahontas Gold Mining Company—Location of Works, Mud Springs, El Dorado County, California.

NOTICE is hereby given that at a meeting of the Board of Trustees of said Company, held on the 17th day of September, 1872, an assessement of fifty (50) cents per share was levied upon the capital stock of said company, payable immediately, in United States gold coin, to the Secretary, at the office of the company, room 4, No. 401 California street, San Francisco, Cal. Any stock upon which said assessement shall remain unpaid on Thursday, the 24th day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before will be sold on Monday, the 18th day of November, 1872, to pay the delinquent assesement, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

D. A. JENNINGS, Secretary.

Office—Room 4, No. 401, California street, San Francisco, California. se21-4w

Quail Hill Mining and Water Company—Location of works, Calaveras County, State of California.

NOTICE.—There are delinquent upon the following described stock, on accounnt of assessment levied on the 22d day of August, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
F S Spring, Trustee	41	120	$600 00
A E Hill, Trustee	40	7	35 00
A E Hill, Trustee	39	120	600 00
A E Hill, Trustee	37	119	595 00
A E Richardson, Trustee	45	60	300 00
A E Hill, Trustee	31	50	250 00

And in accordance with law, and an order of the Board of Trustees, made on the 2d day of October, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the Company, No. 409 California street, San Francisco, California, on the 24th day of October, 1872, at the hour of 12 o'clock M., of said day, to pay said delinqaent assessment thereon, together with costs of advertising and expenses of sale. T. F. CRONISE, Secretary.

Office, 409 California street, San Francisco, California.
oc5-3t

Silver Sprout Mining Company—Location of works and mines, Kearsarge District, Inyo County, State of California.

NOTICE.—There are delinqnent upon the following described stock, on account of assessment levied on the 26th day of August, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amonnt.
E. B. Mott, Jr.	44	200	$100 00

And in accordance with law, and an order of the Board of Trustees, made on the 20th day of August, 1872, ao many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesroom of Maurice Dore & Co., No. 327 Montgomery street, S. F., on the 9th day of November, 1872, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale. T. B. WINGARD, Secretary.

Office, Room No. 1, Second floor, No. 318 California street, San Francisco. oct2-4t

Silver Wave Mining Company—Location of works, White Pine Mining District, White Pine County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on thn Twenty-first day of September, 1872, an assessment of one dollar per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary of said Company, at the Company's office, 418 California street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Saturday, the Twenty-sixth (26th) day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the Twenty-fifth (25th) day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. W. CLARK, Secretary.

Office, 418 California street, San Francisco, Cal.

Tellurium Gold and Silver Mining Company—Location of works, Pine Grove, Amador County, California.

NOTICE.—Thers ars delinqnent upon the following described stock, on account of assessment (No. 17) levied on ths third (3d) day of September, 1872, ths several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificsts.	No. Shares.	Amount.
Wm Vosburgh	4	30	$30 00
John Melone	6	25	25 00
George W Hubbard	7	10	10 00
George W Hubbard	100	10	10 00
William H Cons	9	15	15 00
J McHardy Hay	8	5	5 00
E Whiting	15	10	10 00
E Whiting	16	10	10 00
Henry Austin	20	5	5 00
James Vizina	31	20	20 00
O P Chasley	33	7	7 00
J H Mullins	34	23	23 00
Henry Van Ness	35	10	10 00
Henry Van Ness	36	5	5 00
J R Mead	40	100	100 00
D'Alva Mosse	43	10	10 00
Abel Wads	55	50	50 00
I L Thuber	55	10	10 00
H H Edmonds	57	12	12 00
T Pritchard	58	10	10 00
A J Baker	61	5	5 00
Isaac Wilson	5	10	10 00
Isaac Wilson	62	10	10 00
Isaac Wilson	96	10	10 00
Judson H Clark	72	20	20 00
Georgs W Ryder	73	198	108 00
H H Wood	74	5	5 00
Richard Ferris	75	3	3 00
Alice C Hinckley	77	10	10 00
William O Hinckley	78	10	10 00
Oscar Burbsnk	80	10	10 00
Oscar Burbank	81	10	10 00
G S Hall	76	95	95 00
G S Hall	84	10	10 00
G S Hall	85	50	50 00
G S Hall	86	20	20 00
G S Hall	87	10	10 00
G S Hall	88	10	10 00
G S Hall	89	5	5 00
G S Hall	90	5	5 00
G S Hall	105	40	40 00
E B Bunce	91	10	10 00
James Mulrooney	71	5	5 00
James Mulrooney	92	10	10 00
William Weiss	21	7	7 00
William Weiss	22	15	15 00
William Weiss	23	3	3 00
William Weiss	93	25	25 00
Murray & Nobls	97	5	5 00
Murray & Noble	99	5	5 00

And in accordance with law, and an ordcr of the Board of Trustees, made on the third day of September, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by Maurice Dore & Co., at No. 327 Montgomery street, San Francisco, California, on Saturday, the 26th day of October, 1872, at the hour of 11 o'clock A. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

WM. H. SOERY, Secretary.

Office, N. E. corner Kearny and Clay streets, San Francisco, California. oc5-3t

Caution---Victoria and Imperial Tunnel and Mining Company—Location of works, Little Cottonwood, Utah Territory.

NOTICE is hereby given that the following named shares, designated by the number of their reapective Certificates, in the capital stock of the Victoria and Imperial Tunnel and Mining Company, were duly advertised, and sold at public auction by John Middleton & Son, Auctioneers, on Saturday, the 12th day of October, 1872, for delinquent assessments and accruing costs of advertising and sale, and will not be transferred by said company.

Name.	No. Cert.	No. Sha.	Amt. due.	Shs. sold.
Thomas Tilden	52	200	$2400	25
Thomas Tilden	53	200	2400	25
Thomas Tilden	54	200	2400	25
Thomas Tilden	55	200	2408	30
Thomas Tilden	26	200	2400	40
Thomas Tilden	57	200	2400	25
Thomas Tilden	58	200	2400	20
Thomas Tilden	59	200	2400	20
Thomas Tilden	60	200	2400	25
Thomas Tilden	61	200	2400	25

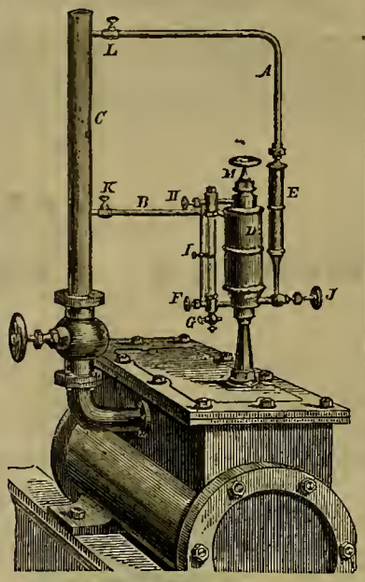
WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery Street, San Francisco, California. oc19-3t

SHAREHOLDERS, TRUSTEES, and SECRETARIES of ALL MINING COMPANIES,

Should see that their advertisements are advertised legally in the MINING AND SCIENTIFIO PRESS, at less than one-half the cost of daily publications. Every person interested in the prosperity of legitimate mining enterprises should favor such practical economy. Send for circular of dates for weekly advertising, free blanks, and a copy of the Corporation Assessment Law.

N. Seibert's Eureka Lubricators.



THE HIGHEST PREMIUM

Awarded by ths Mcchanics' Institute Fair, San Francisco, and State Fair, Sacramento, 1871.

These Lubricators are acknowledged by all engineers to bs superior to any thsy have ever usnd; fesd constantly by pressurs of condsnsed water, supplied by pips A, rsgulated under ths oil by valve J, and forced out through chsck valve and pips B into ths steam pips C; it tbsn bscomss greasy steam, passes to all the valves and cylinder at evsry stroke of the sngine; glass tube I indicates amount used per hour. Packing on rods and stems lasts longer, and the rings on the pieton will not corrode. One pint of oil will last from three to six days, according to speed and size of sngins; I, sliding gaugs; K, valvs to shnt off when engine stopps; H, F, valvss to shnt off in cass of frost; steam does not snter ths cnp; it is always cool; warranted to give satisfaction. Patented February 14, 1871. Manufactursd by California Brass Works, 125 First strset, S. F. 24v23tf

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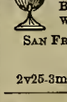
2 to 10 Horse Power.

Made by ths N. Y. Safsty Steam Power Co. Has tubular boiler, and thersfors is secure against the dangers common to shell boilers without tubes. Power is taken from near the bsss, which avoids vibration or top-heaviness. Occupiss but two feet squars of floor space, and is so simpls a boy can run it. All its parts are easily acceeeible—a great advsntags. Is complete in itself as a Portable Engins and Boilsr, or ths engins can bs detached from ths boiler and run independently, if required. Its main points are simplicity, eafety and economy. For printing offices, laundries, tanneries, ranchss, small repair or machine shops, or for hoisting whsrever a small and safs powsr is required, they are peculiarly adapted. Over 500 are already in use. ☞ Send for circular and price list to TREADWELL & CO., Sols Agents, San Francisco. 11v25eow-tf

Important to Miners and Mill Men.

Silver-Platsd Copper Amalgamating Plates, for Saving Gold.



Of all sizes and in any quantity, furnished to order. Fnll instructions sent for opcrating. Particular attention given to plating goods for Builders, Plumbers, etc. Hotel and Restaurant work replatsd.

SAN FRANCISCO GOLD AND SILVER PLATING WORKS, 655 Mission street, San Francisco.

2v25-3m E. G. DENNISTON, Proprietor.

From 3 to 30 Horse Power. ALL SIZES Hoadley's PORTABLE Engines Sole Agents TREADWELL & CO

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AVERILL'S CHEMICAL PAINT,

Of any desired Shade or Color,

Mixed ready for application, and sold by the gallon.

It is Cheaper, Handsomer, more Durable and Elastic than the best of any other Paint.

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15v23-3m HELY & JEWELL, Agents.

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MESSRS. HOWARD & OO., No. 865 Broadway, N. Y.:

Please send me your Price-List of Waltham Watchss for 1872, as per advertisemsnt in MINING AND SCIENTIFIO PRESS.

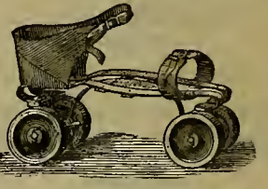
(Sign Nams and Address in full.)

You will receive, postpaid, by retnrn mail, a very interesting pamphlet, illnstrated with fins engravings, describing the details of ths Waltham Factory, and telling how the Watchss are made. You will also receive onr Price-List, which describes all the different grades of watches, gives weight and quality of ths cases, with prices of each, and also explains our plan of sending Single Watches by Express to any part of ths country, no matter how remote, with the privilege of examination before paying ths bill. Two new Watches have been addsd to ths list, ths "Boy's Watch" and the "Railroad Time-Keeper." Please keep in mind that we will REFUNN the MONEY for any Watch that is not satisfactory. Address HOWARD & CO., No. 865 Broadway, New York.

Residents of California, Oregon, and other distaat places will find a great advantage in dsaling with us.

The C-Spring Roller Skate.

PATENTED 1871.



Rights and Skates for Sale.

This superior Skate is now beginning to attract the attention of Rink Owners, it being ths only Cramping Skate now befors the public (except ths Plympton Skate) that can run without infringing a former patent.

THIS SKATE IS POSITIVELY NO INFRINGEMENT

Of anybody's patent. It is made in ths most substantial and workmanlike mannsr, and possesses the following points of merit: Beauty, Elasticity, Ease of Movement, Strength, Lightness, and does not injure the skating floor as much as the ordinary skats.

Every pair Warranted to be just what it is represented. Parties intending to

START A RINK,

Should examine and test this Skate. Samples pairs sent C. O. D. on application.

In ordering samples, state ths number of boot or shoe worn, and whether for lady or gentleman.

For City, County or Rink Rights, call on or addrcss

WIESTER & CO.,

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United Royal Smelting Works

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KINGDOMS OF PRUSSIA AND SAXONY.

Generel Agency, R. J. ROBERTSON, Hamburg, GERMANY.

Whoss Reprssentativs for the United States,

H. ROBERTSON, 149 Broadway, Nsw York,

Is rsady to recsive consignments of

ORE and all kinds of FURNACE STUFF

For ths above named Works.

FULL PARTICULARS GIVEN ON APPLICATION.
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Rubber and Oak-Tanned Leather Belting

New Stock, just in; Pawtncket manufacture; stand ard quality—warranted *the best*. Come and see and get prices, or give it a trial. Sold low by

TREADWELL & CO.,

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English and American Hardware!

A Large, Fresh Stock just received. The old friends of the house especially, as well aa our latcr patrons, are invited to send in their orders. We are prepared to fill such satisfactorily and promptly.

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3v25-eowbp San Francisco.

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For Sale by

CHARLES LANGLEY & OO.,

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$1,000 REWARD!

For any case of Blind, Bleeding, Itching, or Ulcerated Piles that De Bing's Pile Remedy fails to cure. It is prepared expressly to cnre the Piles and nothing else. Sold by all Druggists. Price $1.00.

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First and Fremont streets,

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Steam Engines and Boilers,

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Mining Machinery of Every Description,

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18v20-3m GODDARD & CO.

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MANUFACTURERS OF

STEAM ENGINES,

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STEAM ENGINES,

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Fitted with Cutting's Patent Cams, unequaled for safety, convenience and cheapness. This Hoist can be built for about half the price of any other in use. To be seen at HAWLEY & CO.'S.

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TURNING LATHES, Etc., constantly on hand.

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CROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR

Dunbar's Patent Self-Adjusting Steam Pieton

PACKING, for new and old Cylinders.

And all kinds of Mining Machinery.

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Every Variety of Shafting,

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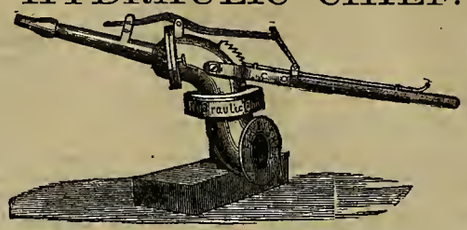
FISHER'S KNUCKLE JOINT AND NOZZLE IS THE Cheapest and Best Hydraulic Machine in use.



MACHINES Manufactured TO ORDER, to throw from One to an eight-inch STREAM.

The only reliable party in the Hydraulic business who protects his patrons.

9v23-tf Address F. H. FISHER, Nevada, Cal.

HYDRAULIC MINERS, TAKE NOTICE—I hereby caution Miners and Manufacturers against making, buying, selling or using a Hydraulic Machine or Joint known as the Little Giant, manufactured and sold by R. R. & J. Craig and Richard Hoskin, as the same is an infringement upon the invention of the machine known as FISHER'S HYDRAULIC CHIEF, secured by Letters Patent, No. 110,222, dated Dec. 20, 1870. All parties participating in such infringements will be rigorously prosecuted. Nevada, Jan. 13th. F. H. FISHER.

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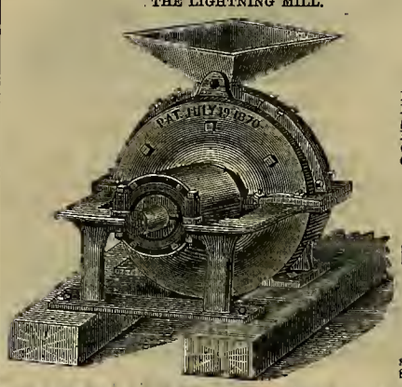

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For Pulverizing Quartz, "Charleston Rock," and all Native Phosphates, Flint, Feldspar, Iron Ore, Manganese, Antimony, Carbon, Corundum, Old Crucibles, Barytes, Brimstone, Slate, Soapstone, Graphite, Glass, Marble, Plaster, Anthracite and Bituminous Coals, etc.

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A complete set of Machinery of our own design and patent for extracting oil from Castor Bean, dispensing with Hair Cloth. Also Machinery for Flax Seed Oil, Mustard Seed Oil, and Sun Flower Seed Oil.

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IRON CASTINGS of all descriptions at short notice.

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CAPITAL.....$1,000,000.

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Manufacturers of Steam Engines, Quartz and Flour Mill Machinery, Steam Boilers (Marine, Locomotive and Stationary), Marine Engines (High and Low Pressure). All kinds of light and heavy Castings at lowest prices. Cams and Tappets, with chilled faces, guaranteed 40 per cent. more durable than ordinary iron.

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24v17-qy

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Manufacture Mill and Mining Machinery,

From the Smallest to the Largest Capacity, on the Shortest Notice, and Guaranty Satisfaction.

N. B.—Eastern Nevada and Utah Millmen, patronize near home and save money. 11v25-3m

Notice is hereby given, that the copartnership heretofore existing between A. J. Severance, Charles W. Randall and J. Gus. Burt, under the firm name of "Severance, Holt & Co.," is this day dissolved by mutual consent. A. J. Severance, having purchased all the interest of his late partners, will continue the business of manufacturing and selling Diamond Drills, as before, under the style of A. J. Severance & Co.

Dated San Francisco, Nov. 24, 1871.
Office, 315 California street. A. J. SEVERANCE,
CHAS. H. RANDALL.
22-v23-tf J. GUS. BURT.

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EUREKA FOUNDRY,

129 and 131 Beale street, between Mission and Howard, San Francisco.

LIGHT AND HEAVY CASTINGS,

of every description, manufactured. 24v16qr

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CO-OPERATIVE,

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Machinery and Castings of all kinds.

Machinery.

Varney's Patent Amalgamator.

These Machines Stand Unrivaled.

For rapidity pulverizing and amalgamating ores, they have no equal. No effort has been, or will be spared, to have them constructed in the most perfect manner and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.

They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Operates as Follows:

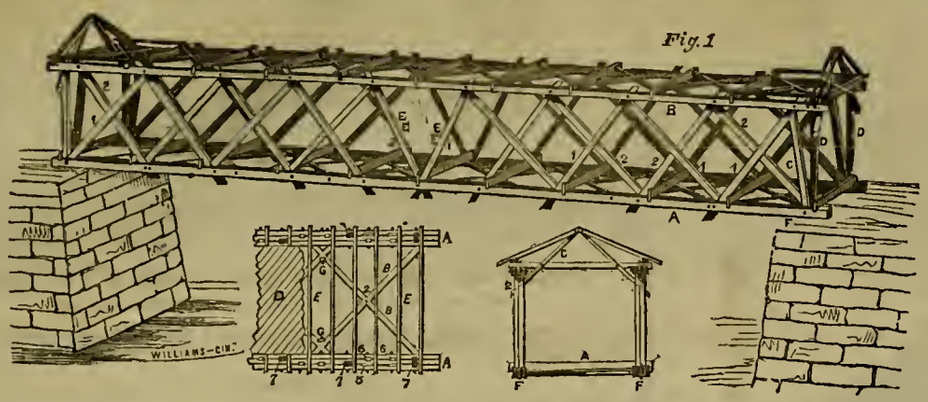
The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the apperture and between the grinding surfaces.—Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.

Setters made on the same principle excel all others They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.

Mill-men are invited to examine these pans and setlers for themselves, at the office, 229 Fremont Street, San Francisco.

PACIFIC BRIDGE COMPANY,

Fig. 1



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Are Prepared, with Superior Machinery, to Manufacture and Build all kinds of Bridges on Smith's, Howe's, and other Improved Plans. Framing of all kinds done by Machinery.

The Smith Bridges have been thoroughly tested in the East for Three Years, and wherever tried have proved superior to any other Bridge in the following points:

Being built of wood entirely, they are not affected by change of temperature.

The timber used is placed so directly in the line of strain, that less material is required to support the same load.

It is not perceptibly affected by shrinkage. It is the most Economical Bridge built. It is adapted to any practicable LENGTH OF SPAN.

Plans, Specifications and Terms will be sent to any County, Township or Person wishing to build a Bridge, and no charge made unless the Plan is used. For all Public Bridges the Plan will always be open to competition.

Smith's celebrated CAST IRON PIER, economical, and adapted to heavy currents, built at low rates.

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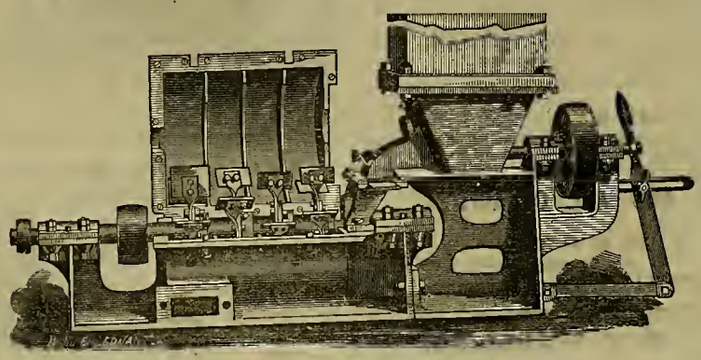

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This Machinery has been adopted by nearly all the Eastern reduction works for reducing ores.

Parties purchasing machinery will find it for their interest to examine this before purchasing elsewhere.

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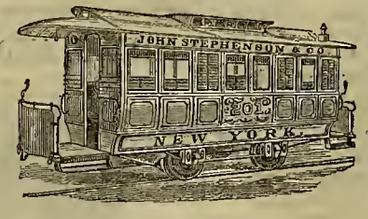

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On all kinds of Ores, and particular attention

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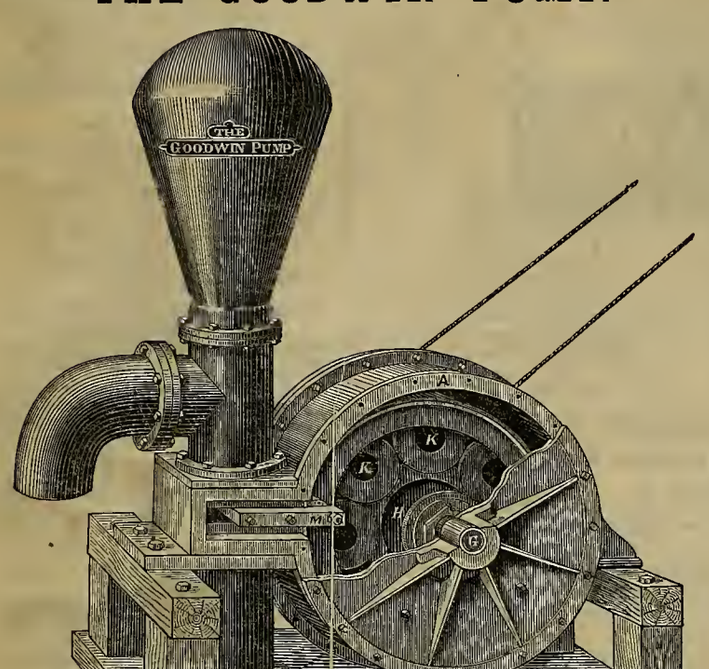

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It is Unsurpassed for Hydraulic Mining,

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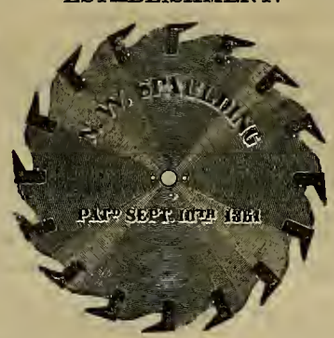

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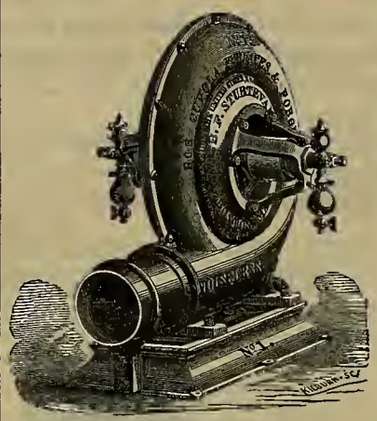
R. HOSKIN, Dutch Flat, Cal.

August 7, 1872. 15v25-tf



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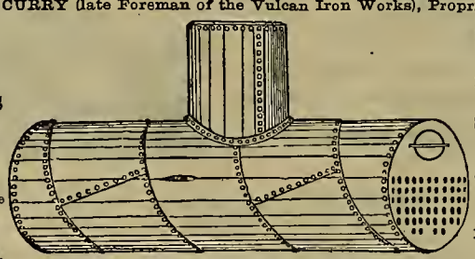
SOLE Manufacturers of the CELEBRATED SPIRAL BOILER.



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Somewhat slower in its Explosion, which we recommend for

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It is fully as safe as the other and evolves neither smoke nor noxious fumes when exploded.

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BLAKE'S PATENT STEAM PUMP.

SALEM, Oregon, January 16th, 1872.

MESSRS. TREADWELL & CO., San Francisco—Gentlemen: In answer to your query regarding the working of the large Blake Steam Pump (20—12—24), our company purchased of you, we would say in all sincerity that the Pump *has exceeded our expectations*. It has been in use since the 27th of September, 1871, and has thus far given the most perfect satisfaction. It does its work with ease, does not get out of order, and requires but little or no attention to run it. It is *simple, durable*, and *perfect* in its construction. We have found it entirely satisfactory, and just the Pump in every respect needed for our work.

Yours, respectfully, W. F. BOOTHY, Pres't Salem Water Works.

All sizes, for Mining, Tank and other purposes, for sale at TREADWELL & CO.'S Machinery Depot, San Francisco, where may be seen the largest stock of Mining, Mechanical and Mill, and Agricultural Machinery, *Portable and Hoisting Engines, Steam Pumps, Hardware*, etc., to be found in the country. 8v25eow-hp

MINING AND SCIENTIFIC PRESS.

An Illustrated Journal of Mining, Popular Science and Progressive Industry.

BY DEWEY & CO., Patent Solicitors.

SAN FRANCISCO, SATURDAY, OCTOBER 26, 1872.

VOLUME XXV. Number 17.

Sewell's Snow Plow.

The machine shown in the accompanying cnt is the invention of Chief Engineer George Sewell, of the United States Navy, and is designed for clearing railroad tracks from heavy snows. The advantage of an apparatus which will accomplish this ohject snccessfully is sufficiently apparent to require no explanation. It is nnderstood that this one will be practically and thoroughly tested this winter hy some of the railroad companies, and if it justifies in practice all that it promises to perform, there will he left no excuse for serious detention resulting from snow ohstruction on the road across the continent or elsewhere. The *American Artisan* describes this invention as follows:

The machine can carry its own motive power, or it can be loaded to cause sufficient traction to drive the snow-removing machinery, the latter being connected by suitable gearing to the wheels of the truck of the machine, and the whole heing controlled by a powerful locomotive, as shown in the engraving. The wheels of the truck are connected by rods, as shown, so that the tractive power of all is obtained. If deemed necessary, the locomotive can have one of the machines at each end.

At first glance, it might be thought that this machine would be inoperative in deep cuts with high hanks, but under such circumstances it would only be necessary to go through the cut with the machine and throw the snow on the opposite track, then to take that track with the machine, pick the snow up, aud deliver it into empty cars prepared for that purpose. Mr. Sewell has desigued a car for this special purpose, which is also adapted to clear out cuts where there is but a single track. This snow-digger is particularly commended to the officers and directors of the Union and Central Pacific railroad companies. Snow fences, although affording partial protection from drifts, are liable to destruction from fire and the elements; and should they escape combustion and tornadoes, they must inevitahly in a short time succumh to natnral decay, and their restoration wonld involve enormous expense. We think it certain that an ample supply of these machines could be maintained at less cost than the fences, while it would render the latter unnecessary, and enable the road to he kept open at all times.

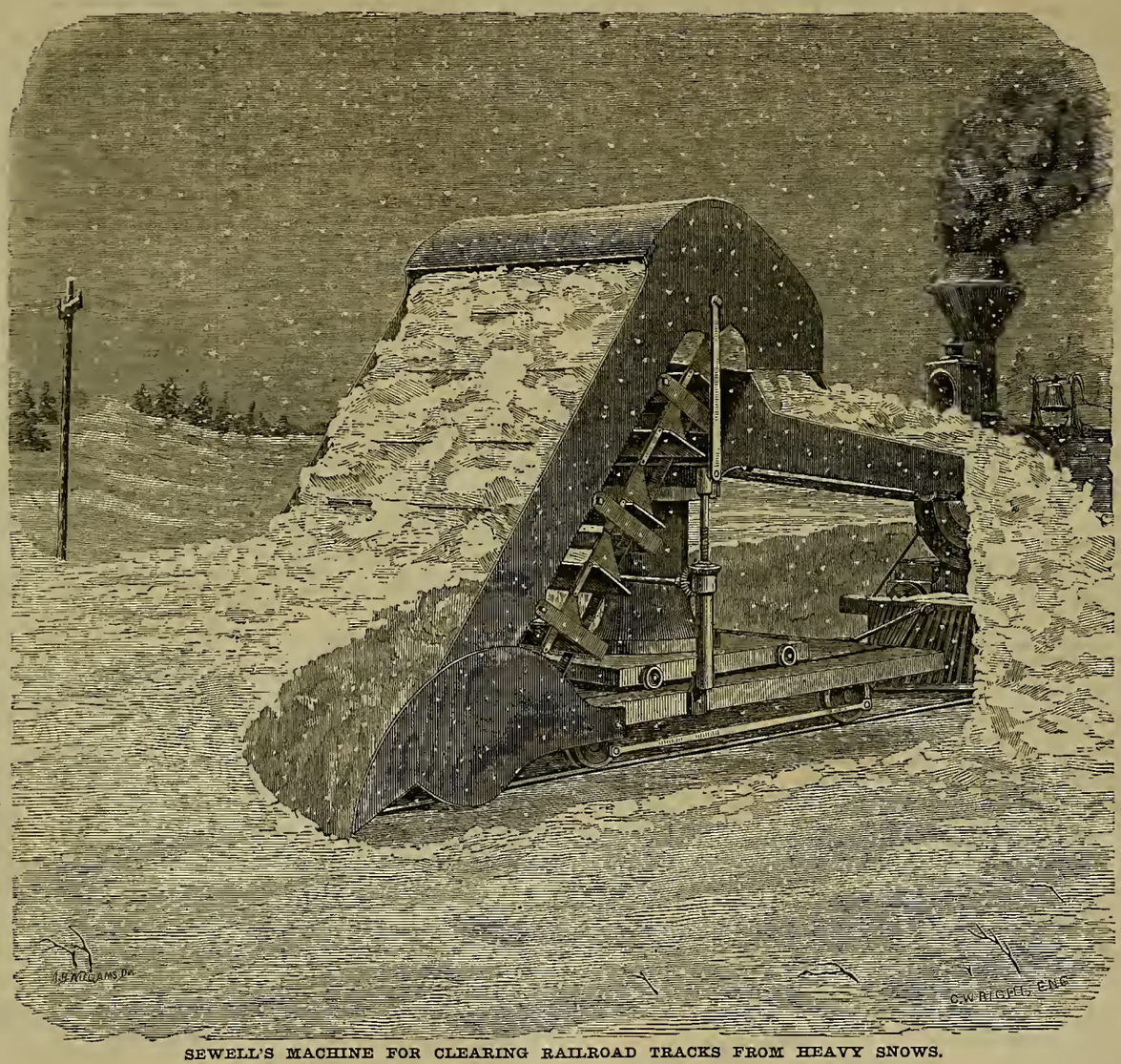
Referring to the engravings, it will be seen that the machine consists of an endless chain of buckets or elevators, embracing the whole width of the road bed, picking up the snow and delivering it to a chute, the bottom of which consists of an endless traveling belt or carrier supported on a series of rollers, which carrier constantly discharges the snow on the sides of the road, and at any desired distance fron the track, depending on the length of the chute. The belt is driven hy absolute power derived from the truck wheels. The chute is arranged to deliver the snow at either side, as may be desired; also, to be turned into line with the road when necessary, or to be raised or lowered if required by the exigencies of the occasion.

The elevator is also arranged to be lowered in passing under bridges. A frame is snspended nnder the elevator to prevent sagging of the chain and buckets. A scraper placed just forward of, and at the lower part of, the elevator, is designed more particularly for clearing ice from the rails in some of the mountainous portions of the Union and Central Pacific railroads. The cutting edges of this scraper are so arranged that irregularities met with at the joints of the rails will not obstrnct its operations.

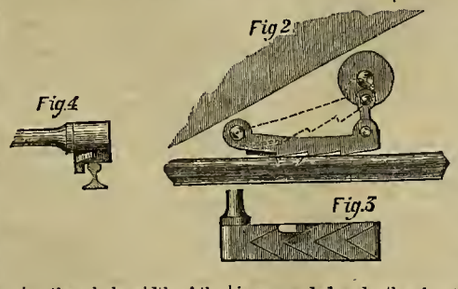
The use of the tooth projecting below the rail, as seen in Figs. 3 and 4, is to open a channel in the ice for the flange of the wheels. This also is shaped so that irregularities at the joints of the rails will not obstruct its passage. When not required, it can he thrown up out of the way, as shown by the dotted ontline.

During the ohstruction of the Union and Central Pacific roads, the Pacific Mail Steamship Company and the Panama Railroad Company reaped a rich harvest, and these companies are now making extensive preparations to do the same thing during the coming winter, feeling that neither freight nor passengers will again take the risk of a similar detention. It is fair to suppose that the officers of the two great roads named are awake to the necessity of secnring this traffic, and will eagerly embrace any plan that offers a reasonable prospect of relieving them from their embarrassment.

Any further information concerning this machine can he procured from Mr. Geo. Sewell, Brooklyn, N. Y.



SEWELL'S MACHINE FOR CLEARING RAILROAD TRACKS FROM HEAVY SNOWS.



Auburn Mine.—A very rich strike is reported in the Auburn mine, Rock Creek, Placer County. It is "specimen ore," from a pay streak 15 to 20 inches thick, in a ledge five feet in width and is said to run all the way from $3,000 to $10,000 per ton. The *Stars and Stripes* thinks it is one of the finest and most reliable ore developments ever made in quartz mining in Placer County, and will have a beneficial effect on the business prospects of the town also.

Coal.—It is said that parties have arrived in Pioche from the coal and iron mines of Kannarra, Utah, and have arranged to supply that market with coal from the latter place.

CORRESPONDENCE.

Tunneling in Eureka District, Nevada.

[Written for the PRESS.]

Since the new encouragement given to this branch of mining, by the Act of Congress of May 11th, 1872, and the protection thereby afforded to owners of tunnel claims, an impetus has been commnnicated to enterprises of this character which is very gratifying. Very few had entered npon the business of prospecting by this more economical method, the rnnning of adits being limited to those wbo found them necessary in the course of development of their mining property. Now, however, ground is being opened by tunnels and cross-drifts throngbout the district; some upon locations under the provisions of the new mining law, and others for the pnrpose of better development of old claims. The newest deserve our notice first, on account of the operation of the broad and liberal provisions of the act governing their location and working. The first location was made on the 18th of Msy—only seven days after tbe approvsl of the law by the President—by J. H. H. Williams and O. F. Griffin of Ssn Francisco, and Dr. L. C. McKinney of Eureka, and called tbe

Prospect Mountain Tunnel.

This level is designed to penetrate the central portion of Prospect Hill, commencing near its base and continuing a straight course entirely tbrough the monntsin, a distsnce, by actusl survey, of 2,700 feet. It will tap several well known mines, and is expected to reveal msny hidden veins beneath the surface, wbich would otherwise never be discovered. Among the nnmber of mines already being opened, as well ae those wbicb have been more or less prospected heretofore, which this tunnel will intersect, are the Enterprise, Hamburg and Cadiz, belonging to Dr. McKenney, the Morris, owned by Smith; Dunn & Smith; the Whippoorwill, owned by Maurice Wakeman, "French Joe" and Scribner; the Dolphin, Oromoso, Diamond, Eclipse and Mayflower, owned by Cole & Bridge, and the Slow and Sure belonging to your correspondent. The Morris and the Whippoorwill are mines of proved value, and were very near being sold this past summer, for $12,000 each. So also are the Oromoso and the Hambnrg.

The tunnel is now in 87 feet, and is being driven through very hard blne limestone. The extreme npper portion of a well defined vein of ore bearing qnartz was crossed at the beginning of the open cut at the mouth of the tunnel, whicb vein the owners of the tunnel right propose to prospect at a futnre time. The first hundred feet is nnder contract at eight dollars per foot, the workmen finding everytbing wherewith to perform the work.

Ruby Hill Tunnsl

Is being prosecuted by a company incorporated nnder the laws of the State of Nevada, and the stock is principally owned by tbe inhabitants of this district. Dr. L. C. McKenney, is President and manager, and Col. Sam. Bell, Secretary. Fourteen thousand shares at the minimum price of fifty cents per share having been offered in the market by the Trusteee, for the purpose of raising a working capital. Enough stock bas already been sold to enable them to prosecute the work, and the level bas now been run a distance of 235 fcet, crossing in its course one "blind lode," at 200 feet from the mouth of the tunnel. The ground of the company embraces 600 feet across the the hill, by 800 feet in length. It adjoins the property of the Eureka Consolidated Co., on the north side of the hill, a little past the summit. Tbe Ruby Hill Tunnel Co., intend to run tbeir drift to the point of junction with the claims of the Consolidated Co., "pay, or no pay." Several surface claims showing good prospects were purchased by the Ruby Hill Tunnel Co., on the line of their tunnel, previous to commencing work. Ruby Hill Tunnel was located on tbe 18th of May, seven days after the passage of the new mining law, and in accordance with its provisions.

Diamond Tunnel

Was located in May last, for the pnrpose mainly of prospecting the mine of the same name on Prospect Hill. Only a commencement has been made however, the owner having too much work on hand at present, in developing other mining property.

Safe Tunnel

Is located near the foot of New York Cañon, upon a mine of the same name, now ownod by Dr. McKenney and A. Skillman. The level has been driven abont 20 feet in blue clay and quartz, and a winze sunk following the lead, which snddenly dips at that point. The ore already mined from tbis location is of good grade, assaying from $80 to $300 and upwards per ton. From the bottom of the winze, an incline has been started in hard limestone, that being the formation in which the ore is now found. Work has however, been snspended here for the present.

General Lee Tunnel.

This forms a part of the works of Adams Hill Consolidated Co., of which A. M. Ellsworth is Superintendent. The level was run upon the General Lee mine by the original owners, and bss been since continued by the present company, who hsve also been engaged in sinking shsfts and running drifts from the same, to still fnrther prospect tbe mine.

Elise Tunnel.

Tbis work was prosecnted more than a yesr ago, and was performed by Adam Hsll and others, to the extent of 300 feet, for the purpose of striking the Elise and Sterling ledges, which crop out at tbe surface. The tunnel traversed hard blue limestone for a distance of 200 feet when the ore made its appearsnce. At 260 feet tbe ore of the Elise was struck. Work wss snspended at 300 feet.

Lemon Tunnel.

The Lemon Mill and Mining Co., own the mine of the ssme name, upon which this level is being run to strike tbe ore at 360 feet from the surface. Tbe work is under contract to Cornish miners, and 381 feet have alresdy been finished. The distance to be run is probably about 130 feet.

Dunderbsrg Tunnel.

The Dunderberg mine belongs to the series owned by tbe new English company, incorporated under the name of Ruby Hill Consolidated Co., limited. Considerable work has been done through hard rock, at five dollsrs per foot, bnt tbe contractors became dissatisfied with the terms of their contract, and threw it np. The tools were furnished by tbe company.

Robertson Tunnel

Was driven about two years ago, near the head of New York Cañon, for the end of prospecting one of the numerons locations msde by George F. Brsgg and J. M. Robertson; bnt it is said that this and other mines belonging to the same parties are now awsiting a patent from the United States, which has been applied for by Geo. F. Bragg.

Hcme Tickel Tunnel,

On the mine of the ssme nsme, of which P. H. Smitb is Superintendent, has been driven 100 feet, to strike ore shown upon the surface. Tbe developments made by this tnnnel are of the most encouraging character. Prof. Clayton long ago reported favorably npon tbis mine, and appearances indicate a confirmation of his opinion.

Orange Tunnel.

Upon the Orange mine bave been found the most remarkable series of caves or chambers of ore, connected by "leaders," or small veins, which gradually enlarge as the chambers are approached. After working out one of these caves, the proprietors became convinced that a larger one must exist at no great depth below, and concluded to run an adit to meet it, instead of following the "leaders" to an indefinite length. A tunnel was commenced at a lower point on the mountain side, and a perpendicular shaft at a higher one, immediately over the last deposit found. The level was driven abead, and entered an immense chamber of ore, and the ehaft soon after reached the same deposit. The Orange is owned by Dr. J. H. Nesbit of Eureka.

Lawlon Tunnel.

This is one of the works of the Eureka Consolidated Co., upon the Bnckeye mine, and with the exception of the Richmond mine, has developed the largest body of ore of any in the district. Thousands of tons have been received at the furnaces of the company from this mine, and the supply still seems inexhaustible. The ore was first struck in this tunnel more than two years ago. The deposit was 154 feet in length, and of unascertained depth.

Giffin Tunnel.

This is the longest adit in the district, and was named in compliment to O. F. Giffin, President of the Star Consolidated Co., whose property it intersects. It is now 468 feet in length and is expected to tap a numerous group of ledges upon Freeman Hill belonging to the company. A "blind lode" has already been struck in tbis tunnel, at 400 feet from its mouth, and 150 feet from tbe surface. The work is under the superintendence of Dr. McKenny. The whole drift is as straight as a bee line, and the track is in perfect order. The ravines near this tunnel are shallow, and the arrangements for economizing space for a dump are admirable. The company own 24 locations by discovery and pnrchase, and among these are such mines as the Blue Star, Compromise, Unicorn, Star of the East, Sherwood, Lawton, Monongahela, Mattspan, Sentry, Elijah and Eastern Nevada.

Williams Tunnel

Also belongs to the Star Consolidated Co., and ie now in 242 feet on Freeman Hill. It is in the form of an L, the shape and situation of the hill compelling an indirect route in order to attain depth upon the mines. It will intersect and prospect the Unicorn, Compromise, Star of the East and Sherwood mines. The tunnel was named in compliment to J. H. H. Williams, one of the Trustees.

Fourth of July Tunnel,

On the mine of the same name, situated on Prospect Hill, belongs to Judges Williams and Hillyer, of this State, and to M. E. Gardner and the brothers Drieshach, of Carson City. John Driesbach is the Superintendent. An incline and perpendicular shaft reached a depth on the ledge of 160 feet, when the proprietors concluded to run a level to strike it at a depth of 300 feet. The drift is now in 175 feet tbrough very tough rock nearly the whole distance. Only eight dollars per foot is the contract price for this tunnel, and it is evident that the contractors must lose money. Tbe ore of tbis mine is abundant, and of high grade, and is associated throughont with silver-bearing blnish-white quartz. The earthy matter about the ledge consist of argillaceous iron, yellow ochre, srseniate and csrbonate of lead, and ferruginous sand. The mine is one of the few in this district in wbich the minerals are so associated. With the exception of the Slow and Sure, and the mines of the Star Consolidated and Adams Hill compsnies and one or two of the Ruby Hill Consolidsted, all others in this district are ochrsceons deposits, some of them of immense extent. Such are the Richmond, Buckeye, Excelsior, Laurel, Home Ticket, Valentine, Orange, Morris, Whippoorwill, Golden Gate, Oromoso, Diamond and a host of others. Well defined fissure veins of metal-bearing quartz are tbe exception, not the rule; although more or less of this mstrix, in a decomposed and br ken up condition is found in all these mines, associated with the oxides of iron.

Lord Byron Tunnel.

The mine of this name belongs to tbe series owned by the Ruby Hill Consolidsted Co., and is situated on Prospect Hill, immediately above tbe Valentine, also belonging to the ssme company. Tbe tunnel is being run to more completely develop the mine; bnt, owing to tbe sitnstion of the ground, will not strike the ledge at any great depth. The work was recently commenced, and bnt little progress has yet been made.

X Y Z Tunnel.

This level was run npon tbe mine of the ssme name, belonging to the South Eureka Mining Co., situated on Prospect Hill, adjoining the Fourth of July. It is abont 100 feet long, and a winze has been sunk at its termination to stnike the deposit below. Work has been suspended on tbe mine for some weeks past.

Laurel Tunnel.

Tbis tnnnel is run to prospect the Laurel and Echo mine, belonging to the Lemon Mill and Mining Co. Tbe distance run is now 70 feet, and when completed, the depth from the surface will be 600 feet.

Old Put Tunnel.

This work also belongs to the Lemon Mill & M. Co., is in 70 feet, and will strike tbe ore at a depth of 500 feet. All the mines of this Company contain good milling ore in fair paying quantities. Tbeir mines are all situated on Prospect Hill.

Tunnel and Shaft Compared.

It may safely be predicated of every mine, that it is not and cannot be properly opened without tunnelling. Even where the prospecting has been by perpendicular sbaft, the miner finds himself necessitated to resort either to drifting at different levels to tbe ssme, or to go outside at a lower point on the monntain side, and drive an adit for his ledge from thence.

Now, whether it has been satisfactorily ascertained or not, by the prospector, that he has a valuable mine, the most economical method, either of testing its value or of working it permanently, is by tunneling. Tbe work by drift can be performed for about one-fonrth of the cost of sinking a shaft, for any distance. Wben, therefore, the indications are sufficiently encoursging npon the surface, the former method of prospecting should alwaye have tbe preference, wherever practicable.

The New Mining Law.

In this view of tbe subject, the new National Mining Law gives all the encouragement needed for the prosecntion of tnnneling for prospecting even for hidden lodes. Some obscurity, however, still lurks in the provisions of the section regulating this matter, which tbe instructions of Commissioner Drnmmond fail to enlighten. It is yet an nncertain conclnsion, whether the locator of a tnnnel-right can claim exclusive ownership of all the surface ground for 750 feet on each side of his tnnnel face, and so on throughout his whole line, and prevent all prospecting over the whole extent of snch an immense piece of property; or whether his 750 feet is to be confined to the line of snch lodes as he may discover in his tunnel, or may have located on its line previously. Tunnel-right owners now claim to exclnde all parties from running tunnels on either side of them, for a distance of 750 feet, and on a line 3,000 feet in length. Wbat the Commissioner will say to this we do not know; that he shonld say something is important and imperative. Otherwise, the tunnel-right may prove oppresive to the prospector, and discourage all attempts at discovery, except by large capitalists. If a tunnel location gives simply the right to rnn a level on a certain line for a distance of 3,000 feet, and allows exclusive ownership of all lodes found in its course, for a length of 1,500 feet, the matter is easily nnderstood, and all action as easily accommodated to snch a regulation. But if snch regulation may inclnde a whole mountain, from base to apex, and from center to circumference, the business of prospecting mnst be giveu np by all persons without means, whicb will be eqnivalent to its being given up altogether; for capitalists will not go personally into desert regions, seeking to make mineral discoveries, at tbe cost of innumerable personal discomforts.

P. S.—Since writing the above, I have been shown the recent explanation of the Commissioner, of date Sept. 20th, on the points alluded to; and it effectually disposes of all the qnestions raised concerning the rights of tunnel locators. Persevering and plodding prospectors will now proceed in easier sboss. W. H. M.

Prospecting and Mining—Copper Veins.

EDITORS PRESS:—In nearly every mining district may be seen msny fruitless attempts, and tens of thousands of dollsrs expended in search of mineral bearing veins, far from the proximity of any such. The presence of a light stain of mineral has deluded many; notwithstsnding it is generally known tbst an insignificant amount of mineral, especislly copper and iron, will prodnce oxides which will extend to a considerable distance from its origin. I have seen formations literally stained with faint shades of different minerals in localities wbere I was qnite sanguine neither of tbe minersls existed to any remunerative amount; for water, like veins, traverses strata after strsta, formstion after formation, finding its way tbrough veins of minerals, tsking tberefrom, in solntion, some of the minerals through wbich it passes, and consequently coloring all the interstices of the rock in its course, which coloring, however, will decrease in distsnce according to the qnsntity of water pssing through, and the compsctness of the strstification. If the formstion be auriferons, faint oxidation may be observed for miles. Tberefore it is obvions tbat any one intending to prospect at surface, or at a certain depth, should not tbink of investing capital with merely a slight mineral stained rock in view, but rather wait until be has trsced the stain to its deepest hue.

Nearly two years since, when passing a mine in one of tbe Territories, a gentleman requested me to descend it, which I did to a depth of 250 feet. He sbowed me some of the mineral, which he said csme from the bottom, that looked so snrface like tbst I almost doubted tbe assertion; bnt when descending I observed all the way down a small stain produced by chemical action, being the very identical composition presented meat the surface, while on either side pebbles (very round) indicated the formation to be a slide, wbich convinced me that even at that depth we were not at the surface of the main vein—it being still beneath—which was verified in the depth (25 feet) subseqnently reached by getting into the limestone, where a diminntive vein of argentiferous galena existed.

On the other hand many a one possessing land with unmistakable signs of mineral beneath, becanse of inexperience, bas sold for a trifle and in after years lamented their "luck," when the coffers underneath were nnsealed and the treasnres of tbeir once possession were being taken out year after year without signs of exhaustion. This is of no rare occurrence, but has been and will be frequently repeated. Such facts should stimulate us to appreciate all which are discovered, and compare carefully every new discovery with otbers previously known.

As there are many copper mines tbronghout the State recently pnt in operation, by reason of tbe present great demand for copper, a few suggestions, in relation to working such mines, may be acceptable. As mentioned heretofore I find that copper veins at snrface presenting a bnrnt appearance, disseminated throughout with a little copper ore, are indicative of a greater amount of mineral beneath than tbose yielding yellow sulpburetts, without evincing any snch action. This is wortby of observation. Some people are of the opinion tbat copper veins "never die out." Notwithstanding these assertions, however, sucb veins, like otbers, do often disappear when they encounter different stratifications, etc.

In the foothills of the Sierras, in the southern counties, the veins are embedded in the clay slate formation, which is very congenial to copper ore; nevertbeless, they are peculiar and tbeir characteristics different from copper veins generally. At the surface they present gossan, soon carbonates of copper, continuing several feet in depth, and gradually yielding to black oxides, or yellow sulphuretts. But in depth the yellow sulphuretts become tbickly impregnated with iron pyrites, causing considerable decrease in the percentage of the ores. These iron pyrites *there*, are the finale of copper ore, instead of being *vice versa*, as is generally the case in other locations. Iron pyrites in some districts are considered indicative of the proximity of a body of copper ore, whereas in this region it is indicative of its exhaustion—itself "dying out."

In visiting the copper mines of this coast, one is surprised to see so much copper ore wasted—thrown away as refuse because of the lack of machinery applicable for its separation. The plan of roasting, which is generally adhered to, results in a loss of twenty-five per cent. of tbe copper ore so worked. By the application of different kinds of machinery, ores as low as three per cent. of copper in Cornwall and Devon, England, remunerate the proprietors. Then why not apply such here? The ores on this coast far surpass tbose of England for richness. T. S.

A COMPANY has been formed for building a csnal for irrigating purposes, and a narrow-guage railroad from Carson Valley, by way of Silver Mountain, to Oakland.

THE product of the Groin mine, from sixteen stamps, has averaged $20,000 per month for some time past.

A BAG mannfacturing company is being formed in Marysville, with a capital of $50,000.

Scientific Progress.

Soluble Glass as a Detergent.

MM. Baerle & Co., of Worms, have pnblished the following on the employment of soluhle glass as a detergent: The employment of soluhle glasa in tho washing of wool is an important fact in this industry. The treatment is so simplo and so ecouomio that it is only necessary to make an experiment to recognize its advantages. Take 40 parts of water, at the teuperature of 50° to 57° Cent., and one part of solnhle glass; plange the wool into the mixture, stirring it about for a few minutes by hand, then riuse it in cold or tepid water, and it will be fonnd completely white and void of smell. The wool, after this operation, remains perfectly soft, and loses none of its qualities, even when left for several days in the solution of the silicate, and being washed in hot water. Sheep may also bo washed with the same preparation, care heing taken to cover tbo eyes of tha animals with a handage, to perform the washing with the solution iustantaneously, and to remove the surplus with tepid water. In the caso of combed wool, the wool shonld be first steeped in the solntion above given, and afterwards in another hath composed of 80 parts of water at 37° Cent., and one part of solnble glass. In this way the effect is excellent and economic, without the employment of soap or soda, and the wool is rendered at least equally white, clean, and soft as by other methods. Soluhle glass may also be used advantageously for domestic washing. A bath mnst be prepared over night, with 20 to 30 parts of water, at 50° to 57° Cent., and of one part of nentral soluhle glass; the linen is plunged into this hath and left there till the following morning, when, after the bath has heen reheated with additional hot water, it is to he worked with a wooden stamper. The aspect of the solntion tells when tho linen is nearly cleansed, when the former is to be drawn off, and the linen drained. The operation is then completed by rinsing with a little soap; bnt it is well to pass the linen again through a weak solntion, consisting of one part of soluhle glass to 50 parts of water at 45° to 50° Cent., and then to rinse it ont in pure water.

Noctilucine.—This name Dr. T. L. Phipson has given to a peculiar organic substance which, he says, causes the phosphorescent light in fishes and other (dead and living) creatnres; also in vegetahle tissne. It is, at the ordinary summer temperature [we condense from the *Chemical News*] white, almost liquid, slightly odoriferous, and contains considerable water; is insoluble in alcohol and ether, slightly soluble in water, and easily soluhle in nitric or sulphnric acid. So long as it is moist it ahsorbs oxygen and evolves carhonic acid; when left to itself it dries np slowly to thin, ahining, translncent films. When recently produced it is highly phosphorescent, oxidizing and thns producing light. It is secreted in phosphorescent auimals by a special organ and appears to he nsed in prodncing light nearly as fast as it is formed. It is also produced, under certain conditions of temperature and moisture, in dead animal matter of various descriptions, (pork, beef, fish, blood, etc.,) and occasionally in wine Its secretion in the higher phosphorescent animals, as the glowworm and firefly, is dependent to a certain extent npon the nervous system of these insects, hence they have the facnlty, apparently, of shutting off their light at will. In this case the secretion is stopped for the time. A certain qnantity of noctilucine exists in the eggs of the glowworm, which shine for some time after they have been deposited.

The Bottom of the Mediterranean Sea a Desert.—Dr. Carpenter read an interesting paper before the late meeting of the British Association of Science on the temperature and other physical conditions of inland seas, especially considered in refereuce to geology. He stated his belief that a uniform glacial temperature would be fonnd to prevail even in equatorial seas, if they went deep enough, and this cold could only he understood on the theory that there was a movemcnt of cold water from the Poles along the bottom of the sea. He showed the inland character of the Mediterranean sea, and that the cold water of the Atlantic conld not flow into it on account of the ridge which rose up and shut them off. Hence there was no circulation, and a good deal of finely divided mud, which choked marine life and rendered the bottom of the Mediterranean a desert. He next referred to the temperature of the Red Sea, and showed that at a great depth there was a winter temperature of over seventy degrees. Coral reefs could not grow at greater depth than twenty-eight fathoms, and this, he thought, was due to the cold water below.

Rapid Telegraphino.—According to the *Journal of Telegraphy* the average actual time of transmitting messages from New York to London, for one week, was 13 minutes 59¼ seconds. This includes the long press and government dispatches. Every message haa to he written four times. On one day the average time was only six minntes thirty-five seconds. The shortest average time was one minute four seconds. This is wonderful, yet steps are being taken to introduce improved inatruments by which the time can be still further reduced.

An Impressive Scene.

A singular scene was witnessed in the Paris Academie des Sciences at a sitting which occurred during the siege. Mr. Egger, Professor of Greek at the Sorbonno and member of the Academie des Belle Lettres, availed himself of the privilege granted to the members of different academies, and presented a long dissertation on a papyrus found in 1866, which gave a deal of information on the state of ancient Egyptian civilization. It related chiefly to the prices of articles used in those times. The bursting of the shells and the thunder of French artillery was distinctly heard during the reading.

It was an impressive scene, to see these learned men discussing a civilization which was swept from the earth so many centuries ago, at a time when their own country was threatened hy ruin not less awful and perhaps more disgraceful. The members of the Academie continued their weekly meetings with perfect regularity throughout the bombardment. While everything else was turned upside down, while a dynasty was passing away, while sons and brothers were perishing around them, an enemy at their gates, want within their walls, and missiles of war threatening themselves and their household gods, these men continued their usual studies.

We are reminded of Archimedes at the siege of Syracuse, save that there we have but one man, while here it is a large body of the intellectual flower of the country. Some of the more active of the members are men who have attained that philosophic calm which not even the terrora of war can dispel, nothing diverts them from the even tenor of their way.—*Ex.*

The Work Done by a Human Heart.—The total daily work done by a human heart is equivalent to 124,208 tons lifted one foot. The daily labor of a workman, deduced from long-continued observations of various kinds of labor, is found to be equal to 3,540 tons lifted through one foot during the ten hours. This is less than three times the work doue hy a single heart, heating day and night for twenty-four honrs. In a boat race, it is calculated that fifteen foot-pounds of work are performed hy each ounce of muscle during each minute of the rowing. No muscular labor that man can undertake is more severe than this; and yet this labor is only three-fourths of that which is exerted day and night during life by each of our hearts. If the heart should expend its entire force in lifting its own weight vertically, it could raise that weight 19,754 feet in an hour. An active pedestrian can climb from Zermatt to the top of Monte Rosa, 9,000 feet, in an hour; or he can lift his own body at the rate of 1,000 feet in an hour; which is only one-twentieth part the energy of the heart. The heart's energy equals one-third of the total daily force of the muscles of a strong man; it exceeds by one-third the lahor of the muscles in a boat race, estimated by equal weights of muscle; and it is twenty times the force of all the muscles used in climhing, and eight times the force of the most powerful engine of the same size yet invented by man.—*Boston Journal of Chemistry.*

The *American Chemist* says a very elahorate series of experiments was recently made in New York to test the relative value of different lubricators. The experiments were continued during a period of fonrteen months. The following were the general resnlts and inferences: The consumption of oil varies with its temperature when applied. Winter sperm sustained the heaviest pressure, and was taken as the initial of comparison for all others, and their percentage of lubricating value determined hy it. The tests of mineral oils and mixtures of animal and fish-oils with them would not sustain an equal pressure with the sperm, when equal qnantities of the oil were applied, without rapidly increasing the temperature of the journals, and producing an abrasion of their surfaces. When the pressure on the bearings was made eqnal with winter sperm, it required from 100 per cont. to 400 per cent. increase of oil, to keep the temperature of the journals helow 100 deg. Fah. Experiments were mado at varied velocities with the same oils. The results proved that as the velocity was reduced the pressure could be increased, and the relative consumption of oil, applied at eqnal temperatures, was decreased in almost equal ratio.

The property of glycerine to preserve leather has been known for a long time; it is now proposed to employ it in tanning, to increase the elasticity and resistance of the leather. This system of tanuing is particularly adapted to straps and belts of machinery, and it keeps them from drying and cracking. It is only necessary to immerse the leather, tanned in the usual manner, in a hath of glycerine, and to leave it for several weeks, when the pores will be impregnated with the greasy substance, and the leather will he found to be much more elastic and tenacious.

Coloration of Glass by Sunlight.—Mr. Thomas Gaffield, of Boston, Mass., has found by careful observation that nearly every kind of glass, especially that colored with manganese, is liable to a change of color hy the action of sunlight, and that the glass could be restored to its original color hy the action of heat. He holds that the glass in our old cathedral windows does not now preaent its original colors; but that they can be brought hack again hy heat.

Mechanical Progress.

An Experiment With Paper Car Wheels.—The Springfield *Republican* says the Connecticut River railroad company is about introducing for trial, a set of paper car wheels nnder the forward truck of one of its engines. These wheels have heen known to car-builders for some time, hnt the demand for them has heen moderate on account of their cost, notwithstanding the universally-admitted fact that they are safe and easy going. The wheels are manufactured hy hringing a pressure of 350 tons npon sheets of common straw paper, which forces them into a compact mass, which is then turned perfectly round and the hnh forced into a hole in the center, this requiring a pressure of 25 tons weight. The tire is of steel and has a one qnarter inch hevel upon its inner edge, thus allowing the paper felling to be forced in, 250 tons pressure being required in the process. Two iron plates, one upon each side of the paper, are holted together, which prevents the possibility of the fillings coming out. The tire rests npon the paper only and partakes of its elasticity in consequence. Although these wheels are much more expensive than those in common use, the patentee claims that they are cheaper in the end, as they wear longer, injure the tracks less, and run with less noise than wheels of any other pattern.

Australian Woods.—Many of the Australian woods exhibit a peculiar beanty of structure, which adapts them for small furniture and turnery uses. Some are highly fragrant, and retain their agreeable odor for a considerable period of time; this renders them additionally pleasant and acceptable in the form of ornamental articles for the boudoir and drawing room. The scented myall (*Acacia homalopyhlla*) is a very hard and heavy wood, having an intense and delightfnl smell of violets. It has a dark and beautiful "hardening" which makes it applicahle to numerous purposes of the cabinetmaker and the wood turner, and for an infinite variety of minor uses. It rarely exceeds a foot in diameter, bnt has been used as veneers.

This tree is common in many parts of Australia; since the London Exhihition of 1862, when caskets and other articles were shown from Queensland, and the remarkahle property it possessed became generally known to Enropean manufacturers, the wood has been in request for making glove, handkerchief, and other fancy boxes. As long as it remains unpolished it preserves this peculiar fragrance of violets, which does not occur with such perfectiou in any other known snbstance.—*Art Journal.*

An official trial was made at No. 2 huilding slip at the Devonport Dock-yard, on Thursday, the 12th ult., of an invention which consists of interposing between two thicknesses of wood an elastic preparation which, when fired at and perforated by a bullet, would instantly close and become perfectly watertight, rendering a vessel so fitted unsinkable. A wooden box 3 feet long hy 10 inches wide, and three-quarters of an inch in thickness, and having on one side an eighth of an inch iron plate screwed on to the wood, was treated with the preparation and fired at with a rifle at 23 yards' range. Ten shots were fired, the hullet each time going completely through the wood. With eight shots the aperture only partially closed, and on the hox being immersed admitted water more or less freely. Two shots fired point blank were successful, closing immediately, and were practically water-tight. The inventors claim that the perforations made by the largest projectile would close as readily as a hullet hole. The experiments cannot be considered satisfactory.

A new lamp has heen invented hy a French chemist which is intended to be used at sea, and is peculiarly adapted to the purpose hecause it cannot be extinguished hy wiud or water. It consists of a cylindrical vessel of tin, with a conical point, provided below with a tube six inches in length. The vessel is filled entirely with fragments of phosphide of calcium, and the tube soldered up air-tight, so that tho preparation can he kept many years without change. When the lamp is to he used the tip of the cone is to he cut off, and an opening made at the end of the narrow tube referred to, and the lamp inserted in a wooden float and thrown into the water. The water penetrates through the lower end of the tube, and comes into contact with the phosphide of calcinm, and is decomposed with the formation of phosphuretted hydrogen gas, which is developed in great quantity, and which, escaping through the open tube of the cone, becomes ignited and hurns in contact with the atmospheric air.

Improved Economy in Iron Manufacture.—The managers of the Cincinnati Railway Iron works, in which nine of Dank's puddling machines have been put in operation, have effected an important economy in working iron by melting the pigs in a cupola, and running the metal directly into the puddling machine. By this means, it is claimed a saving of one-half is secured in the time which would be required were the iron melted in the furnace attached to the puddler, and it is possible to dispose of two heats per hour in each furnace, running 500 lb. hlooms. A thorough acquaintance with the machine shows that light iron can thus be made ahout as readily as rails.

The Work of the Telegraph.—The new Society of Telegraph Engineers in London have commenced puhlishing a journal of the progress of telegraphy. The first number contains an interesting paper on automatic telegraphs. Without the automatic apparatus it would be impossible to perform all the work. From the central station in London as many as 400,000 words aro transmitted in a single night, and through five or six stations simultaneously, whereby it happens that the qnantity of matter telegraphed is eqnal to a thousand columns of the *Times!* In the working of the telegraph some curious facts have been observed. A message sent through land-lines and an undersea cable travels more qnickly towards the place which has the longer land-line than in the opposite direction. On wires stretched east and west the speed is decreased ahout noon, a fact due, it is thonght, to the diurnal variation in earth currents.

The following is the new process employed for making slate assume the appearance of marble, for decoratiug iuteriors. After heing properly out and trimmed, it is scoured with pumice stone, then rubhed with powdered pumice stone, and polished with felt. It is now ready to be transformed into marble. The slabs, having been painted with the gronnd-work color, are ready to dip. A vat containing water mixed with ox gali, on which the colors are floated, is at hand. A brueh is dipped in the colors and spriukled on the surface, then the water is fanned with a palm leaf and the hrush drawn through several times. The mixed paint spreads on the surface of the water like veining in marble, and the slab is then lowered until it touches the surface, when the floating color adheres to it; it is then pnt to dry. After the application of colors, aundry bakings and polishings finish the work. Thia marbleized slate is quite elegant, possessing sixteen times the strength of marble and scarcely distinguishahle from it.

Donkersley's Puddler.—Experiments with this puddler, in one of the works at Marquette, according to the *Mining Journal*, seem to promise snccess. A very fair quality of steel has been made in this pnddler, with metal direct from the hlast furnace, but not in such quantity as would seem to justify a claim that steel could he made with it at a profit. Aud a very fine grained, firm, tough quality of wrought iron has heen turned out of it, which seemed to require but little manipulation under the hammer to form it into blooms or hammered bar.

The enginos of the Cunard steamer Scotia, are of 5,000 horse-power, 100-inch cylinders, and 12-feet stroke; she burns 160 tons per day, and requires 1,900 tons for an Atlantic voyage. The new style of compound engines effects a saving of fifty per cent. in fuel; the owners of the Scotia, therefore, by suhstitnting the new style of engines for the old, would save 1,000 tons of coal per voyage, and add 1,000 tons to the cargo capacity of the vessel.

Another Monster Ship.—It is said that specifications are at present in the hands of several Clyde shipbuilders, for a vessel to be built for the National Steamship Company, of dimensions only second to the Great Eastern. Her length is to he 576 feet over all, and she is to be fifty feet heam and thirty-five feet in depth. It is expected that the great steamship will make the voyage from Liverpool to New York in seven days.

A new street-car has been constructed and put in operation hetween Ilion and Franklin, New York, propelled by steam, the engino occupying no more space than an ordinary cooking-stove, can he stopped when running six miles an hour in eight feet, uses one ton of coal to a thousand miles, and on a trial trip recently was propelled fifteen milea an hour.

In the course of a month or two there will he placed a line of very large and powerful steam tugs at both the entrances to the Straits of Magellan for the purpose of towing vessels through the straits, thus doing away with the difficult and often dangerous voyage round Cape Horn. The estimated cost of so towing a vessel is £200 to £250.

The result of experience with iron as a material for ship-building has not heen favorahle to it as a substitute for wood. Of the forty-two Atlantic steamers lost during the past thirty years, thirty-eight were of iron and only four of wood. Amongst coasting vessels an equally proportionate loss can be shown.

The Wisconsin Legislature did a wise thing dnring its last session in providing that all doors for ingress and egress to and from public school houses and other public buildings should open outwardly. It is to he hoped that similar action may be taken by the legislatures of other States during the coming winter sessions.

Staining Veneers.—Difficulty is often experienced in getting the coloring matter to penetrate the wood sufficiently. This may be obviated hy soaking the wood for 24 hours in a solution of caustic potash, and finally hoiling them for half an hour.

In the manufacture of percussion caps, if the fulminate of mercury is granulated and mixed in vacuo, explosions will not take place. It is also stated that a mixture of cyanuret of copper and chlorate of potassa can he suhstituted for the fulminate.

It is asserted that the diagonal-jointed hoilers are one-third stronger than those with longitudinal joints.

Stock Sales for Week Ending Oct. 24—S. F. Stock & Ex. Board.

NAMES OF COMPANIES.	Assess't	Shs. in ft.	FRIDAY. Shs	FRIDAY. Prices.	SATURDAY. Shs	SATURDAY. Prices.	MONDAY. Shs	MONDAY. Prices.	TUESDAY. Shs	TUESDAY. Prices.	WEDNESD'Y Shs	WEDNESD'Y Prices.	THURSDAY. Shs	THURSDAY. Prices.	Tot'l Sh's Sold.	Delinq't.
Adams Hill	*								220	1½					220	
Alpha	*	300	20	40	20	42			50	42	50	41½@42	15	41 @42	185	2
Alps	*	800	37½	4¾@ 4¾	120	4¾@ 4⅞	310	5 @ 5½	570	5⅝@ 6	579	5½@ 6	640	6 @ 6¼	2429	1¾
American Flag	$	2600	11½	340 16 @16½	100	15¾@16	15	15¾	90	15	195	14 @14½			740	
Amador Tun	$			200 8¾@ 8⅞	550	9			20	9½	230	9¼@ 9½	250	9½@ 9¾	1250	⅞
Arkansas	$			200 3¾					200	3¾@ 3½	200	3¾			600	
Arizona & Utah	*	1900	19½						200	1½@ 1¾	300	1½	50	1½	550	
Belcher	*	1040	10	315 88 @90			250	87½@90	1120	90 @92	30	91 @93	365	93 @97½	2080	7½
Baltimore Con	*				50	1⅞	15	2	200	2	80	2	20	2	365	
Bowery	$	1000	30	375 2	190	2	50	1¾	200	1¾@ 2	150	1¾@ 1¾			965	
Bacon	*															
Buckeye	*			100 3			30	3			5	2¾			135	
Best & Belcher	†	228	100													
Bellevue	†	8000	2½													
Belmont							15	5¼			200	4¾	450	4⅞@ 5	665	
Dhollar	*	2800	10	50 5¼		90 5⅜ @53	125	51 @5⅜	150	54 @57	110	55 @57	320	57 @56½	835	2½
Caledonia	*	5000	4	340 25 @26½	375	23⅝@25	525	23 @25	370	25¼@26	95	25 @26	800	27 @31	2558	4½
Cone. Virginia	*	1160	120¾	150 63 @65	70	64 @65	95	63 @63½	385	63½@66	115	62 @63	155	64 @65	970	
Confidence	*	130	192	115 9¾@10	10	10½	470	10¼@10⅝	995	11⅛@12	325	11⅜@12	950	11¾@12¼	2965	2¼
Crown Point	*	600	166⅔	405 114 @118	645	109 @112	215	112 @117	335	120 @127	10	119	255	117 @120	1865	2
Central	*	70	357													
Calaveras	†	3200	6¼													
Condor	$						265	1¾@ 1⅞	185	1½	50	1½	50	1¾	550	
Columbine																
Chapman	$	1900	10										60	1¾@ 1⅞	60	
Chief of the Hill	*	2800	30	510 8 @ 8¼	415	8 @ 8¼	260	7 @ 7½	290	7 @ 7¾	365	7¼	435	7¾@ 7½	2265	¾
Chief East Ex	$			150 3			265	2⅞@ 3	30	3					445	
Cedernbrg	†	1200	20			380 6¾@ 7	140	7 @ 7¼	10	6¾			330	7 @ 7¼	860	
Daney	*	2000	12		10		100	14	100	14	75	13¾			175	
Eureka Cons	*	2400	16	290 16¾@17	140	17 @17¼	185	17¼@17¾	240	17 @ 18	330	17¾@18¼	1245	18 @19	2490	2
Eureka	†	1680	12				100	14							100	
Exchequer	*	400	20			10 16½			10	17					20	
Eclipse	*	70	257	30 9½		10 10	70	11 @11½	80	11	60	11			250	
Empire Mill	*	75	16	45 8½		190 8¾ @9	1260	8¾@ 9	300	9 @ 9½	90	8¾	215	8¾@8¾	2100	1⅛
Excelsior	*	4500	3½													
Gould & Curry	*	1200	4		47	172 @ 176	5	175		89		47 180 @187	30	185 @187	218	
Golden Chariot	†	750	14½	40 12 @12½	115	10 @11	270	9 @10	450	9 @11	40	11 @12			915	
Gloha	†	1600	12½				50	1⅞			100	1½@ 1¾	200	1¾	350	
Con. Gold Hill	$		40								100	4½			100	
Hale & Norcross	*	400				30 69	315	69 @72½	50	76 @76½	85	73 @76	375	80 @83	855	
Huhn & Hnnt	$	3600	8½	355 6¼@ 6½	900	6 @ 6¾	2060	5¾@ 6	1365	5½@ 6	1830	6¼@ 6⅞	1100	6⅜@ 6¾	7610	
Hermes	$			50 8¾		80 7¾@ 8			25	9		25 8		180	470	¾
Ida Elmore	†	1300	17½						100	10	20			120	120	
Imperial	*	34	543⅞	1030 9 @ 9¼	845	9¼@ 9⅞	1440	9 @10	805	10 @10¼	340	9¾@10	290	9¾@ 9⅞	4750	⅝
Ingomar	$	1000	40	300 13⅜@ 1½	800	1¼@ 1½	200	1½	625	1 @ 1½			1150	1⅜@ 1½	3075	
Independent	†	1800	14													
Ivanhoe	$	600	5				300	1¼	100	1¼					400	
Julia	*	1000	15	50 6¼		750 5½@ 6	2335	5¼@ 5½	1880	5¾@ 5¾	935	4½@ 5⅞	1035	5½@ 6	7065	⅛
Justice	*	3000	7	50 7 @ 7¼	10	7			25	6¼			110	6¼@ 6½	195	¾
Kentuck	*	95	21						10	22@ 225	50	219 @ 225		2255	62	
Kentucky	$		20													
Kniokerhocker	*	1200	20	250 4½@34½			50	4½	165	4½@ 5	50	4½@ 4¾			555	
Mammoth	*	1800	1⅔						100	10	20				120	
Meadow Valley	$	113⅓	3915	283⅓@30	1630	28¾@30	945	27½@29	2650	27 @28⅔	935	27 @28½	2630	27½@28⅔	12805	1⅝
Mahogany	*	720									30	5	555	6 @ 6¼	585	
Mocking Bird																
McMahon																
Newark	$	800	12	150 3¾		360 3¾	90	3¾@ 4	25	3¾	263	3½	140	3⅝@ 3⅞	955	⅛
Ophir	*	1400	26⅔	200 53½@ 55		95 51 @52½	65	53 @54½	245	55 @56	145	53 @ 54	215	52 @54	965	1
O. H. Treasure	‡	800	10			50 4⅞									50	
Overman		12-0	12½	20 62			65	61 @62½	10	65	65	64 @65	20	63	180	6
Occidental	*	2800	10													
Pioche	$	1000	16⅔	70 16 @16¼		25 16½	110	16 @16¾			190	15½@16	55	14 @15	450	1¼
Pioche West	$		30													
Page & Panaca	$	2400		125 2¼		50 2¼	450	2¼@ 2⅜	105	2¼	750	2⅛@ 2⅜	185	2⅜@ 2½	1665	¼
Pea Vine	$	1000		50 80c		200 80c	200	75c@ 80c					200	80c	500	30c
Phœnix	*		7¼	410 4 @ 4½			110	3¾	470	3½@ 3⅞	600	3½@ 3¾	1950	3½@ 3¾	4140	¾
Raymond & Ely	$	4800	20	635 131@134	450	125 @126	395	124 @130	310	130@134	335	127 @ 130	160	129 @130	2225	4
Savage	*	800	40	75 94 @95		20 96		15 97	@99½	225	104@108	115	102 @ 106	115	104 @110	5 5	10
Seg. Belcher	*	160	7½	30 69 @70		5 66		20 86½@67½		20 70	@71			5 75		80	5
Sierra Nevada	*	9000	3	20 15¾@15¾			20	15¾			10	15½		255 15 @15¾		325	
Senator	*			225 1 @ 1⅛		200 1⅛		650 1¼@ 3⅜		457 1		300 1				1832	
Sucoor	*	7500	12½	25 3¼		80 2¼@ 3				65 3¾@ 4						170
Silver Bill			30½	300 7½		225 7¼@ 7½		83 7½		20 8		230 7¾@ 8		70 7½@ 7¾		930
South Oharlot	†	660														
Tremont		90	250													
Wash. & Oreole	$	200	150	50 3½		80 3½						100 4	25	4¾	255	1¼
Woodville		1400	20	500 3¾		400 3¾@ 3⅞				400 4 @ 4⅛		390 4 @ 4⅛	740	4⅛@ 4¼	2430	½
War Eagle	†	1000	10										250	5 @ 5¼	250	
Utah	†	200	10													
Yellow Jacket	*	1200	25	225 64½@67	240	66 @68	85	65 @68½	200	90 @93	410	92½@97	130	101 @107	1360	20
Yule Gravel	†	400	25													

NOTE.—†—California. *—Washoe. ‡White Pine. §—Ely Distric. ¶Bureka Distriot. ‖—Idaho. ¡—Nearly.†—Over.

S. F. Stock and Exchange Board.

THURSDAY, October 24th, 1872.

Stocks have only besn in modsrate demand this wssk and salss have as a gsneral thing been light. Scarcity of money has made scarcity of sales and ths volume of transactions has bssn lighter than for some time. Ths large number of assessments, both last month and this, exsrciss considerable influence on the markst. These assessmsnts occur more freqnently at this time of the ysar than any other, as preparations are made for winter. Moreover an unusual number of mines are now in courss of dsvelopment than herstofore. We shall soon begin to gst back the money in use for moving the crops, and may then look for an increase of intsrest in mining matters. The burning of the tunnel on the Virginia and Truckee Railroad will have a bad effect on the Washoe mines since it cuts of suppliss off timbsr and wood, and prevents shipmsnts of ores and supplies. The damage will be rspaired, howsver, as soon as possible.

On Friday, the markst was very dull with few salss. Saturday, it was no better. Mouday the market was unusually flat, and although prices were firm thsre was no businss done. Tuesday there was a marksd improvement, and prices were generally higher. Wsdnesday, prices still continusd to rise, although there was no material increase in business. To-day, stocks were in light dsmand, but prices were gsnsrally firm.

BELCHER.—A letter of the 19th says work has been rssumsd on the incline, and the ors chute on the 1100-foot lsvsl is completed, and as soon as the drift can be clsarsd and about 100 feet of track put down, evsrything will be in readinsss to hoist ore through their own shaft.

CROWN POINT.—Air connection with the east winze has been made and the 1300-foot level is now supplied with pure air. Ore looks well and assays $193.

SAVAGE.—During wesk ending Oct. 19, 1,012 tons of ore assaying $27.97 wsre extractsd; 997 tons wsre sent to mill and 400 tons rsmain on dump.

RAYMOND & ELY.—On the 18th, $32,129 were shipped and on the 21st $34,608; previous shipments in October were $166,664, making a total of $201,272; equal to $10,593.26 per day. Ths mills ars all running and the mine looks well.

PHŒNIX.—On ths 16th, 10 tons of bullion were shipped valusd at $4,991.70. Letter of ths 17th says that from Tussday at 6 P. M., to Wednesday, 6 P. M., the furnace turned out 21,878 pounds bullion averaging per ton, in gold and silver, $379.15—the bsst day's work ever done in the district with a single furnace. Shippsd on the 17th, 20,008 pounds bullion; value, $5,691.50. On the 18th 20,000 pounds of bullion were shipped, valued at $6,881.60. On the 20th and 21st $10,888,20 was shippsd.

EUREKA.—A clean up was made on ths 16th of six day's run with 15 stamps, which amountsd to 850 ounces of amalgam.

MINING SUMMARY.

THE following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

California.

ALPINE COUNTY.

M. & N. W. Co.—Monitor *Miner*, Oct. 12: Ths dam of the M. & N. W. is to bs thoroughly ovsrhauled and put in repair for winter.

Machinery for the hoisting works of Mr. Chalmers, to bs erected up Scaudinavian Cañon, arrived this wssk.

MACHINERY.—Alpine *Chronicle*, Oct. 12: Ths two hoisting works of ths Exchequsr and I X L mines will arrive to-day.

EXCHEQUER MILL.—The remodsling is progrsssing finely. The machinery arrived on Thursday.

CALAVERAS COUNTY.

ANGELS.—San Andreas *Citizen*, Oct. 19: The Big Mine is repairing the hoisting works and the pumps. In the meantime ths stamps are orushing ore for Doctor Hill. Work on the Stickler mine is progressing rapidly. The Co. will prosscute sinking of the shaft.

RAILROAD FLAT.—Mr. Sheldon, at the Wolverins, is busily sngagsd in putting in a large tank at ths 200 ft. level to drain the mine of surfacs water.

On ths Pstticoat they have stoppsd sinking, and started a level north and south from the shaft at a dspth of 450 ft. The Co. intend running the north level until they strike ths rich chimnsys known to exist some 800 ft. north of the present shaft.

At the Sandsrson, the work of sinking the shaft is being pnshed forward rapidly; a lot of sulphurets worked last week yielded $348 per ton.

MOSQUITO DIST.—Lewis, Fairchild & Co., have some 300 tous on the dump, and several thousand tons in sight in the mins. They are crushing 100 tons in Clark's mill which will pay very near $40 per ton, and have plsnty mors of the same sort on hand.

At the Good Hope they are taking out ors and driving work ahead.

At the San Busno the tunnel is being run ahead, and expect to strike the levsl svery day.

At ths Grasshopper they are taking out rich ore. A late crushing yielded $90 per ton.

INYO COUNTY.

THREE MONTHS.—Inyo *Independent*, Oct 12: From ths 27th of last June to the 30th of Sept. inclusivs, 22,402 bars of Cerro Gordo and O. L. S. L. Co.'s bullion, weighing 952 tons and valued at about $200 per ton, were put on teams for Los Angelss. At last accounts there were ssveral thousand tons more lying at ths furnaces awaiting shipment. This is from 3 furnaces, viz: Brady's, Belshaw's and the Swansea, or O. L. S. L. Co's.

STRUCK IT.—J. Chastine, on a rscent prospecting trip in the White Mts. discovered a ledge of galena, near Dser Crssk, 4 ft. in width, solid lead.

LEAD ORE.—It is stated that over 800 tons have been sxtractsd from the Union Cerro Gordo, within the past tsn months.

WAUCOBA.—Havilah *Miner*, Oct. 12: C. D. Bsgole showed us some silver ore specimens from Waucoba, which he estimatss will go from $100 to $1,000 per ton.

KERN COUNTY.

JOE WALKER.—Havilah *Miner*, Octobsr 12: The mine will be started up in full blast in about 6 weeks.

THE ST. JOHN—Now measurss 9 ft. at the bottom of the shaft, which is over 400 ft. in depth, with rock of unusual richnsss.

The ledgs of ths Bright Star has increased to 8 ft. in width.

Rumor has it that au extraordinary rich body of ore has been struok in the Sumner at Kernville.

SAN DIEGO COUNTY.

JULIAN DIST.—Los Angeles *News*, Oct. 12: There are 9 mines being profitably worked from which ore is extracted yielding from $80 to $200 per ton. Recently, Mr. Bicknsll crushed 100 tons of Golden Chariot ore, from which he extracted, by the Wilson process, $24,000 worth of gold. There is now lying on the dump of the Goldsn Chariot, rsady for orushing, a quantity of ore valued at $50,000. From 200 to 250 miners are at present smployesd in the dist. Thers are 9 qnartz mills at work; and the foundation of another one has been laid.

OUR MINING SHAREHOLDERS' DIRECTORY.

ASSESSMENTS.

Name of Co. Location.	Secretary. S.F.Office, Assm't.	Levied.	Delinq't.	Sale.
Alaska Con M. Co. Lyon Co., Nev.	G. R. Spinney, 320 California St. 25.	Sept. 3.	Oct. 7.	Oct. 28.
American Flag M. Co. Ely District.	Geo. R. Spinney, 320 California St. $2 00.	Sept. 2.	Oct. 8.	Nov. 1.
Atlantic & Pacific Con, M. Co. El Dorado Co.	A. Noel. 419 California St. 20.	Sep. 11.	Oct. 15.	Nov. 2.
Alpine G. M. & M. Co. Amador Co., Cal.	W. L. Ustick. 438 California St. $1.50.	Oct. 16.	Nov. 16.	Nov. 30.
ALTONA G. M. CO. Grass Valley, Cal.	David Wilder, Merchants' Ex. 10.	Oct. 3.	Nov. 2.	Nov. 25.*
AUBURN G. M. CO. Placer Co., Cal.	Geo. W. Dixon, corner Mont. & Cal. 25.	Sept. 13.	Oct. 14.	Nov. 6.
Bellevue M. Co. Placer Co., Cal.	T. F. Cronise. 438 California St. 75.	Oct. 12.	Nov. 13.	Nov. 30.
Bowery Cone. M. & M. Co. Ely Dist.	C. E Elliott. 419 California St. $1.	Sept. 17.	Oct. 24.	Nov. 10.
Caledonia S. M. Co. Storey Co., Nev.	R. Wegener. 414 California St. $2 00.	Sept. 11.	Oct. 16.	Nov. 6.
Cedarburg 1st N. Ex. Co. California.	J. N. Webster. 506 Montgomery St. 10.	Sept. 9.	Oct. 14.	Nov. 2.
Cedarburg, 1st S. Extension. California.	J. N. Webster, 506 Montgomery St. 4.	Sept. 11.	Oct. 12.	Nov. 12.
Chapman M. and M. Co. Ely Diet.	F. Swift. 415 Montgomery St. 50.	Sept. 16.	Oct. 24.	Nov. 15.
Cherokee Flat Bluer. Co. Butte Co., Cal.	H. Pichoir. 503 Washington St. $1 00.	Sept. 6.	Oct. 11	Oct. 29.
Condor M. Co. Ely District.	H. C. Kibbe. 419 California St. $1 00.	Sept. 12.	Oct. 23.	Nov. 13.
Consolidated Virginia. Washoe.	D. T. Baley. 401 California St. $4 00.	Sept. 26.	Nov. 1.	Nov. 21.
Cook & Geyer M. Co. Storey Co. Nev.	C. H. Fish. 419 California St. 50.	Sept. 4.	Oct. 8.	Oct. 28.
Deseret Con. M. Co. Uteh T.	J. L. King. 411 California St. 20.	Sept. 16.	Oct. 18.	Nov. 7.
El Dorado M. Co. Amador Co., Cal.	E. McFadden. Express building. 50.	Oct. —	Nov. 10.	Nov. 25.
Eliza M. & M. Co. Siskiyou Co., Cal.	T. F. Cronise. 438 California St. $1.	Oct. 11.	Oct. 12.	Nov. 28.
Emerald Hill M. Co. Utah.	F. Madge. Merchants' Exchange. 50.	Oct. 17.	Nov. 20.	Dec. 17.
Empire M. Co. Grass Valley.	S. Pinkham. 401 California St. $5 00.	Sept. 6.	Oct. 12.	Oct. 29.
Empire M. Co. I. T.	C. F Balcom. 426 Montgomery St. 50.	Aug. 5.	Sept. 6.	Sept. 30.
Empire G. & M. Co. Washoe.	W. E. Dean. 419 Cal. St. $1 00.	Oct. 3.	Nov. 10.	Dec. 2.
EXCELSIOR S. M. CO. Nye Co., Nev.	W. A. Kollmyer. 640 Washington St. 10.	Sept. 26.	Oct. 23.	Nov. 22
Golden Chariot M. Co. Idaho.	L. Kaplan. Merchants' Ex. $1 00.	Sept. 12.	Oct. 18.	Nov. 8.
Granite Tunnel M. Co. El Dorado Co., Cal.	W. G. Holmes. 443 California St. 6.	Oct. 1.	Nov. 5.	Nov. 18.
Greenville M. Co. Plumas Co., Cal.	H. C. Kibbe. 419 Cal. St. 50.	Oct. 1.	Nov. 5.	Nov. 26.
Hale & Norcross M. Co. Washoe.	J. F. Webster. 438 California St. $5.	Oct. 18.	Nov. 21.	Dec. 14.
Howard Hill G. M. Co. Nevada Co., Cal.	J. L. King. 411 California St. $1.	Oct. 23.	Nov. 26.	Dec. 16.
Imperial M. Co. Washoe.	W. E. Dean. 419 California St. $1 00.	Oct. 1.	Nov. 6.	Nov. 29.
Independent G. M. Co., Butte Co., Cal.	G. T. Grimes, 240 Montsomery St. 40.	Oct. 15.	Nov. 19.	Dec 10.
INDUS G. & S. M. Co. Virginia City, Sto. Co., Nev.	David Wilder 24 Merch'ts' Ex., Cal. St. 50.	Oct. 19.	Nov. 23.	Dec. 16.*
Justice M. Co. Washoe.	R. Wegener. 414 California St. $2 00.	Oct. 2.	Nov. 6.	Nov. 27.
Kentucky N. Co. Ely District.	J. P. Cavallier. 509 Cal. St. 50.	Oct. 4.	Nov. 9.	Nov. 13.
KINCAID FLAT M. OO. Tuolumne Co., Cal.	R. H. Cornell. 220 Clay St. $3.	Oct. 18.	Nov. 21.	Dec. 19.*
Knickerhocker M. Co. Storey Co., Nev.	Henry Boyle. Stevenson's Build'g. $1 00.	Oct. 7.	Nov. 9.	Nov. 28.
LADY FRANKLIN G. & S. M. CO. Cal.	J. S. Luty. 301 Montgomery St. 50.	Sept. 24.	Oct. 28.	Nov. 18.
LOUISE M. CO. incoln Co., Nev.	Wm. H. Watson. 302 Montg'ry St. 50.	Sept. 14.	Oct. 18.	Nov. 9.
Mahogany M. Co. Idaho.	T. J. Owens. Expreee Building. $2 00.	Sept. 25.	Nov. 4.	Nov. 20.
Minneeota G. & S. M. Co. Idaho.	Wm. Willis. 419 Cal. St. 50.	Sept. 4.	Oct. 12.	Nov. 2.
National M. Co. Nye Co. Nev.	B. B. Minor. 411½ California St. 50.	Sept. 26.	Oct. 28.	Nov. 18.
Newark S. M. Co. Ely District.	D. T. Bagley. 401 Cal. St. 75.	Sept. 24.	Oct. 30.	Nov. 23.
Newton Booth Con. M. Co. Ely Diet.	R. F. Scott. 314 Cal. St. 25.	Sept. 5.	Oct. 7.	Nov. 4.
NEVADA L. & M. CO. Elko Co., Nev.	Wm. H. Watson. 302 Montg'ry. St. 8.	Oct. 1.	Nov. 10.	Nov. 23.*
NOONDAY S. M. CO. White Pin. Nev.	Chas. H. Fish. 419 California St. 20.	Oct. 11.	Nov. 15.	Dec. 4.*
OHIO CONS. G. M. CO. Calaveras Co.	W. A. Knapp. 432 Montg'ry St. 10.	Sept. 24.	Nov. 2.	Nov. 23.*
O. H. Treasure M. Co. White Pine.	D. A. Jennings. 401 Cal. St. $1 50.	Oct. 5.	Nov. 15.	Nov. 23.
Ophir S. M. Co. Washoe.	E. F. Stone. Merchants' Exchange. $5.	Oct. 23.	Nov. 26.	Dec. 13.
Overman S. M. Co. Washoe.	W. W. Steteon. 414 Cal. St. $5 00.	Oct. 8.	Nov. 11.	Nov. 3.
Pacific Coal M. Co., Contra Costa Co., Cal.	A. Lachman. First and Market. $10.	Sept. 25.	Nov. 13.	Nov. 30.
Pacific Borax Co. Esmeralda Co.	E. Leubs. 507 Montgomery St. 20.	Sept. 5.	Oct. 7.	Oct. 31.
Pauper M. Co. Idaho.	J. L. King. 411 California St. 50.	Oct. 1.	Nov. 19.	Dec. 16.
Peavine S. M. Co. Ely District, Nev.	C. F. Balcom. 426 Montgomery. 25.	Oct. 11.	Nov. 20.	Dec. 17.
Peter Walter, M. Co. Placer Co., Cal.	T. J. Owens. Expreee Building. 50.	Oct. 21.	Nov. 26.	Dec. 17.
Pioneer M. Co. Washoe.	S. Phillips. 415 Montgomery St. 12½.	Oct. 18.	Nov. 18.	Dec. 6.
Placer G. M. Co. Placer Co., Cal.	C. W. R. King. 411 California St. 25.	Sept. 16.	Oct. 22.	Nov. 8.
POCAHONTAS G. M. Co. El Dorado Co.	D. A. Jennings. 401 Cal. St. 50.	Sept. 17.	Oct. 24.	Nov. 18.
Savage M. Co. Washoe.	E. B. Holmes. 401 Cal. St. $10 00.	Sept. 10.	Oct. 16.	Nov. 2.
Shipley M. & N. Co., Placer Co., Cal.	W. L. Ustick. 438 California St. $1.	Oct. 16.	Nov. 16.	Nov. 30.
SILVER SPRGUE M. Co. Kersarge Dist.	J. W. Clark. 418 Cal. St. $1 00.	Aug. 26.	Oct. 8.	Nov. 8.*
SILVER WAVE M. CO. White Pine.	J. W. Clark. 418 Cal. St. $1 00.	Sept. 21.	Oct. 26.	Nov. 25.*
Silver West Con. M. Co. Eureka District.	F. R. Bnnker. Montg'ry Block. 50.	Aug. 26.	Oct. 5.	Oct. 30.
South Chariot M. Co. Idaho.	J. L. King. 411 Cal. St. 50.	Sept. 4.	Oct. 12.	Nov. 4.
STAVE OF MAINE M. & M. Co. Amador Co., Cal.	H. B. Congdon. 306 Montgomery St. 5.	Oct. 17.	Nov. 26.	Dec. 18.*
Stickle M. Co. Calaveras Co. Cal.	T. B. Wingate. 318 Cal. St. $1 00.	Sept. 20.	Oct. 11.	Oct. 27.
Succor M. & M. Co. Washoe.	W. H. Watson. 302 Montg'ry St. $1 00.	Sept. 20.	Oct. 11.	Nov. 21.
Tecumseh G. S. & C.M.Co. Calaveras Co. Cal.	F. J. Herrman. 634 Washington St. 25.	Oct. 10.	Nov. 16.	Dec. 5.
TELLURIUM G. & S. M. CO. Amador Co., Cal	Wm. H. Soery. Cr. Clay & K'ny. $1 00.	Sept. 3.	Oct. 5.	Oct. 26*
Tehama Cone. Sch. M. Co.	W. W. Steteon. 414 Cal. St. $2 00.	Aug. 2.	Oct. 1.	Oct. 19.
Washington & Crsole M. Co. Ely District.	F. D. Cleary. Merchants' Ex. 50.	Sept. 5.	Nov. 11.	Nov. 11.
Yuha Gravel M. Co. Nevada Co., Cal.	J. A. Gordon. 108 Battery St. 25.	Sept. 17.	Oct. 21.	Nov. 11.

MEETINGS TO BE HELD.

Name of Co. Location.	Secretary. Office in S. F.	An'l or Sp'l.	Date.
Amador M. Co. Amador Co.	F. A. Hill. Express building.	Special.	Oct. 28.
Andes Co.	T. C. Sanborn. 329 Montgomery St.	Special.	Nov. 4.
Confidence M. Co. Washoe.	R. Wegener. 414 California St.	Annual.	Nov. 4.
Big Gottonwood Tunnel Co. Utah.	J. L. King, 411 California St.	Annual.	Nov. 4.
Bacon M. & M. Co. Washoe.	414 California St.	Special.	Nov. 19,
Hayden Hill M. Co.	Wm. H. Knight. 331 Montg'ry St.	Annual.	Nov. 9.
Heckeom M. Co.	L. Leorne. 313 Jackson St.	Special.	Oct. 26.
Omega Mining Co.	T. C. Sanborn. 329 Montgomery St.	Special.	Nov. 4.
St. Patrick M. Co. Placer Co., Cal.	D. A. Jennings. 414 California St.	Annual.	Oct. 30.
San Jose Con. M. Co. Ely District. Nev.	J. B. Applegate. 729 Montgomery St.	Annual.	Nov. 4.

LATEST DIVIDENDS—Within Three Months.

Name of Co. Location.	Secretary. Office in S. F.	Amount.	Payable.
Belcher M. Co. Washoe.	H. C. Kibbe. 419 California St.	$3.00.	Sept. 10
Black Diamond Coal Co. California.		½ per cent,	Oct. 1.
Crown Point G. & S. M. Co. Washoe.	C. E. Elliot. 419 California St.	$3 00,	July 5.
Eastport Coos Bay Coal. Oregon.	I. L. Pool. Merchants' Ex.	$5 00.	Oct. 12.
Keystone Quartz M. Co. California.	L. Veseria.	50.	July 10.
Mahogany G. & S. M. Co. Idaho.	T. J. Owens. 402 Mont'gry. St.	$1 50.	Aug. 7.
Meadow Valley M. Co. Ely Diet., Nev.	T. W. Colburn. 419 California St.	$1 00.	June 20
Raymond & Ely M. Co. Ely Diet., Nev.	A. J Moulder. 419 California St.	$7 00.	Oct. 10.
Pioche S. M. Co. Ely Diet., Nev.	C. E. Elliot. 419 California St.	$1 00.	Aug. 10

—* Advertised in this journal.

NEVADA COUNTY.

EUREKA.—G. V. *Union*, Oct. 20: This annual report shows bullion recsipts for the year to Sep. 30th $219,410; total recsipts, $223,922 65; expsnsss, $162,122 79; profits, $61,799 86, of which $20,000 was paid for dividends, cash on hand Oct. 1, 1872, $60,554 54. "There were 9,925 tons hoisted and 9,740 tons crushed. There ars upwards of 4,000 tons of good pay ore in sight.

In the bottom of the Roannaiss shaft (which is 68 ft. deep) there is a ledge 2¼ ft. wide, with perfect walls, but ths quartz is poor. This mine from Oct. 1st, 1865, to Oct. 1st, 1872, extracted $3,585,543 of bullion, and the net profits were $2,224,651.

REESE MINE.—Reese a few days ago in cutting for a drain struck an under ledge. He is getting good prospects from this, as high as $5 to a pan having bsen obtained.

ITEMS.—The Empire ledge continues rich with every appearance of permansnce. On the 15th inst. was brought to Delano's a brick, ths result of one week's run with 20 stamps, valued at $5,500. The Eureka sent off, on the 15th inst., gold bricks worth $15,500.

EUREKA.—Nsvada *Transcript*, Oct. 18: The Erie Co., is putting up nsw works and stronger machinery. Tbey havs a ledge from 10 to 20 ft. wide with exeellent rock, and are down 280 ft. the ledgs continually improving.

The Rising. Star, Devil's Cañon is bsing steadily worksd.

At Rocky Glsn mine, ths mill is running and the mine being worked.

THE BLUE GRAVEL MINE.—Placer *Herald*, Oct. 9: A powerful engins, pumps and hoisting works are at work, and developments are beginning to bs mads. The works are at the end of a tuunel 750 ft. long and 187 ft. below the surface. The inclins at this point has bsen sunk from the above point down beside the rim rock of the old channel to a depth of 60 ft. at which point they have struck splendid gravsl.

AUBUEN.—Placsr *Argus*, Oct. 18: The Auburn Co. have struck unusual riches. They are in 175-ft. level. About 9 days ago the wealth of the mine was uncased. Thsre is one solid wall of slate ledge. From the shaft the drift is in 60 ft. with an averags drift of ledge of over 3 ft. The Co. have between the 2 lower levels over 90 ft. of backs, and it is expected a crushing of over 100 tons will be taken out the prssent month.

SAN DIEGO COUNTY.

BULLION.—San Diego *Union*, Oct. 10: Bullion amounting to $1,130 was shipped to S. F. yesterday.

SIERRA COUNTY.

Hoo Canon Mine.—Downieville *Messenger*, Oct. 19: At present tailings from the old Lamping mill are being worked over with the most favorable results.

Buttes.—The Quartz Co. have commenced rebnilding their flume.

Quartz.—The owners of the Oro Qnartz Mine have struck a body of very good ore in their claim, and fitted n small mill for roducing it.

TUOLUMNE COUNTY.

Struck It.—Sonora *Independent*, Oct. 19: Whiting, Wilson, Gorham & Baule, on the old Ford Lead, Saw Mill Flat, struck another rich pocket. On Thursday and Friday of last week, they took out $1,500, and have taken out good wages ever since they struck the pocket before.

The Silver Mine—Taken np by Magruder, about 6 milee east of Sonora, ie turning ont splendidly. They are now engaged in sinking a shaft. The ore consists of lead, silver and gold, and assays $242 per tou silver.

They are down in the App 700 ft. and the character of the ore is very rich, with gold frequently preceptible. The Heslep hae a vein 7 to 9 ft. wide. The average milling rock is said to be $15 per ton.

Nevada.

ELKO COUNTY.

Cope.—Elko *Independent*, Oct. 12: The Hunter ia sunk 45 ft., the ledge nveraging from the top to the bottom of the shnft one foot in width. The rock is first quality and will mill $400 per ton, of which ore the Co. has about 20 tons on dump.

Schaher and O'Malley have struck a rich pocket between the El Dorado and Excelsior mines.

The Southern Light is about to have a crushing.

The Independence Co. has juet let a contract for the running of their adit level 100 ft. or to strike the lode.

The Excelsior ie being sunk below the adit level with speed. The ledge in the north shaft is 3 ft. wide with good pay ore, averaging $65 per ton.

EUREKA DISTRICT.

Bullion.—Enreka *Sentinel*, Octoher 13: W. F. & Co., shipped yeeterday, 6 hnrs valued nt $4,545.89.

Spring Valley.—The Murray ehowe a wide vein of fine ore, and hae 60 tons of high grade ore on dump. The Farrell and the Curtie & Co., each have on hand about 20 tone of ore. The Washington has plenty of good ore in sight. The North Star ehowe a wide vein of ore. The average value of this ore, ae judged from that which has previously been worked and from aseays, is about $300 per ton.

Cleaning Up.—The Lemon mill has stopped work for 2 or 3 daye to clean up. Its firet run since repaire have bsen made is entirely satisfactory to all.

Staike.—A mine which promiees to be very rich, was discovered on the 7th inst., ahout 4 miles from thie place, in a south-easterly direction.

Hannah.—This mine is ehowing a ledge of fine ore 14 ft in width. The perpendicular shaft ie down 250 ft, and a whim ie being put up for hoieting purposee.

Home Ticket.—The new tunnel is in about 125 ft, the face ehowing a large amount of iron interepersed with ore. There are near 700 tone of ore on dump, estimated to be worth on an nverago $75 per ton.

Phœnix Bullion.—The total produet of the new furnace hae averaged about $450 per ton. 10 tone of bullion are heing produced every 24 hours, or an aggregate yield of $4,500.

Coy Hill.—In the Paul Jones very rich ore has lately been found, containing a large amount of horn silver. The Lemon mill only a few days ago, returned $405 per ton for the first class ore, and $106 for the second clase. The ore from the other minee ie of lower grade, averaging about $70 per ton.

ELY DISTRICT.

Bullion.—Ely *Record*, Oct- 13: The bullion product for the week amonnts to $116,553.92.

Floral Mill.—It ie expsted that the mill will be finiehed by Dec. 1st.

Huhn & Hunt.—About 16 tons per day is being rnised. In the mine, drifting ie going on at hoth fnces of the 90 ft. level. Thie level ie in fine ore throughont, and ehows well as drifting proceede. A winze is being eunk from thie level, a short distance from the bottom of the shaft, and ehows ore of quite a high grade.

Poatland.—The tnunel hae been run through a vein fully 8 ft wide. A winze has been started on thie lead, and einking will be energetically carried on; 3 shifts of 5 men each are engaged on the worke.

Chief of the Hill.—Third winze from the tunnel level has been commenced. Winzee Noe. 1 and 2 are being sunk on the ledge. They show abundance of good ore, of which abont 10 tons per day is being extracted. The bullion yield for the week ie about $7,000.

American Flag.—The main incline is 312 ft. deep. At thie point a etation will be formed and levels run off. The easterly one ie already commenced and ie in about 6 or 8 ft. On the 260 ft. or 3d level winze ie being eunk from the west drift at a point about 105 ft.from the ehaft. Thie winze has reached a depth of 100 ft. and ehowe good ore all the way. In the easterly drift of this level a winze has been started about 106 ft.from the ehaft and ie about 14 or 15 ft. in depth. It showe good ore. Stoping between the eecond and third easterly levele is going on to a considerable extent.

Amador Tunnel—Attained 270 ft. The winze that is being snnk about 113 ft, from the mouth of the tunnel is 32 ft. deep. At the bottom it reveals a ledge of from 3 to 4 ft. in width. Two assays were made yesterday from ore taken from the winze which gave an avsrage of $1,000.

Paoe ann Panaca.—The work of siuking the ehaft is going on. It is now down fnlly 450 ft. The drift on the 400 ft. level is about 130 ft.and will he continued until it strikes the ledge.

Sunbeam.—The shaft ie down 210 ft. and still sinking. About 15 tons of ore is hrought to the surface daily. It is very rich, and will fully average $130 per ton.

Meadow Valley.—The working force has beeu reduced by nbout 100 men.

Excelsior.—The main workiug shaft is ahont 70 ft. in depth and will be sunk until it strikes the ledge. The incline has reached 200 ft. Stoping is going on in the 70 and 90 ft. levels.

Kinston.—Capt. Ketton hae received orders from the Bay to commence timhering the shaft. Hoisting machinery hns heen ordered.

Arkaneas.—The incline shaft hae reached 315 ft. The 120 ft. and 250 ft. levels are being opened, and excellent ore ie being found in both.

Gray Eagle.—A rich body of ore was struck on Friday last. It asssye high and there appears to be n large body of ore.

Pacific Tunnel.—This week 10 ft. has bsen added to the length of this tunnel.

Inoomar.—The contractors for sinking the main shaft have sunk about 24 ft. during the past week, giving a total depth of 450 ft.

Lillian Hall.—Work on the incline, which is 207 ft. deep, has been temporarily suspended. Drifting is going on in the 70 ft. weetern level and is in 46 ft. Yesterdny some ore was struck in this level which looked favorahle.

Mocking Bian.—The shaft is 125 ft. in depth and at the hottom shows some rich streaks or feedsre which are nnking into the ledge. Drifting is going on from the shaft for the purpose of cutting the vein.

Baltic.—The ore is improving in quantity and quality. The ledge occupiee the full width of the shaft—4 ft. The shaft is 85 ft. deep.

Kentucky.—The shaft is 380 ft. in depth. Drifting is being carried on at the 330 ft. level.

Jolly Traveler.—The vertical ehaft ie 100 ft. deep. Streake of ore are found at the bottom which are very rich.

Mazeppa.—Sinkiug the working shaft which ie 70 ft. deep.

HUMBOLDT.

Bullion. — Unionville *Silver State*, Oct. 9: Amount ehipped from the Arizona since our laet iesue, was $7,560.

White Cloud Dist. — Extensive deposite of copper ore have recently been discovered. The ore ie of a high grade.

Krom Concentrator. — The frame-work of the Co.'e huilding, in Star Cañon, ie nearly completed, and will be raieed next week.

Relief Dist.—The Batavia and Pacific ie looking better in the lower levele thau ever before. The "pay-streak" is wider and richer than it wae nenrer the surface. The Co. have several tone of shipping and a large quantity of milling ore on the dump.

Arizona and Manitowoo Mine. — An immense chamher of ore of a high grade hae recently heen developed in the Arizona. The ledge at this point is, on an average, 15 ft. wide, ae far as explored. In Manitowoc, as in the Arizona, there is plenty of ore in eight. A new tunnel ie being run in to atrike the ledge at a greater depth.

Sacramento Dist.—A few weeke ago we noticed the diecovery of a rich ledge. The owners have eunk a shaft fifty feet deep on it, nnd are still sinking. The vein ie from 15 to 20 inehes wide, and exceedingly rich.

REESE RIVER.

Bullion. — Reese River *Reveille*, Oct. 12: W. F. & Co., during Sept., ebipped from thie city 68 bars, weighing 6,895 lbe., and valued at $101,134.21. All except 3 were from the Manhattan mill.

Moaoan and Muncy. — Good ore continuee to come from the 300-ft. level, and the ledge looks firet rate.

South America.—Keeping the water out and doing eome prospect work.

Savannah. — The hoisting worke are completed and running, and the shaft ie being pnehed vigorously with three eight-hour shifte; 2 ledgee have been cut by the ehaft.

Lone Star.—Sinking an incline from the 127-ft. level, and getting firet-rate ore.

Isabella.—The Ogden incline is being pushed rapidly; good ore coming from the O'Connel ledge; new lease let on the Isabella ledge, 25 men at work.

King Alfred. — The large shaft is being sunk.

Grove Tunnel.—Kane & Ledolph, lessees, at the 200-ft. east level, have a fine ledge, are getting elegant ore, and have about 15 tons of high-grade ore on hand. Hopley & Co., also, have a lease ou the same level, and are getting fair ore. Canaley & Co. have a leaee in the 250-ft. level and have good ore in eight.

Whitlach Union. — Breasting in the ore-chamber continnes.

Oregon Shaft.—An increased quantity of ore ia being raieed.

Viaginia.—O'Kane ie driving ahead with the tunnel, which ie in about 300 ft.

Patriot.—The mine is in fine condition and sending up considerable quantities of good ore.

Stonewall.—Getting some very good ore.

Belmont—Monitor Co.—Driving tunnel No. 2 with 3 ehifte of men. Taking out considerable fine ore from south incline. The Monitor mill machinery is nearly all placed. Working on mines and mill 60 men.

El Dorado Co.—Hsve jnst received three large losds more of machinery.

WASHOE.

American Flat.—Virginia *Enterprise*, Oct. 17: A good deal of prospecting is going on. The great strikee made in the Crown Point and Belcher have caused a resumption of work on many of the hest locatious, which is now heing carried on with commendable vigor. The Knickerbocker, Arizona and Utnh, and the Tiger Cos. are all at work.

Summary.—Gold Hill *News*, Oct. 19: Savage.—Daily yield 160 tons worth $28 per ton. The incline is down 205 ft. below the 1500-ft. level, in fnir sinking ground. The connection ie completed between the main south drift of the 1500-ft. level and the works of the Hale & Norcroee, giving a fine circulation of good air. The ore stopss on the 1500-ft. level are opening up well, with an improvement in the qnality of the ore. The body of ore on the 500-ft. level of the old works is opening out in width to the southward.

Julia.—Assays last week ran as high as $100 per ton. The 800-ft. level looks finely. The frame of the new hoisting works buildiug is up and partly inclosed.

Silver Hill.—The advancement downward of the main shaft is continued. The vein penetrated hy this opening is well defined, and consiste of quartz of a very promising appenrance. On the first level the main adit is run westward. It has cut during the past week through several veins of medium grade.

Utah.—The new shaft is sunk over 200 ft. The old adit ie reopened nnd cleaned out for a considerable distance north and west from the east wall. The exploring drifts at this depth are found to be of greater extent than was anticipated.

Crown Point.—The ore hreasts and stopes of the 1100 and 1200-ft. levels are holding out splendidly. The ventilation of the 1300-ft. level heing good, cross-cutting is actively developing the fine body of ore at that point. Cross-cutting at the 1200-ft level, 45 ft. from the Belcher line, shows the ore vein to be 140 ft. or more in width.

Hale & Noacross.—The increase of the depth is gradual. The yield of ore from all the levels approximate 120 tons daily.

Kentuck.—Daily yield reduced to 30 tons, keeping one mill running. The drift hstween the 400 and 500 ft. levele ie likely to open out a considerable amount of ore. Cross-cutting and drifting at the 1100 ft. level is vigorously heing prosecuted.

Con. Virginia.—The main drift on the 1167-ft. level is pushed vigorously ahead, the face in hard, blasting porphyry. Prospecting on the 500 ft. level is prosecuted vigorously. The shaft is being cleaned out and prepared for the work of sinking.

Belcher. — Daily yield 200 tons from the 1000 and 1100 ft. levels. The ore breaets and etopee in these levels continue looking and yielding splendidly.

Occidental.—The contract for running the main adit 300 ft. is completed.

Imperial-Empire.—The surface work for the new pumping machinery is progreseing rapidly. The south drift on the 1700-ft. level is heing pushed rapidly ahead.

Insuance.—The fine hody of ore fonnd last week on the north drift, holds out and improvee, and it hns also been etruck in the bottom of the shaft.

Jacoa Little. — Considerable quantitiee of free gold were found in the ore extracted during the week, and the vein looke more promising than ever. The lower tunnel ie in 60 feet.

Yellow Jacket.—Daily yield 20 tons from the old levels. Cross-cutting at the 1,300 ft. level. The new pump machinery ie completed and ready for aervice.

Overman.—The surface work for the new machinery is fast drawing to completion.

Chollar-Potosi.—Daily yield 170 tone, worth $31 per ton. Repairing the ehaft will eoon be finished. The eurface machinery work ie nearly completed. The Belvidere, Blue Wing and other ore-producing sections are looking well.

Baltimore.—The new plunger pump wae completed in ite position yesterday, since which time it bas worked well.

Sierra Nevada.—The prospecting drifts weet on the 500-ft. level are pushed steadily ahead with fair expectatione. The mill ie kept eteadily running on ore from the upper and middle portions of the mine.

Buckeye.—The fine body of ore developed at the 375-ft. level showe better as further penetrated.

Daney.—Maiu shaft down 83 ft. below the 600-ft. level. The bottom of the shaft ie in very promieing looking veiu matter.

Woodville.—Daily yield 10 tons of high grade ore. The new hoisting worke are fast approaching completion.

Knickebaocker.—The drift at tbe 400-ft. level is in 224 ft. Indicatione favorable, but rock hard. Work progressing well.

WHITE PINE.

Bullion.—White Pine *News*, Oct. 12: The shipment from White Pine, during the past week, wae $15,359.19.

Treasure Hill Mines—Eberhardt & Aurora Co.'s Mines.—The Eberhardt and Blue Bell shafts are sinking. In the Ridsdale and De Pass chambers are drifting from the bottom of the Risdale shaft to connect with the South Aurora tunnel, which ie expected to be made in a few days, and one wagon load of ore ie shipped to the Big Smoky mill daily. Working in the South chamber from the Lady's chamber, the ore being of a high grade.

Beecher Cons.—The ore in the old Blasdel works continues to hold out, and the regular shipment of rock to mill is daily made. In the Beecher works it is supposed a body of ore has been struck.

O. H. Treasure.—The various workings are looking well. The Wheeler tunnel is being pushed ahead in the same spar and vein matter, which is dipping downward.

Sunbeam.—Continue sinking in the Moscow shaft, and are down about 90 ft. where ore of a high grade hae been struck in several places.

East Shenoyoan.—A drift is heing pushed ahead to form a connection with the southwest drift, with favorable indicntions of getting ore.

Silver Plate.—Running in the tunnel, which is about 50 ft. deep, in good ore all the way. The mine is looking well. Considerable ore on dump.

Outside Dists.—Schell Creek.—Work on the Tehama Co.'e 20-stamp mill ie being pushed, and it will be completed ahout the middle of next month. The DeMill miue is showing a large body of good ore, and improving daily in quality and quantity.

Robinson.—The minee are looking well and considerable work done to develop them.

New Mines.—The new mines, near Rohinson, are steadily improving. The Emma is tnking out good ore of a high-grade. The Troy, the first extensiou on the Hays, has struck a body of high-grade ore in the shaft at a depth of 28 ft.

Mills—Big Smoky.—Running on ore from the Eberhardt & Aurora Co.'s mines.

Manhattan.—Running steadily on ore from the Beecher Cons.

Tailing Mill.—This mill below Shermantown, started np last week on tailings.

Schell Creek.—Schell Creek *Prospect*, Oct. 12: McMahon.—The shaft is down about 80 ft. below croppings showing at the bottom ore of high grade. There are 3 shifts at work. The tunuel is in 69 ft. the face showing 4 ft. wide of vein matter indicating the presence of a new lode,

Summit.—Work was discontinued on Monday for a short while only.

Jupiter—Being worked steadily, and looks better every day. The shaft is down some 50 ft. ehowing good milling ore.

Kavanagh Tunnel.—Is in 92 ft. in decomposed qnartz.

Tehama.—Working a large force daily. The different shafts, tunnele, etc., are being put through faet. The mine ie looking better ae work progreeees, ore of good quality being extracted.

Schell Creek.—Tunnel in 225 ft., passed through etrata of quartz in the middle of the week. Work on croppings progreesing. Some ore being extracted. Working 3 shifts daily.

Albert.—Running tunnel which ie in about 56 ft., taking out ore.

Queen Sprinos.—Labross Tunnel.—Tunnel being run steadily is in 190 ft. showing indicatione of soon striking ore. Two shifts at work every day.

Nutmeg.—In the wide open cut ore of fine qunlity can be seen.

Citizen.—The ore is of the finest quality.

San Francisco.—Being worked every day; ehaft down about 40 ft. showing well at the bottom. There is considerable ore on dump.

Arizona.

Ore.—Prescott *Miner*, Oct. 5: A great deal of high grade ore has recently been ehipped to S. F. from Mohave nnd Yuma Countiee, and late news from Wallapai, Castle Dome and other leading diets. attest that more is being raised from over a dozen minee.

Colorado.

Boulder Co.—Colorado Springe *Out West*, Oct. 7: The Bonlder Co. Coral, Mammoth, Sovereign People, and Cardinal are heing worked with eatisfactory resulte.

Havens & Bottleson are drifting on the Sherman lode and taking out about 5 tons per day of ore, but little inferior to the Caribon ore.

Six eilver bricks, the product of the Caribou, passed throngh a few days eince. Their value was about $10,000.

Montana.

Shipments.—Virginia *Montanian*, Oct. 10: The two banking housee of Virginia, on Tuesday ehipped 1,250 ozs. of gold ($22,000).

Lincoln Gulch.—Deer Lodge *Independent*, Oct. 12: There are 10 companiee working with good reeults. Enoch Johns & Co. of the Lincoln Drain Co., are averaging $15 per day to the man and they have ground enough to last for years.

Utah.

Parley's Park.—Cor. S. L. *Tribune*, Oct. 14: There are about 500 men prospecting and mining in the hille east of the Cottonwoods.

Hurst and Chambere hae erected eubetantial winter quartere for abont 25 men, running in 8 hour ehifts npon the Ontario. They have a shaft down 75 ft. ehowing a continuous vein of rich, free milling ore 3 ft. in width. They have a large amount of high grade ore on dump.

One mile to the south-west of the Flagstaff, is a group of ledgee of which very little notice has yet been taken. Around them there is an abundance of low grade rock, enough to keep a mill constantly supplied for years. Wood and water are plentiful and convenient.

Pears.—C. W. Pomeroy, from his orchard at San José, has sent us a box of delicions pears, He will please accept our thsnks.

Natural History of the Animal Kingdom.

While Professor Agassiz wss iu this city he delivered a lecture hefore the California Acsdemy of Sciences, a synopsis of which we gsve in our issue of Sept. 28th, at the same time promising to give it in full as soon as the diagrams oould he prepared to accompsny it. The Professor's slightly foreign accent and construction of sentences ie suggested hy the literal transcript from the short-hand notes of Amos Bowman. The cuts will he found on p. 265. After a few general remarks, the Professor took up the subject of the "Natural History of the Animal Kingdom" as that with which he was most familiar. He said :

As it is generally understood, the study of this subject consists in being made familiar with the variety of animals which inhabit the surface of our globe, with their mode of life, with their uses and purposes, with a sketch of their relations to one another. But now-a-days the efforts of naturalists go far beyond that. We aim at nothiug less than understanding how they came to be called into existence. What are their relations to one another, not only, but to the world on which they live and to the oause from which they rise? And it is not to be wondered at that upon dealing with such a comprehensive subject, opinions should vary, and there should be

Mighty Conflicts

Among the most earnest and devoted students of uature. Do you not disagree in your deliberations concerning the welfare of your fellowmen? Why should we, who are dealiug with subjects perhaps of greater difficulty—certainly, with subjects which have attracted attention for a shorter time—to be at once agreed on every point? We have no greater power with which to treat these subjects than an able lawyer has, dealing with his case, than a physician has, dealing with his patient,· than a divine has, dealing with questions of a greater import to every human sonl. And these powers being limited, it is natural that our results should frequently be conflicting, but the more conflicting they are, the more likely are we to be stimulated to renewed efforts and to greater and more comprehensive application.

I will not attempt to define animal life. I will not attempt to compare animal life with vegetable life. I will only at once proceed to show you what we kuow generally concerning

Resemblances Among Animals,

And on what these resembances are founded, that yon may realize how it is possible for a naturalist to become familiar with this host of living beings which inhabit the surface of the globe. There are several hundred thousands of them, several hundred thousand different kinds of them, inhabiting the surface of the globe, and yet all these hosts are built on a few patterns so simple, so easily understood, that every child ought now to know how to distinguish these patterns, these plans of structure, with the same readiness with which it defines a square or circle. And there is no more difficulty ahout it than there is in nnderstanding the most elementary facts of geometry or arithmetic. The only difficulty lies in the fact that

There are no Teachers;

That the community lacks teachers in this department; aud wherever there are a few educated, they are at once swallowed up by the numerous institutions of learning which are organizing everywhere. And we cannot educate a sufficient number of them, for the simple reason that there are other walks in life which are more promising in the rewards they secure to their devotees. So science is always behindhand, and yet it is she who furnishes the primary material for all the progress in modern times.

But to return to the animal kingdom, this great diversity of thought from man through all the range of quadrupeds, birds, reptiles, fishes, shells, crabs and insects down to the simplest polyps, their immense diversity as to number can really be brought down to four simple plans, and these plsns may be expressed in formulæ which are of the simplest nature.

Suppose I take for the first [walking to the black-board] animals which go by the name of

Radiates,

Their organization corresponding to the' idea involved in that name. All their parts stand to a central axis, like the rays to a centre. Nothing will give a better idea of one of them than a star fish, where we have an animal provided with a mouth at the center, having a large sack into which that mouth leads, and from it a number of sacks, extendiug into those rays, at the end of which there is to eaoh one an eye, a ring of nerve around the mouth, which sends a thread to each one of those rays a number of little bags, which terminate in euckers, hy which the animal is set in motion; by which you oan see a repetition of identical parts around the common center. And this idea of radiation, assumes the most diversified forms; whether it be that sea urchin, in which we have the same general arrangements again in which only the form is that of a sphere instead of being that of a star; or that of a polyp, in which we have something of a cylindrical body with a number of rays around the summit, around the mouth the same opening into a sack which communicates with the same cavity; or be it a jelly fish, which has a secular disc and central cavity with channels extending to the periphery, and communicating with a circular ring and other appendages hsnging down upon the margin.

You see everywhere a repetition of the ssme idea; radiation around the center and a repetition of the identical psrts aronnd a vertical axis. And the number of these animsls is about as great as thst of any type of animals, but they are all aquatic; most of them with very few exceptions marine, and therefore less known to the cssual observer. We distinguish smong them

Three Classes,

Polyps, in which the body is a simple bag, as I have represented here; that of the jelly fishes *acalephæ*, in which we have a central cavity with tuhes radiating from it; and that of the star fishes, or sea-urchins, or echinoderms in which there is an internal cavity and external envelope. So you see here a regular gradation amongst these three classes; the *polyps*, the lowest; the *acalephæ*, next; the *echinoderms*, highest. And the fact that they keep this gradation can be rendered more plain by taking the time to enter into details of their structure. To show for instance that we have a well marked nervous system in star fishes and polyps, we have only to observe that the locomotive organs are at the same time organs of digestion, in fact performing all the functions necessary for the maiutenance of life. While in the next higher class, the *acalephæ*, we have already some division of labor in the fact that there is a central cavity in which the food is received and elaborated, and from which it circulates into those tubes. through the whole of the system, to return to a center, while the refuse matter is thrown out through the same cavity in which the food was introduced. Now in those others, the star fishes, the sea urchins, the isolation of the nervous system, their position in a central cavity surrounded by a distinct envelope, show still a higher position. I may therefore say that in that type of animals in which radiation is the fundamental idea, we have three classes in which a different application of organs shows the relative standing; and that this may not be overlooked as I proceed in my argument I will write down these few subdivisions here. [Advancing to the board and writing.]

Radiates, with three classes, being *polyps acalephs* and *echinoderms*.

All these animals are scattered over the whole surface of the globe, and may be found from pole to pole in all latitudes along onr shors, and in the depths of the ocean, swimming in medium depths or scattered over the surface of the sea. The next group, which has a very different coustitution, is that of the

Mollusks;

They are soft animals; may be protected by a shelly envelope, forming a sort of bag in which all the organs are contaiued; of which our oyster gives a very good example, and in which the organization is about such. Suppose we have here an oyster from which one of the shells are removed; we see here a ligament by by which two shells are united with one another —if you look in a transverse section—that being the cavity occupied by the fleshy part of the oyster; there is a large fleshy mass which is commonly called the eye and muscle; a fleshy bundle which unites the two bands to one another, moving into one another; a skin lying in the shell, all over, and by the secretion of which the shell itself is formed. Suppose that I lift it, you shall see that under it will have formed another layer, the margin of which is fringed all over. It has a respiratory organ which extends all around; of these there are two, one within the other; and within this upper part we have the digestive cavity with its appendages, the liver surrounding the stomach, a heart, which is placed above the intestines sometimes surrouding it, and the reproductive parts filling the remainder of the cavity. And in all of these

Kinds of Structure

We have also three gradations, the sample of which is that which I have represented here in the case of the shell, which we call bivalve *acephalæ* from the fact that there is no region in which a distinct head could be recognized. But the moment we proceed to a higher grade we find there is developed below a fleshy mass; that in front there are appendages around the mouth, extending forwards and receding upwards; that the shell is united in one simple, continuous shield and that under it those parts which hang loose below, are drawn up, and sealed on the general envelope. And we rise as it were to the condition which we have in the snail, in which, in a snail coiled up, all those parts are now enclosed, and in which this fleshy mass represents the organs mentioned, and there are appendages around the head and these feelers extend forward, on the summit of which msy he seen eyes. There is no organ there which we have not here; it is only raiscd to a higher condition of existence. If we add to that the state of things which we observe in the cuttle fish the difference consists mainly in the fact that these two feelers are reduced to a lower position, but the eyes are largely developed and the body is separated from the rest by a constriction here; on the sides we have two wing-like appendages; the food is transfused into a sort of syphon with an opening through which the water may be ejected so as to help direct the course of the animal; and around the mouth a uumber of arm-like appendages which serve as organs of locomotion and as organs for the apprehension of food. This is what we call squids, cuttle-fish and the like, and which are occasionally called in this neighborhood, I uuderstand, "devil fish."

Now these are the three groups of *Mollusks*, the three clsses, *acephalæ* or *bivalve*, *gasteropods*, the *encephalopods (?)* and *cephalopods* or squids and the like.

Why I aim at reproducing these details you will see presently. The next kind is that of the

Articulates.

The name *mollusks* applies well to these animals, you perceive, from the fsct thst most of them have a very soft body, even though they are protected hy a hard shell.

The third type is that of the *articulates*; and here we hsve a totally different idea and body, in the structure of these animals. The body is a cylinder divided by transverse ridges, in which are a numher of rings, movahle one upon the other—such are all the worms—for these rings are combined in such a manner as to form two distinct regions of the body; an anterior one to which there are distinct locomotive appendages; and a posterior one which is more distinctly articulated than the other, with fins, (feet) underneath. The type is that of the lobster or shrimp, and the like. And the third representative of this class in which the body is divided into three regions: this includes the insects. Now yon see at once here again, (see cuts), a complication of structure from the more simple uniform cylindrical body of the worm, and the cylindrical body of the shrimp or crab, in which the division of the body into two regions is distinct, while in the worm's, wherever there are locomotive appendages, they are all alike.

In the insect kind there are three divisions of the body well marked; the first representing a sort of head, the middle a sort of chest, and the hind one a sort of abdominal region in which the articulations are distinct. Here again I may mark down three kinds; the worms, *crustaceae* and insects. Without going any further you perceive at once that it is a totally different idea which is embodied in these animals, in the *articulates*, from that which is embodied in the *radiates*, not to speak of the *mollusks*, the organization of which is perhaps not so easily nnderstood without a more extensive acquaintance with

Comparative Anatomy.

To take the *radiates* by themselves and compare them with the *articulates*, you see at once how totally distinct the plan of structure of the two groups of animals are; aud that their original ideas which are at the foundation of all these, are perfectly plain to any one who chooses to analyze these things. It is not a mere fact that there are worms here, and that there are insects there, and *crustaceae* there, and that these animals are scattered all over the globe. They are connected with one another by an idea which the human mind is capable of comprehending, of reducing to the simplest formula, to a formula so simple that it may be understood by a child.

And now let us look at the other animals. How does man stand in nature? What are his relations to the other living beings which exist on earth by his side?

That position is easily determined, and that not from any very extensive acquaintance with the subject. You can reduce man to the

Structure of a Fish

And you will find he has nothing but what the fish has. And there is a gradation from the fish up to man which is perfectly simple. Here we have a backbone, which is the fonndation of the whole structure. Upon the backbone rise spines which extend the whole length of the back; under the backbone are other spines which extend all along the lower side of the body, [See cuts.] and that is surrounded by flesh; and upon the flesh is a distinct skin. Now let us examine what are the relations of these parts in a transverse section. [See cuts.] If we cut a fish across in that way we find that the hackbone forms a solid center here, that these spines constitute an arch above; that that arch embraces a cavity in which is the spinal marrow; that another arch below surrounds the intestines, and that the flesh which is attached to these spines occnpies the whole ontside of the fish.

Whether we make a section through the head or through the tail, we shall find the same elements; only in the head, that cavity which is above the prolongation of the backbone is enlarged and represents the cavity of the skull; the spinal marrow all along here swells and enlarges in the head into a brain, and in the lower cavity where we have under the tail merely a blood vessel, we find that in the abdominal regions we have the intestines; and in the higher animals of that type we have the chest in which the respiratory organs and the heart are separated from the intestines. But it is everywhere the same thing, repeated in all its various combinations fram the fish up to man. For we need only to look at the embryo, that is, at the young, before it has acquired its full size; we find that the first then has more of these appendages which we call fins, but tapers gradually to a single tail. We find that it has none of those other appendages which we call fins slong the chest; and we find that in order to raise the fish to the condition of the reptile, we have only to mark a slight contraction between the head and the trunk, and to raise the head slightly npwards so that the head shall no longer be on a level with the rest of the body, and to secure for the limbs that kind of transformation, which, instead of presenting a uumber or developed fingers, will have single fingers, say three or four or five, spaced a little further apart one from the other.

And thus we are led to the condition of the

Lower Reptiles,

The salamander or lizsrd. And if we widen the hody or shorten it we srrive at the condition of the turtle. If, instesd of allowing the body to remsin horizontal, as it is here (see cuts), and the tail to have that prominent elongation curtailed to a short termination of the vertbræ, and we give legs and raise the anterior part of the body on this end of the legs, trsnsform the posterior from this condition into that, we hsve the brute; and the relation of brute and reptile, as those of reptiles and fish, are so simple that you need not have a large museum to show all these grsdstions. They psss from one to another; and in the condition of quadrupeds, when we come to man, the only difference is that the head predominates, and the limhs, stomach and other organs are kept in subordination or in the control of the head, of the brain, of the intelligence; so that we may truly say that man is only a higher organized and intellectnal creature, built upon the plan which is already indicated in the condition of the fish. And this is one of the general results of modern investigation in the comparison of these different classes of animals.

The type of these animals are called *vertebræ*, and the type *vertebrates* embraces four. It may be a larger number of classes, but for the purposes I have now before me, I say four; fishes, reptiles, birds and mammalia, including man. And now to repeat what I said at the beginning; all animals fonnd on the surface of the earth, without exception, find a ready place in one of these four types; among one of these four types. And on closer scrutiny all are found to belong to one or the other of these thirteen classes.

Now is it not worth while to learn that kind of animal geometry which teaches us at once to recognize under the most diversified forms, beings so closely akin that we may analyze them, and reduce them to their simplest formula? But their relations are still more intimate than would appear from this, and are linked together by a more all-pervading thought than they appear from this very rapid sketch, for if we examine their

Mode of Growth

We are struck with the fact that each one of these types which is perpetuated by the reproduction of young akin to themselves, passes during its growth throngh a succession of changes which are identical to the conditions we observe among those that have reached their perfect condition in their relative standing.

That may not be quite intelligible. Let me analyze my statement more fully. Here I have spoken of animals in their full growth, in their adult state. I have represented them as compared with one another. I have compared the *potyp*, which occupies the lowest position among the *radiates*, with the jelly fishes and *acalephs*, which occupy a higher position, and that of the sea urchins and star fishes which occupy a still higher position. I have shown you that all these three classes are built on the plan of *radiates*. The difference is chiefly in the complication of their structure. The same obtains for the *mollusks*. The same is very clear among the *articulates*. You have seen that between a worm and a *crustacean*, the difference is not one of plan, but it is one of complication. So it is with insects—only a difference of complication—and when you get to the vertebrates it is the same. In the fish we find the germs of mankind, and we find that between fish and man we have sn intermediate space filled by the reptiles, birds and quadrupeds. And all that is as studied among animals in their full grown condition. Now let ns examine the

Young of all These Animals,

Or at least some examples of them—that I may not trsspass upon your time or attempt what is impossible to give in an hour's time. Let us examine, for instance, the young of some *echinoderm*, of some sea urchin or of some star fish—that will be the most easily appreciated example. We have a figure of one of them. [See cuts.] Now the young of some of these star fishes, instead of being what I have represented them, first is a little *polyp*-like animal attsched to the ground by a stalk, having the stalk divided by transverse articulations, and presenting on the summit a number of rays surrounding a central cavity. When that animal grows to a large size, when its anterior organs have acquired a higher degree of complication, that star separates from the stalk, and the stalk vanishes and dries up, and we have then a free star fish. Or, let us say a

Jelly Fish.

The jelly fish in its perfect condition is a gelatinous disk with a number of appendages all around the disk and a central cavity with tubes radiating to the margin, and a nnmber of larger appendages around the mouth throngh which the food is brought in. That animal swims freely in the water. When it lays its eggs, those eggs are for a while little oblong bodies swimming freely in the water. After a while they select a place on which they become attached, and when they become attached they enlarge and expand into a clod-shaped body, and that clod-shaped body is itself enlarged along the margins so as to have as it were 4 horns around each summit. And presently that clod-shaped body grows into a more cylindrical or longer mass or stem, and upon the summit of these clod-shaped bodies have grown feelers; and instead of four, we may have 8 or 16 or a larger number; and in the center a depression is formed which enlarges into a

[Continued on page 265.]

Useful Information.

Popular Fallacies.

Two hundred years ago, that quaint old writor, Sir Thomas Browne, filled two large volumes with an account of what he conceived to be "Vulgar Errors" — *Pseudodoxia Epidemica* — and although modern science hae done much to diffueo sonnd knowledge in regard to tho phenomena around ns, yet popnlar fallacies have not, as yet, quite disappeared. Even our text-hooke of popular scienco, and many of our so-called scientific papers, continue to propagate and perpetuate mistakes which may well bo classed with the "vulgar errors" of Dr. Browno.

Tho Hair Not Tubular.

Thus nothing is more common than to hear of the tubular character of hair; indeed, almost every ono that we meet will, if asked, tell us that the hairs of our head are very fine tubes. And yet every hair is a good eolid cylinder—a fact which has been puhlished hundrede of times, hut which seeme to have no effect upon the popular helief. It ie true that a hair, whcn examinod under the microscope, looke something like a tube; but then eo does a eolid metaltic wire—a fino needle, for example. That which givo rise to the tubular appearance is simply the bright line which is always seen on every cylinder—a stove-pipe for example, or even a common hlack-lead pencil. When we take the hair, however, and having cut a slice off the end, examine tbis slice, we find that it is not a ring, as it would be if cut from the end of a tube; hut a solid disk.

Jupiler's Moons.

Another singular idea which has gained very general ground, is, that the moons of Jupiter can bo scen in a looking-glase; and if, some bright night, we try the experiment, we shall actually see Jupiter in the looking-glaes, accompanied hy a very faiut star, which constantly maintains the same distance from the planet. Further examination will eliow ns that every bright star preeents the same appearanco; and if we reflect a little upon the phenomenon, we shall eee that the eo-called moon is only the faint image of the star or planet reflected from the surface of the glase, while the bright image reflected from the surface of the mercury is what we call the star itself. A lamp or candle held hefore a thick mirror will preeent preciaely the same appearance. Simple thongh the explanatiou be, however, there are few errors that have taken a deeper hold on the minds of the pseudo-scientific than this.

Tha Sun Drawing Water.

Amongst popular fallaciee, a prominent place must bo given to those which arise from the actual deception of the senses; for neither our eyesight nor our sense of touch ie to be absolutely depended upon. Thus, the beantiful phenomenon known as "the eun drawing water" is caused simply hy tho rays of the sun piercing a rift in the clouds, and rendered more intense hy the prevailing gloom. Few people would believe that actuat measurement of the sun and moon, when near the horizon at rising or setting, would fail to ehow that they are then much larger than at other times; and yet, ullowing for the differeuce caused hy retraction, and which is too slight to he meaeured hy any but tho fineet instruments, actual measurement does show that not only their real, bnt their apparent sizes are precisely the same at all times.

Animalcules in Waler.

Another fallacy which is very prevalent is that every drop of water contains millions of animalculee, and that every pebble, indeed, overy fragment of solid matter on the face of the globe, is peopled with myriads of these small creatures. For this helief there ie, however, no foundation whatever. So far as animalcnles are concerned, most pebbles and fragmente of rocks are barren deserts, especially when dry; and good epring-water is, eo far as animal life is concerned, a liqnid waste. A few stray animalculcs may occaeionally be fonnd in the water that we drink; but if it is "filled" with animalcules, it is certainly not fit for hnman use, either as drink or in the preparation of food.

The Silicious Coaling of Grasses.

But while moet of the fallacies which we have mentioned are due to eimple ignorance, there is anothcr class which is based upon a eort of quasi-ecientific information, and which are far more dangerous. A good example of theee is the opinion generally held by half-taught chemists, that it ie to the silicioua coating of the grasses and cereale that these plants owe their power of standing up right—in other words, that it is to this that they owe their stiffnese. This opinion has been so firmly held by many, that they have advised the addition of silica to land for the purpose of giving stiffness to the straw, and thus preventing the lodging of the grain. Now, when we learn that almoet all soil coneists of at least one-half silica, we shall eee the absnrdity of snch advice. The truth is, that the stiffness of straw is not due to the silica at all; for chemiets have dissolved the eilica by means of hydrofluoric acid, and removed it completely from the vegetable stem, without impairing the stiffness of the latter.—*Leslie's Weekly.*

The Matter of Size.

If a greyhound were as large as an elephant, and had the power and strido that would correspond with his size, he wonld kill himself in running a mile. The material of hie frame would not stand the strain. The dranght horso is never a rsce-horse. Beyond a certain weight, the loss of the fleetness begins. Nature puts her materials into the best forms for securing her objects. The swallow is swifter than the swan.

Ship-builders have found, to their sorrowful and disastrous cost, that ahove a certain size a ehip ie profitless. Taking into cousideration the material of which ships aro made, the modes of handling them, and the needs of commerce, two ships possessing the aggregate capacity of the Great Eastern, are worth twice as much ae ehe. The statement will douhtlese be good for all timo. There ie a limit, fixed hy nature, in this matter of size, on all the instrumentalitiee of human commerce of every sort, beyond which results are unsetiefactory.

There will never he a railroad with a twenty-five feet gauge; there will never be another Great Eastern, and there will never be another Boeton Juhilee, of the magnitude of that which closed ite performancee on the fonrth of July. The nndertaking was gigantic, and it wae carried throngh with marvellous efficiency. The moneter experiment was not a failure in any respect except in the fact that its effccts did not at all correspond with ite eize. It demonetrated the fact that beyond a certain point of magnitude and numhers neither choruees nor orchestrae can increase their powers of muaical expreesion. One thoueand eingere in Music Hall would have been hetter handled, and would have prodnced a larger and finer musical expreesion, than twenty thoueand in the Coliseum. We are glad the experiment has been tried, and that it has proved that every city can have just as good musio in its own halls and churches as ean be had by gathering together the picked men and women of all the cities of the world. Yet it wae a eplendid experimont too, and none but jealoue niggards will fail to award to those who have tried it the great honor that belongs to them.—*Scribner.*

Ostrich Farms.

The raieing of the ostrich in a tame state for his feathers is now carried on extensively in Africa. The birds are kept in inclosures, and fed on lucerne, with which the inclosure ie planted. Every eight monthe they are plucked, some extracting the quill at once, and othere cutting the quill a little above its insertion, and then removing the roots a couple of months later. The latter method is said to give better results with lees injury to the bird. The yield is abont fifty dollars per annum for each bird.

In breeding it is found to be best to allow one female to each male, though in the wild state five females are often attached to a single male. There are usually two broods in a year, and the male and the female set on the eggs by turns, the male generally taking the largest share of this duty. The female takes chief charge of the brood after it is hatched. The youug are reared on chopped lucerne, and as they get older a little grain is given them; they also reqnire abundance of water and a liheral snpply of pulverized qnartz and small bones. When grown, no food suits them better than chopped lucerne or trefoil, with an occaeional snpply of cabbage, fruit and grain.—*Amer. Artisan.*

Court Plaster.—Soak bruehed isinglase in a little warm water for twenty-four hours; then evaporate nearly all the water by a gentle heat, dissolve the reeidue in a little proof sprite of wine, and strain the whole through a piece of open linen. The strained maes should be a stiff jelly when cool. Now, extend a piece of silk on a wooden frame, and fix it tight with tacks and packthread. Melt the jelly and apply it to the ailk thinly and evenly with a hair brush. A second coating mnst be applied when the first has dried. When both are dry, cover the whole surface with two or three coatings of balsam.

Ink Plant.—Botanists are endeavoring to introdnce and acclimate in Europe a plant of New Grenada, which will be a valuable acquisition to manufactories of ink. The juice or sap which it yields, and to which is given the name of *chanhi*, is at first of a reddish tint, bnt in a few houra becomes intensely black. It may be used without any preparation. The *chanhi* corrodes steel pens less than ordinary ink, and better resists the action of time and chemical agente. It is said that during the Spanieh domination all public documents were required to be written with thie ink; written otherwise, they were liable to damage by seawater.

To Destroy Ants. — Fill small vials two-thirds with water, and add sweet oil to float on the water to within half an inch of the top. Plunge these upright in the ground, leaving only half an inch standing out, near the nest or rune of the ants. The ants will come for a sip, and go home to die. No ineect can exiet with oil stopping np its spiracles or breathing pores.

Good Health.

Blushing.

Why do we blush? What is the cause? Can it ho prevented? Why do the young blush more readily than tho old?

In answer to these questions science comes to our aid and informs ue that this sudden reddening of the face is due to a rush of blood iuto the capillariee of the skin. The influence of nervous conditions is strikingly exhihited by this phenomenon, the circulation of the blood, or rather tho action of the heart heing responsive to those emotions and passions which have immediate relation to the brain and nervoue system.

There is a marked differenco among individuals in respect to hlushing. One who is very sensitive to praiee or hlame has large Veneration, Approhativenees, and Conscientiousneee—hlushes on the slighteet occasion; while oue with those organs small will he comparatively indifferent to either—will not be moved hy censnre or hy applause, hy the powers on earth or in heaven. A vivid consciousnees of one's poverty or ignorance, or other imperfection, tends to produce a feeling of hnmility, and this causes one to hlush. Large Self-eetcem, with intellect, culture and competence, givee assnrance, makes one foel always at home whereever he may happen to be, and this puts one ahove or heyond the disposition to blush. The old saying that "a guilty conscience neede no accnser," is based on the fact that oue nnder conviction ehows it in his face; and a young rogue, when confronted with hie wrong-doing, will usually hlneh just in proportion to his sensitivenese and his coneciousness of guilt.

The fact that one cannot overcome his diffidence and look friend or foe in the face, ie no evidence of sin or wickedueee, ae some suppose. On the contrary, it is often the case that the most inuocent and virtuous are so baehful that it is next to impoesihle for them to look even an inferior squarely and steadily in the eye. He soon falters and assumes a downcast look in keeping with his modest and seneitive nature. Self-confidence, for the diffident, may be acquired, and though one would almost eink in his shoes the first time when he appears to speak hefore an audience, he will, by practice, overcome his timidity, or "platform fever," ae it is called, and when used to it, enjoy the elight agitation as a mental luxury. At first he will be suffused with bluehes, and his mind will bo eomewhat bewildered; soon, however, equilibrium takes place and "Richard is himself again."

The temperament also has much to do with onr hlushing. A nervous, eanguine temperament is much more susceptible than the lymphatic or bilious, and a blonde than a brunette. The African, the Asiatic, and the North Amerinan Indian may feel a blush, though—owing to the color of his skin—he may not show it.

One cause of blushing, on the part of some children, is produced by the mode of government adopted by inconsiderate parents and impatient teachers. Instead of mild meaeures, they resort to the most severe, namely, to that of shaming them. "Oh, you little dunce!" or, "You blockhead! did you not know better than that?" If the child really believes the parent or teacher, it will have a very ill opiniou of itself, and sink into a feeling of total nnworthiness. What else but a look of humiliation and self-contempt can be expected in the face of one so trcated? The parent or the teacher may beget in the minds of children, all the rudiments of dignity, manliness, and so much real nobility of sentiment and soul that he would be ahove doing a mean act, however sorely tempted.

Prevention: As in the effort to rcclaim the inebriate, we must look to the awakened moral sentiments, and come under such influences as we know to be right, if we would overcome any mental or phyeical infirmity like that of stammering or of blushing. We must be careful to do juet right between one and another, and between onreelves and our Creator. Then, with a conscience void of offense, and a heart and will in perfect accord with the will of God—loving His service and asking His bleesing on all we do—we shall suffer no more from the smiles or frowne of others, nor be crucified by that crushing feeling of unworthiness which cansee weak sensitive, aud bashful persons to become over-red in the face from a natural or induced tendeucy to painful blnshing.—*Herald of Health.*

Sprains.—Bathe in strong mullen tea salted, or apply brown paper saturated with vinegar; keep the paper wet as long as necessary. Nothing is better than the tincture of arnica; wrap the place with a linon cloth, and keep the cloth saturated with arnica. This is also excellent to prevent risings and boils, and to relieve the pain and inflammation when advanced.

Corns and Bunions.—Burn with canstic, after bathing; repeat, if necessary.

Another remedy: Apply the pulp of lemon until the hard pulp can be removed. Cotton greased with linseed oil or turpentine is very good, it softens the corn.

Quantity of Food to Eat.

People often ask ne "What is the proper quantity of food?" This depends very much on what the food is, and who the person ie, and what his pursuits ars. We doubt not that most people who have the means eat a third more than they really need, and we ventnre the assertion thst if each man of good constitution snd health could hegin at twenty-one, having heen properly fed to that time, he might live to be seventy or seventy five years of age and not need the aid of a doctor at all. We believe that nine out of ten could do so. Bat just how a person ehonld live to avoid entirely all causes of disease, no man, perhaps, is wise enough to prescribe. It may be ssfe to assert that most people who are healthy and hearty eat a little more at every meal than they should. That eense of fulness, that extra heat of tho face, aad the inclination to be sleepy after a meal, show that it has heen too heavy. Most people eat too rapidly, and take in more food than they are aware of. The appetite ie not allayed, and they eat as long as they can hold it, becauee the taste is good.

Suppose one were to eat parched wheat or corn; were ohliged to mesticate it, moistening by the ealiva, having no coffee, tea, or water "to wash it down," he wonld not be likely to eat too much for several reasons, the chief one being, that while eating so elowly, hie stomach would begin to appropriate the food, some of the juicea of the food would he absorbed and carried into the circulation and the appetite would be partially eatisfied hefore he had finished. Moreover, there would he a mechanical eatisfaction on the part of the stomach. It would take a man perhaps three quarters of an honr to eat as mnch of that kind of food ae wonld satisfy him. Then he would get exercise enough for his teeth, so that they wonld he healthy, and all the glands of the mouth would do their work. The etomach would come into healthy action, and the person would he eatisfied ae soon as he had eaten enough. Doubtleee he would eat but little more than half as much in that way as he would to have the wheat ground and made into mush, that could be eaten without the use of the teeth, and a surfeit obtained before the stomach had time to respond.

Persons, generally, who are fat, and are anxious to reduce their flesh, can do so by eating a third lees of food than is their customary habit. Some would have to reduce the amount one-half to bring them to a proper standard. This plan would require self-denial; but people undergo, through self-indulgence, and its consequent vexation and aunoyance, ten times more to mitigate or rid themselvee of tronble than would be nccessary to avoid it altogether.

A lady once came to ue for a phrenological description whose face was thickly covered with pimples, fiery red hlotches, like musquito bitee. Thinking we could hardly do her a better service, we asked, at the close of our phrenological description, if she would like to be rid of those pimples. She started with delight and hope, and said, "Certainly; what ehall I pnt on?" We replied, "Nothing; but eat less sugar and butter, eat lean beef and fruit, and keep clear of griddle-cakes and their accompaniments for three months, and your face will be clear and fair." In one month after ehe came in without a pimple on her face, to ehow us what virtue there was in our simple prescription. She had douhtless been buying cosmetics at a dollar a bottle for years, greatly to the advantage of the dealer. Like the woman of the Soripture, she became no better, but rather worse.

We eat too much. We eat the wrong articles of food. We have pimples, hilious fevers, headachee, dyspepsia, kidney complaint, liver difficulties, and rheumatism. The old rough statement that "men dig their graves with their teeth," has more truth than poetry in it. If men would use their teeth properly, they could postpone the time for having their grave dng for many years.—*Herald of Health.*

Carefulness in Old Age.

An old man is like au old wagon; with light loading and careful nsage it will last for years; hut one heavy load or sndden strsin will break it and ruin it forever. So many people reach the age of fifty, or sixty, or even seventy, measurably free from most of the pains and infirmities of age, cheery in heart and sound in health, ripe in wisdom and experience, with eympathies mellowed by age, and with reaeonable prospects and opportunitiee for continued usefulness in the world for a considerable time. Let such pereons be thankful, but let them also be careful. An old constitution is like an old bone: broken with ease, mended with difficulty. A young tree bende to the gale, an old one anaps and falls before the blast. A single hard lift, an hour of heating work, an evening exposure to rain or damp, a severe chill, an excees of food, the nnnsnal indulgence of an appetite or passion, a sudden fit of anger, an improper doee of medicine, any of these, or other similar thinge, may cut off a valuable life in an honr, and leave the fair hopes of usefulness and enjoyment but a shapeless wreck.

MINING AND SCIENTIFIC PRESS.

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ILLUSTRATIONS AND REPORTS OF MINING ENTERPRISES WANTED.—Drawings or photographs of mining works that are of general interest to our readers are solicited for publication in this journal. Official reports of Companies, and description of mines of importance, of special interest, are also desired. Sketches of any new method and discoveries will be very acceptable.

San Francisco:

Saturday Morning, Oct. 26, 1872.

Gold and Legal Tender Rates.

SAN FRANCISCO, Thursday, Oct. 24, 1872.—Legal Tenders buying, 88⅜; selling, 89. Gold in New York to-day, 113½.

Table of Contents.

ILLUSTRATIONS.—Sewell's Snow Plow, 257. Diagram of the Animal Kingdom, 265.
EDITORIALS.—The Mining Situation; Corrosion of Gange Glasses; Freight Rednced, 264. Notices of Recent Patents; Copper; New Method of Assaying Qnicksilver Ores, 268.
CORRESPONDENCE.—Tunneling in Eureka District, Nevada; Prospecting and Mining—Copper Veins, 258.
SCIENTIFIC PROGRESS.—Soluble Glass as a Detergent; Noctilucine; The Bottom of the Mediterranean Sea a Desert; Rapid Telegrapbing; An Impressive Scene; The Work Done by a Human Heart; Colorstion of Glass by Sunlight, 259.
MECHANICAL PROGRESS.—An Experiment With Paper Car Wheels; Australian Woods; Improved Economy in Iron Manufacture; The Work of the Telegraph; Donkersley's Puddler; Another Monster Ship, 259.
MINING SUMMARY from various connties in California, Nevada, Arizona, Colorado, Idaho and Utah; Mining Shareholders' Directory, 260-1. Market Reports, 268.
USEFUL INFORMATION.—Popular Fallacies; The Matter of Size; Ostrich Farms; Court Plaster; Ink Plant; To Destroy Ants, 259.
GOOD HEALTH.—Blushing; Sprains; Quantity of Food to Eat; Carefulness in Old Age, 259.
MISCELLANEOUS.—Eureka Consolidated Mine; Notes on the Redncticn of Gold Ores; The Cost of Military Systems; The Work of the Coast Survey; Pacific Mail Steamship Co, 266.

TO POSTMASTERS.—The interests of P. Ms. and newspaper publishers are, or should be, mutual. We assist the puhllo in a kindred line. Out of 1,000 P. Ms. we know that 990 are friends of ths PRESS. We do our best to maks them so. They have a regard for respectable nswspapers above that of ordinary merchandise such as is creditshle to both heart and brains. But we regrst to say there are a few exceptions among postmasters in thls respect. There is one, in one of the large towns of ths Stste of Nevada. At his office our papers are thrown into a heap, and subscribers, (if not others) are served with the paper that comes first no matter whose name is on it. We invite that P. M. to correct this. Failing to do so, we invite our subscribers to make a written statement, verified by one or more witnesses, and send to Mr. Barstow, Postal Agent, San Francisco and ask for redress.

SOLICITING AGENTS.—We have traveling soliciting agents and correspondents in the persons of Frank Chapin and L. P. McCarty, who are making the tour of Oregon and Washington Territory, and wherever else they may choose to direct their steps. We commend them to the attention of any of our present subscribers on whom they may call, and the public generally. Any courtesy that may be shown them, in giving them information of the agricultural, manufacturing, mechanical or mining progress and resources of the localities they may visit, either city, town or country, will be esteemed by us and reciprocated by the publication of such facts of interest as may be mparted to them.

OUR report of the proceedings of the Academy of Sciences is unavoidably crowded out this week, but will appear in next week's issne.

COLORADO.—The bullion shipment from Gilpin County, Colorado, amonnts to $135,000 per month.

The Mining Situation.

Our interior exchanges all give a bopeful account of the mining situation in their respective localities, though there is a general complaint of a scarcity of miners. Most probably this want will not long be felt for as winter approaches the numerous prospectors now in the field, will return to the different camps in search of steady employment. When this occurs the mines in want of men will find plenty of them ready for work. Considerable attention is being turned to

Eastern Nevada,

And Schell Creek District in particular is proving itself even superior to what was first anticipated. The *Prospect* says that both that and Ruby Hill District are improving, and the ore extracted from the different mines is as rich if not richer than any heretofore taken out. The McMahon Company are about to erect a 10-stamp mill, and that of the Tehama Company will be completed within a month. The *Prospect* thinks that within two months shipments of bullion will show the outside world that the Schell Creek range can not be excelled. The town of Schellburn is rapidly improving, and like most of its kind in a prosperous camp would hardly be recognized by those who made a second visit in a year after the first discoveries. Several of the mines in the district have been sold to companies at good prices, among which may be mentioned the Silver Wreath, Tehama, McMahon, Woodburn and Great Western. The ore not only from these, but from less prominent mines, is turning out in a satisfactory manner, and Schell Creek District only wants time to prove its worth.

At White Pine everything is about as usual. Rich ore is coming out of the South Chamber from the Lady's Chamber of the Eberbardt & Aurora Company's mine, and from the Belcher Con. Co's mines; good ore is also taken out of the Blasdel works and shipped to mill daily. The indications in the Beecher show, according to the White Pine *News*, that they are upon a large body of ore, which is expected to be developed shortly. At Robinson District the mines are improving as depth is attained. The *News* says, that Ward District, which was discovered about six months ago, situated 18 miles southeast from Robinson, shows rich grade ore assaying from $40 to $400 in silver. The mines as far as developed are looking very well. At Reese River all the miues now running are doing well and look encouraging. The *Reveille* says, however, that Lander Hill is not as lively as it used to be. The Chloriders have nearly all wandered off to other districts in search of something that will bring sudden wealth, and many of the mines are shut down. At

Eureka District.

According to the *Sentinel*. everything is working satisfactorily. The furnaces of the Eureka Consolidated turned out last month about 15 tons per day. The Richmond furnace for the 40 days previous to the 13th inst., shipped about $40,000 worth of bullion. The bullion of both these companies is worth a little over $300 per ton. The Phœnix works since their rebuilding shipped in the first six days 35 tons of bullion, averaging over $400 per ton. The Silver West works 48 tons per day, and averages 8 tons of bullion, worth $300 per ton. The Lemon mill for ten days work shipped 6 bars worth $6,000. Considering that recently all of the furnaces have been undergoing repairs, and that as usual after reconstructing them, they do not for a time work as satisfactorily as after being in operation a few weeks this is a very satisfactory report. The result of the election of the Eureka Consolidated Company will be found in another column. In

Washoe

Considerable prospecting is going on, the strikes on the Crown Point and Belcher mines causing many to start work again on old locations.

On the morning of the 17th inst., the American Flat tunnel of the Virginia and Truckee Railroad caught fire, and before it could be extinguished the timbers were burnt so that a large portion of the work caved in. This has caused serious difficulty in retarding the shipment of ores, etc., and the number of men in the prominent mines has, in consequence, been materially reduced for the present. The Gold Hill *News* says: As a preventative of future fires in any of the tunnels of the road, each of them are to be sheathed or lined thoroughly with sheet iron. The Belcher mine has at last begun to hoist ore through its own shaft. It has for a long time been taken out of the Yellow Jacket shaft, through the Crown Point and Kentuck mines at considerable trouble to all of them. Nothing reliable is yet known of the reported ore developments in the Imperial.

Ely District.

The mines of Ely district, or Piocbe, the most prominent on the coast, except Virginia, are reported as in a flourishing condition and it is worthy of remark that the representative mine there is the only one of all the companies called at the Stock and Exchange Board that paid a dividend this month. The town of Piocbe is the most lively "mining camp" on the Pacific slope and people are coming there daily in large numbers, while just now about 100 new buildings are going up. Strikes are frequent and the place has all the characteristics of a mining town in "flush times." Ten mines are now being worked where one was a year since, and many of those which have not been explored sufficiently as yet to prove their value are being worked constantly with that object in view. The large bullion shipments are a practical demonstration of the value of the lodes, and the nnmber of steam hoisting works, miners, and teams hauling ore to the reduction works, shows the activity that prevails. As usual in snch cases, however, there is one drawback. A serious one too, as a general thing, especially on this Coast. There is more or less litigation concerning validity of title and priority of ownership, not only among the smaller mines but among the more prominent ones also. As an instance of thie may be mentioned the suit between the Kentucky and Raymond & Ely mines. The Kentncky company commenced suit against the Raymond & Ely, a short time since, for $1,000,000 damages. On the 21st inst., the latter company commenced suit against the Kentucky to stop it from further working at the dispnted point. All cases pending bstween these companies will be heard on November 11th.

The District is, nnfortunately, said to be infested with "Soldier's titles" like many in Utah, which are likely to create more and more trouble as the mines are gradually developed and prove their richness. This is much to be deplored as throwing obstacles in the way of mining development and having a tendency to put more "bullion" in the pockets of the lawyers, than in those of the stockholders in the mines. Of course, just now the prominent bullion producing mines are those which feel the effects of these proceedings.

Freight Reduced.

An important reduction in rates of freight has been made by the Central Pacific Railroad Company between this place and Ogden, Utah Territory. A re-classification of goods has been made which is advantageons to shippers and the redneed rates on ores particularly will be hailed with joy by many mine owners. Ore and base bullion can now be sent from Ogden to this city at $10 per ton. The Salt Lake *Herald* in speaking of this subject says that when the excitement was created more than a year ago by the increased freight rate adopted uniformly by the two Pacific Railroad Companies, the lowest figure which miners, mine-owners, and bullion and ore-shippers talked of did not reach a smaller rate than is now named by the Central Pacific Railroad Company. This reduction, if continued, will enable many mines to be worked which would otherwise remain idle and will of course give an impetus to mining operations in that section. Eastern roads have at the same time been advancing rates for freight coming west, so here is a good opportunity for our merchants and manufacturers to profit by the circumstances and secure a permanent trade in the Territory. The Salt Lake papers urge the necessity and benefit of "quick sales and small profits" upon the people of this city, and express a desire to trade with us in preference to the East provided prices are reasonable. The action of the company will no doubt increase the shipment of ore and bullion in this direction as well as augment the shipment from this port to England.

THE GOODWIN PUMP AT THE STATE FAIR—Seemed to attract great attention, and to draw marked admiration for its operative tests. As a new California invention we are especially pleased to note its progress. We are told that important sales of pumps were made by Mr. West, one of the proprietors, at the Exhibition.

Corrosion of Gauge Glasses.

While our correspondent, L. P. Mc., was at Pioche, he was shown some samples of gauge-glasses from a boiler which were rendered useless by the action of the water used for generating steam. Mr. Churchman, Engineer of the Pioche mine, says that he is using a tubular boiler, 11 feet long and 42 inches in diameter; the water for the same is obtained about 12 miles from the mine, and is perfectly clear, with no disagreeable taste. The sedimentary deposit is comparatively little in the boiler, after a run of from six weeks to two months—say, from an eighth to a quarter of an inch of light, friable scale. The water has no perceptible injurious effect on the iron, nor on the brass fittings that hold the guage-glass. The glasses are about 14 inches long, a half inch bore, and put in in the ordinary way, with rubber and lamp-wick packing, and yet after using one a month the upper end is corrugated and eaten to a sharp edge, while the lower one is not affected. The glass is only blown ont once a day, and the water at all times remains as clear as when brought to the mine. There is also a resinous gum that exudes from every rivet leak, or opening, however small, around the man-heads. Mr. Churchman has used these glasses in boilers where the water was highly impregnated with salt and carbonate of lime, and yet, after much longer ussge no perceptible wear could be discovered.

It is most probable that the glass is corroded by the action of hydrofluoric acid, for a dilute solution of it acts upon glass with great facility. Only the concentrated solution acts upon the skin, causing deep and malignant ulcers. In a diluted state this acid is used in the analysis of siliceous minerals, when alkali is to be estimated. It is also employed for etching on glass. The vapor of the acid is also very advantageously applied to the same object in the following manner: The glass to be engraved is coated with wax, and the design traced in the usual way with a pointed instrument. A shallow basin of sheet-lead is then prepared, a little powdered fluor-spar placed in it, and enough sulpburic acid added to form a thin paste. The glass is placed upon the basin, with the waxed side down, a gentle heat applied, which speedily releases the vapor of hydrofluoric acid. The glass is then removed and cleaned, and the lines will be found to be clean and smooth where the pointer has marked them.

This acid may be formed in nature, and act upon the glass in the same manner. The reason why the upper part of the glass only is touched, is probably because the hydrofluoric acid is concentrated and accumulates, while the water evaporates; so it remains on the surface. Hydrofluoric acid, as before stated, does not act on the skin unless concentrated, and only on glass when diluted.

It acts on the metals very slowly, and a long time would ensue before its effects would be apparent. We know of nothing else which would act on the tubes in the same manner without being injurious to the person or to the metals. The manner in which it is formed, of sulphuric acid and fluor-spar, is one which the action of nature might readily perform, especially in a locality where materials abound, and where there are numerous hot springs in the vicinity. Hydrofluo-silicic acid, formed of quartz-sand, fluor-spar and sulphuric acid, would also act on glass in the same manner, but in a less degree, but fluorine, the corroding agent, forms the basis of this as well as hydrofluoric acid, and the action would be the same. This acid might easily be formed in nature as well as the other.

LIBEL NOTICE.—F. H. Fisher, of Nevada, patentee of the "Hydraulic Chief Knuckle Joint and Nozzle," telegraphs us that he will commence suit against R. Hoskins, of Dutch Flat, for libel in the publication of the latter's advertisement of the "Little Giant Hydraulic Nozzle," which appeared in the PRESS last week. Mr. Fisher also warns us to discontinue the advertisement. We certainly do not wish to publish any questionable matter in our reading or advertising columns, and assure Mr. Fisher that the personal advertisement he alludes too will be discontinued in our next issue. It had already been printed in the first forms of the present number when his telegram was received. We prefer that all such quarrels should be settled—as indeed they must be—outside of our columns. Our paper is open for the promotion of all worthy industries, but not (intentionally) for instigating or perpetuating ill-feeling.

Natural History of the Animal Kingdom.

[Continued from page 262.]

cavity. After a while when that animal has acquired the dimensions of two inches, the upper part becomes uneasy and drope off and swims away, and each one of theee layers one after the otber drops off and ewims away; and as it swime away it turns upside down, theee fringee at the margin enlarge into long fringes, at the edge of the central cavity, which were at first only a hollow, are provided with appendagee which hecome in the course of time thoee long appendages; and we have a number, eay twelve, fifteen or eighteen jelly fishes growing ont of thie *polyp*-like animal, which in its infancy is so much like a *polyp* that when first described it was deecribed as a true *polyp*.

Now you see here a history which hringe hefore us the connection between the *polyp* and *acalephs* in the most etriking mannor, and ehowe ue that these animals of a higher clase in their young condition may resemblo those of a lower class to such a degree as to appear to belong to that class, where their relation as infants of this class bas not heen ascertained by obeervation.

Whal Grows Out of an Egg of a Butterfly.

When the egg of a butterfly is hatched it is not a small hutterfly, hnt comes ont a worm-like animal. It ie a caterpillar, and that caterpillar has so much the form of a worm tbat it might readily he mistaken for a worm; for in every respect it has the appearance of a worm-hke animal. It grows to that. You have noticed that in the silkworm, very likely; and you must have been struck by the resemhlance of the young moth which is born from the silk cocoon to a worm. In fact, it is called the silkworm. But it does not remain a worm. After a while it spins itself into a cocoon; that worm is changed into an animal which hae the body divided into two distinct parts —one heing distinctly articulated, aud the other comprising the maesive body. But upon the sides of it you may eee compressed upon the body tbe three legs; upon the eide of it you may see compressed against tbe hody the two winge; npon the side of it you may see compreesed againet the hody the long antennae, and also an organ which ie to be the prohoecie of the moth; and when that hreake through thie envelope it becomes a moth, a perfect insect, with six legs and with two paire of wings. In fact we have a worm-like animal repreeenting the youthful condition of the bntterfly; a *crustacean*-like animel repreeenting its middle age, and in its condition the real insect. So tbat the etages of growth of the ineect recall the perfect condition of animals helonging to the lower claeses.

Here then we eee that the Creator's thonght, by the agency of which these complicatione of etructure which characterized theee different classes were called into existance are repeated in the patterns which animale present in their eucceesive etages of growth. And it shows that it is one kind—some kind of thought pervading the whole. But this is not all. In the order of eucceseion of animale through time we have the eame ideae reproduced. I may add

Anolher Example

In order that I should have eome case from each of the leading groups. The young bird doee not resemble the adult bird. When it ie firet formed on the enrface of the yolk it reeemhles the embryo of the fish eo much that it requires a practiced eye to discriminate and to recognize the characteristic differencee. I have raised turtlee which had at certain conditions presented euch etriking resemblance to a young cbicken that if I did not lahel them I could not afterwards know which was which. So great is the resemblance in the proces of life in theee animale when young, eo different in their adult condition. And I add thie other feature, that animale in the course of time have presented very different characteristics and have exemplified as it were the conditions which we recognize in the growth of animals now addnced, and the conditions which we observe among full grown animale of different etanding.

You may exemplify that in anotber way. Geologists have made ont the history of onr globe to such an extent that we now know that tbere has heen a period in the earth's hietory, when the material elements aggregating or condensing were unfit for the maintenance of animal life; when the mase of the earth was so hot that no water could exist in the fluid condition. hut only as vapor aronnd its envelope; and out of this chaotic condition has grown a etate of things, when the first eruet of the eerth became eolid, and when in the course of time this eolidified crust condensed to such a degree that an ocean could exist upon its serface, and acquire such a temperetnre that animal and vegetable life became a possihility for thie world.

Now these facts aro so well authenticated that there is no doubt in them, wo may say that there ie a horizon at which neither animal nor vegetahle life could exiet, and that helow that are observed thoee

Geological Facts,

Which belong exclusively to the inorganic kingdom. But upon this horizon, animal and vegetahle life originated; and in the couree of time a mighty succession of changee took place; and animals and plante which have lived in succession upon the earth have heen buried in the depoeits formed under the agency of water upon that firet primitive solid crust; and we call geological periods those euccessive etages in which a divereity of animale and plants are buried, and these stagee, these enccessive levele in the eolid envelope of the earth have received names. We call *azoic* all thoee deposite which underlie the forms where animal and vegetahle life begins; and then we have theee geological eyeteme which I will repreeent by horizontal linee, which have followed one another up to the time when the condition of thinge was introduced which now prevail. We have here helow what eome geologists have called the *Taconic* eyetem, or *Cambrian* system, or *Primordial* eyetem. We have above that the *Silurian* syetem; we have above that the *Devonian;* above that the *Carboniferous;* above that the *Permian* system; then we have the *Triassic*, the *Jurassic*, the *Cretaceous*, the *Eocene*, *Miocene*, and *Pliocene* periods, and the present state of things.

And in each of these periode we have animals and plants which differ from one another ae they differ from thoee now living. And now let us see in what order animale have arieen upon earth. It is not true that only the lowest made their appearance at firet. We have from the heginning *polyps*, and through all timee, We have from the beginning *acalephs*, and through all times. We have from the beginnfng *echinoderms*, and thronah all timee. So it is impossible to consider these animals which at all times have heen contemporaneous with one anotber as the ancesters of one another; or no contemporary ie the anceeter of another. We must have there a difference of time; and we see that here we have representatives of theee threo classee from the beginning, and among *mollusks* it ie tbe eame. We have *acalephs*, from the beginning and through all times. We have *gasteropods* from the beginning, and through all times. We have *cephalopods* from the beginning and through all times. And we have the *articulates* aleo from the heginning. We have *crustacea* from the beginning, and through all times. But not ineects; inseets helong in tboee periode which are more closely connected with the *carboniferous* age; end then once introduced continued through all timee to the present day. Now certainly not one of theso ani mals can he derived from those.

ECHINODERMS. ACALEPHAE. POLYPS.

ACEPHALA. GASTEROPOD.

BACKBONE OF FISH. FISH CHANGED INTO REPTILE.

WORM. CRUSTACEAN. INSECT.

RADIATES.	MOLLUSKS.	ARTICULATES.	VERTEBRATES.
Echinoderma.	Cephalopods.	Insects.	Mammals.
Acalephae.	Gasteropods.	Crustacea.	Birds.
Polyps.	Acephala.	Worma.	Reptiles.
			Fishea.

No one of these can he derived from them. Perhaps insects might—if it could be shown that they are really the decendants of any of theee older forms of *articulates* known as *trilobites* all alike.

How is it that in *vertebrates* we have in the opinion of some—and here I will show you

How Difficull it is to be Positive

At timee—in the opinion of eome naturaliste we have fishes from the beginning to the present time; in the opinion of others, fishee do not begin before the *Devonian* age. We may eay: "Well, are naturaliste so ignorant that they cannot recognize a fieh from another animal?" The difficulty is greater than it appeare, for we do not find the remaine of thoee animals ae perfect specimene, ae complete as we find the fieh in the market. We find eome of ite parts, of its hones,—what are the remaine of fieh or the remains of *vertebrates*, which have heee found there—epines and teeth. Now the spines of such fish may resemhle the spines of eome *crustacean*, for instance, of the king crab. The teeth are euch as to resemble those which are found in the cupe of the arms of cuttle fishee; and in consequence of that there are naturalists who say tbat the fishes, which are eupposed to have lived then, were cuttle fiehee; others who say that they were *crustaceans*. The certainty will he ascertained, when we have better epecimens, which will he nnmistakable, or when thoee spinee and those teeth shall have been examined in such a way microecopically as to leave no douht that the teeth are hona fide teeth of fieheo, and not the cupe of cnttle fish, and the spinee are hona fide the spines of fieh, and not possibly the epinous appendages of some king crab.

And even that investigation is very difficult owing to the circumstanoe that most of those animale of an older time differ, not only entirely from those of another period and most from thoee which live now, but reeemble one another in the seme period to a considerable extent; eo much eo that the *Silurean crustacea* or the *Devonian crustacea*, have been mistaken for a time for fish, or vice versa. And now comes the point when we have difficulties among ourselvee, which no doubt are exaggerated by the community, when they helieve that we have no eolid knowledge of all other departments of our science.

To know when the uncertainty hegins and when the certainty may be reached, requires a conciderable familiarity with the whole, as in every department of knowledge! And what is the representative field that the numher of those who are competent ehould he increased, that the number of those who have acquired familiarity with this subject should be so great thet real information ehall be rap dly made precise? It is in consideration of this desirahle state of things that I appeal to you to

Foster all Efforls

Which are making toward the fostering of science, and you will see that this knowledge goes much further in its consequences than appears at the surface. I have presented to you these things as facts, hut they are more than facts; they are indications of something superior. If these animals are related to one auother in the manner in which I have presented, in consequence of a plan, there was thought that laid out the plan. There wes a mind that determined thie plan. In fact, the whole animal kingdom is the work of intelligenee. But if these things are derived one from the other. they may be, and they are repree eeuted so by a school of naturalists at the present day; they may be the work of blind forces, of forces without intelligenee, without discriminating power, and without forethought, and you see at once that

The Study of Nalure

Is every day encroaching not only upon philosophy bat upon our very creeds; and the day will come when all thinking men will appeal to the facts of nature to determine whether we onrselves are descended from monkeys or whether we are the work of a beneficient Father. Now it will no longer do for the coming generatione to eay, I will accept this or that doctrine, because knowledge is pressing at your halls and will say to you, you may know it becauee you muet know it, and nnlese you are willing to learn it you may grope in ignorance and be the tool of a designing priesthood. That is the condition that staree us in the face for the future, and it hecomes the duty of every man to foster knowledge and to prepare the coming generation with all those appliances which lead to an independent opinion on all those matters. But there is another consideration than that of your immediate necessitiee here. No community can be utterly great without

Culture.

Culture is the hackground of every great community. It ie, in fact, the true and only teet of real greatneee, and history admoniehes us in the moet pregnant manner that this is true, and that the fate of natione depends upon their culture. Compare States that have gone out of existence, as Athene and Carthage, that have hcen drowned in the course of time. Compare them in the memory of mankind. Carthage, that powerful Carthage, which made Rome tremble, what has she left? A pile of ruins, the position of which is hardly known, and nothing else which could benefit mankind. Little Athene, the model of all culture! from her we have learned eloquence, poetry, philosophy—the arte. If anything ie great we try to make eure that it will compare with Athenian culture. Will you allow your community to share the fate of Carthage, or will you show that all your luxuries and good fruits shall be embellished by Attic salt in the future? It ie for you to decide.

Eureka Consolidated Mine.

An adjourned meeting of the shsreholders of the Eureka Cons. M. Co., was held on the 10th inst., when it was expected that a new Board of Trnsteee would be elected instead of the present one. A nnmber of tbe shareholders deeired this change in msnsgement, believing that the Truetees were not carrying on sffairs to the best intereets of tbe compsny. The furnaces and mines of tbe corporation have been under way for a long time and with apparent succeee, while for more than a year no dividends hsve been paid. The principal cause of complaint appeared to be that large quantitiee of chsrcoal hsd been purchased at 32 cents per buehel, when it was selling at 28 cents, and cord-wood bougbt at $8 per cord, when it could be obtained for $6. There was a week or so ago about 600,000 bushele of chsrcoal on hand at tbe furnscee, which would have been sufficient to run them throngh the sesson of bad rosds, and the rosds in that locality will probably be good for two months to come. The shareholders see no reaeon why a large expenditure should be msde for charcoal when there is no immediate necessity for it, and there is a large stock on hand, especially when a price above the market value is paid for it. Tbey think it about time to see a dividend.

Cbarcosl too, as is well known, deteriorates with time, and if the qusntity on hand was as large as represented, and an exorbitant price wse paid, the ehareholders certainly have just cauee of complaint. There is no use in a dividend being tied up in a lot of charcoal for six months or a year. The failure on the part of this company to pay dividends has been a serious drawback to Enreka District, it being the representative one. At the meeting in question the committee appointed to nominate Trustees, put in a ticket, but most of the old Board were re-elected, as follows: W. W. Lawson, (re-elected), Thomas Bell, (re-elected), Wm. Thompson, (re-elected), Capt. W. H. Osgood and James Findla. The two latter took tbe places of George Hearst and Lloyd Tevis. We are glad to see the sharebolders of mining companies standing up for their rights wben they think they are being abused. A few wholesome lessons will be remembered, and will serve to remedy many evils in the future. In this instance tbe old Board was re-elected, it is true, but they will no doubt have hereafter, more consideration for tbe wishee of stockholders. If more shareholdere would take an interest in the *mining* department of their companies, and not so much in the fluctuations of the stock, a great improvement would be made, and more care taken by trustees and officers in their management.

The following statement is condensed from the report of the Secretary:

RECEIPTS.

Proceeds 3,019 tons base bullion refined, including 1,430 tons last year's product	$1,169,609
Approximate value 1,981 tons base bullion at refinery works, Newark, New Jersey, and en route	641,160
Exchange on coin drafts	3,626
Reclamation for over charges on freight	1,273
Miscellaneous	1,062
Total	$1,806,530

DISBURSEMENTS.

For construction and improvements	$ 54,959
Mine account	261,803
Smelting account	680,330
General expenses, Eureka	41,299
Expenses at San Francisco	11,901
Interest, etc	23,126
Freight and refining, etc., on bullion	269,101
Office fixtures	76
Dividend No. 6 paid to stockholders	50,000
Real estate, Eureka	1,600
House for use of assayer	1,200
Wood ranch	719
Mining property	2,023
Bills payable	26,000
Book accounts	683
Total disbursements	$1,402,819
Balance value of bullion on hand Sept. 30, '72.	403,711
Total	$1,806,530

RESOURCES.

1,981 tons base bullion	$641,160
Charcoal on hand	160,666
Supplies at Eureka	6,116
A. M. Ellsworth, Superintendent	1,714
Total	$798,656

LIABILITIES.

Drafts against bullion shipments	$328,589
Overdrafts	169,328
Superintendent's drafts not presented	9,569
Book accounts not due	8,376
Bills payable	76,000
Total liabilities	$590,861
Net resources	207,795
Total	$798,656

Lees & Waller, at New York, advise by letter that the amount standing to the Company's debit on the 1st day of October, 1872, was $113,586. The product of the mine for the year was 3,570 tons baee bullion, of which 1,589 tons have been refined, yielding $608,340, leaving a balance on hand of 1,981 tous at refinery works and en route, valued at $641,160, making the total yield for the year $1,259,500, or $153,320 less than tbe disbureements. The average cost of extracting the ore for the year has been $784, while the cost of smelting has been $18.33 per ton.

Notes on the Reduction of Gold Ores.

BY H. A. THOMPSON, M. E., OF MELBOURNE.

[Gontinned.]

In all mining countriee where attention has been give to the saving of tbie gold, tbe plans tried were first directed towards treating the tailings in bulk, by re-grinding and amalgamating, or eome anslogoue plsn; but from the fineness of the gold it must be evident that tbe reduction of *all* tbe tailings to such a gauge as would allow tbe pyritoue gold to be liberated, could only be effected at an expense grester than the value of the gold tbat would be obtsined. Such grinding as can be practicslly given to it by the best machines known, has extrscted abont one-tbird of the gold contents, and thie at euch a coet as to leave only a emall msrgin for profit, unlese the tailings wore exceptionally rich. Even in the latter case, they they will probably contain such a percentsge of eulphides as wonld msterially affect the amalgamation, and thus bring up another objection. Ae, however, it appears tbat with good arrangements for extracting tbe free gold, tbe bulk of the gold lost is only that enveloped in tbe sulphides, by separating tbe lstter from the worthless ssnd (and in doing this most of the free gold escaping would be retained also), we obtain tbe gold in a small quantity of rich material that will pay for the more costly processes reqnired to extrsct it. By this means, probsbly nine-tenths of the wortblese sand, and the cost of operating on it, will be got rid of, and the one-tenth retsined will consist of sulphides, and particles of quartz ssnd enveloping gold, of a small proportion of free gold, and more or leee eand not containing any gold,—the quantity of the latter depending on the efficency of the concentrating process used, snd to the extent to which it ie carried.

The greatest advance which has hitherto been made towarde the saving of the pyritous gold has resulted from tbe following up of this system, although before bringing it to perfection tbere are still some difficulties to be surmounted. The principal of these is the complete concentration of tbe sulphides from the wortbless sand.

The specific gravity of the quartz is about 2·6, and that of iron pyrites (our great gold bearing ore) is about 4·7, this amall difference offering great obstructions to their perfect separation, as all persous acquainted with practical ore-dressing will at once perceive. But this difficulty is increased through the pyrites being eo much more friable than the quartz, great part of it being in consequence crushed into a fine powder, which cannot be separated from the sand by any of the common ore-dressing machines now in use.

The eulphides hitherto operated on consist of the larger particles retained on the blanket strakes, or separated from the waste tailings by means of Mr. Munday's patent buddle. But even this amount of saving is well worthy the attention of mining companies, as the results obtained at the Clunes works for some years past prove* beyond a donbt, seeing it would add at leaet £300,000 per annum to the returns from our quartz mines, and by doing so, double the profits derived from them. There is now, however, a certainty that the concentration may be carried much further than it has hitherto been, by means of the improved percussion table.†

Tbe system adopted for the treatment of the sulphides is simple and easily understood, being merely the elimination of the sulphur and arsenio, and the conversion of the iron into an oxide, so as to liberate the gold, and allow mercury to be used for its extraction.

A plan baeed on the same principle was long used for dealing with the pyritous ores of North Carolina and South America. Tbe ores were first crushed, and the gold thus liberated taken out; they were then exposed to the action of the atmosphere for a year, to allow of natural decomposition and oxidation, wben tbey were again re-treated; the gold obtained in the second operation being nearly the same amount as in the first; and this was repeated for four or five years, by which time the gold was exbausted.

By the plan now followed, instead of waiting for four or five years for the oxidation of tbe sulphides, the process is completed in two hours in an oxidating furnace.

If the pyrites is brought up toa dull red heat, in an open vessel or furnace, the oxygen of the air will combine with the sulphur, arsenic, and iron forming the pyrites; the two firet constituents pass off in the form of sulphurous and areenious acids, and tbe iron will be converted into a brown or red oxide. This change can be effected in the ordinsry reverberatory furnace, but the time and labor expended in raking over the material until every portion of it has been exposed to the action of the air for a sufficient time to ineure its decomposition, renders this a elow and coetly procese. The oxidating furnace uow in use at Clunes (designed by Mr. Latta) remedies tbese defects. In this, the fire is applied in a similar way to that of the ordinary reverberatory furnace, but provision is made for throwing in a superabundance of heated air. The bed is from tbirty to forty feet long, and from five to eix feet wide, set at an angle of about twenty degrees, and there is an opening for the discharge of the roseted sand, between the lower end of tbe bed and the bridge of the furnace. It ie fed at tbe upper end, and the material is gradually raked down the inclined bed, whicb is thus kept covered with a tbin layer of sand. In traveling down tbe bed, every portion of the sand is exposed to the action of the air, and it is found thst abont two hours exposure in the furnsce is sufficient to allow of the complete oxidation of the pyrites. The action is continuous, small charges of tbe raw msterial being fed in at the upper end, to eupply tbe vacancy caused by the drawing off from tbe bottom. A dull red heat is found to be the most effective, and the sand is quenched with water as it leaves the furnace.

The gold is still for the most part enclosed in the particles of oxide of iron, and a grinding process is required to liberate it, and facilitste its absorption by tbe mercury. The plan hitherto used is to grind the moistened sand under broad-faced Chilian rollers, in chargee of two hundred pounds weight each, with one bundred pounds of mercury. The latter ie broken up, and dietributed tbrough tbe moist sand in myriads of small globules, thus bringing it into contact with the minute particlee of gold. After this grinding snd amslgamating has been carried on for half-an-hour, water is sdmitted, and the mercury collects together again. The ssnd is then flushed into a cistern, and the mill recharged. From the cistern the esnd is run through concentratore, for the purpose of collecting the finely-ground mercury which passes off with the sand from the mill.

Taking the average of the last twelve months' work at Clunes, eighty-six per cent. of the totsl gold contents of the pyritee treated wae obtained by thie means, and it is probable that considerable improvements will yet be made.

One of these would be the grinding of the roasted sand to a fine powder previous to amalgamation. In tbis way a more thorough disintegration of the sand would be effected than is practicable in tho mill, and the surface of the gold would be burnished, eo as to restore its affinity for the mercury, injured by the heat to which it had been subjected. This plan will shortly be tested.

The syetem of extracting gold known as Plattner's process, from its having first been brought into practical operation by him at Reichenstein, in Germany, is founded on the affinity of chlorine for gold. The ground ores are first roasted, and tben put into shallow vessels with a falee bottom. The chlorine gas is obtained by putting the proper equivalente of manganese, common salt, and sulphuric acid, into a generator, and when heat is applied, the gas is evolved and conducted under the false bottoms of the cisterns. When the latter are fully charged with gas (whicb may be know from its risiug through and resting on the sand) they are closed up for from twelve to thirty-six hours, to allow time for the combination of the chlorine and gold. The chlorine of gold formed being soluble in water, it is dissolved out of the sand, and tbe gold is then precipitated from the solution by the addition of sulphate of iron. If this process is carefully conducted, nearly all the gold will be obtained. The labor attending it is not great, but tbe cost in this colony of the chemicals required has hitherto been the great objection. This cost would be mucb reduced if tbe mannfacture of sulphuric acid from tbe sulphides were combined with the extraction of the gold, and the formation of an establishment for this purpose, iu a central position, would be attended with great benefit to the quartz miners.

Many attempts have been made to extract the gold from the sulphides in their raw state, for the purpose of avoiding the cost of eliminating the sulphur and arsenic by roasting. But even with the uee of sodium amalgam and other chemicals, the triale hitberto made have not been attended with satisfactory results up to the present time. Fine grinding in mills or barrels with mercury alone will not extract a fair proportion of the pyritous gold. Still, many of our crushers keep trying this plan; and having extracted a part of the gold, at once jump to the conclusion that they have obtained it all, or nearly all. Unless these trials are properly conducted, tbey may lead to much useless expenditure, and to the formation of opinions having no sound basis to rest upon, but which may have a most injurious effect in delaying substantial progress. Before any trust can be placed in such experiments, the character of tbe gold to be saved, and the percentage that can be extracted by the processes now in use, should be known. Tbe exact amount that can be obtained by the new plan, and that still left in the sand, will then give the data requisite for making a fair comparison, and show if any advance has been made. It might be supposed that to advocate such an obviously necessary precaution is hardly required; yet through neglect of it large eums of money have been thrown away, and the false opinions and prejudices it has fostered offer no trifling obstacles to the dissemination of correct views.

[To be continued.]

* The retnrns from tbe Clunes works, of the working of tbe pyritous ore from their waste tailings, for the year ending September, 1867, were as follows:—

268 tons of concentrated material operated on, containing, by assay, 3oz. 9 dwt. 3 grs. of gold per ton.

Amount of gold extracted, 795 ozs. 8 dwts., or 2 ozs. 19 dwts. 10 grs. per ton, being 86 per cent. of the total gold contents.

Cost of operation, £800 4s., nearly £3 per ton, or £1 0s. 1d. per oz. of gold obtained. Profit, £2,369 3s. 9d.

† Since these notes were written further improvements bave been made in tbe working of the patent buddlo.

GAS WELL.—The gas well discovered at Salinas City some few weeks since, having been closed up for a few days, opened on the 18tb, inst., and continues to throw gas, stones and water with the same force it did at first. It was again ignited and proved to contain all its previous good qualities. The gas will probably be utilized in lighting the town.

The Cost of Military Systems.

The Berlin *Post* presents some interesting figures ehowing the etrength of tbe armiee at tbe command of the three emperors who lately met in council in that city, and thoee of otber European powere, wbich msy be briefly summsrized as follows: Kaiser Willism has 1,052,506 men; the Czsr of Russis hss, not inclnding the Coeescke, 1,362,464 men; tbe Emperor of Austria bas 963,050 men; Frsnce bae 505,537 men under arms; Itsly hae 501,977 men; Englsnd, 154,000 men; snd Belgium, Holland, Denmark, Spain and Turkey togetber, 981,364 men. Tbus we have the enormous totsl of 5,520,898 men who make arme a profession. Tbeee men, in the prime of life and tbe full development of strength and cspscity for lsbor, are not only witbdrawn from useful production to live in idleness at tbe expense of the State, but tbeir maintensnce and equipment must give conetant employment to many thousande of producere wboee labors can thus contribute notbing to the welfare of the community; and when we coneider the value of the producing capacity which is thue practically wssted, we csn gain eome idea of the burdens imposed upon labor and cspital for the maintenance of military eetablishmente. Fortunately, ware are becoming so coetly that nstions will not long be able to afford to engage in them, and we tbink the time is not far dietent when the people of all countries will demsnd that the burden of standing armies shall be forever lifted from their patient shoulders. Tbe world has too many uneupplied wsnts to long tolerate the needlese withdrawal of millions of strong and intelligent men from production, that kings and emperors msy play at war.—*Iron Age.*

THE WORK OF THE COAST SURVEY.—Professor Benjsmin Pierce, Superintendent of the Cosst Survey, hss submitted hie annual report to the Secretsry of tbe Treseury. In all the northern sections parties are yet in the field, and will so continue until the approach of winter, when transfers will be made for resuming operations in the southern sections of the coast. Surveying parties are now engaged either in triangulation, topography or hydrography on the coast of Maine. Special astronomical observations bave been made at Cambridge, Maes., to determine the precise relation in longitude between points in the United Statea and points in Europe. Special examination has been made to verify the sailing direction for the harbor charts of the coast of New England. The tides have been recorded constantly during the year at North Haven, in Penobscot Bay, and at tbe Charlestown Navy Yard. The Plane Table snrvey of the coaet of Rhode Island is in progress, near Perrysville, west of Point Judith, and also the detailed eurvey of New Haven Harbor. Special hydrographical investigations are in progress in Now York Harbor and the adjacent waters, and the tides have been steadily recorded at Goveruor's Island. Field parties are completing the shore line survey at the eouth end of Lake Champlain, and others are sounding its northern branchee. Professor Pierce reviews at some length the work done along the coast, and eays tbe magnetic elements have been determined in the vicinity of Philadelphia and at Washington, D. C.; tides have been regularly recorded at Old Point Comfort, Va.; a geodetic reconnoiesance ia in progress near Harper's Ferry; the detailed survey of James River, Va., has been extended npward to Warwick River; twenty new charts have been published during the year, and nine others, wbich show extensive additions, in comparison with their first iseue, and tide tables for the ensuing year, have been prepared, and will be published as heretofore.

PACIFIC MAIL STEAMSHIP CO.—There are twenty-five steamships owned by this company, employed in the Pacifio trade. Running between this port and China are the "Alaeka," 4,011 tons; "Colorado," 4,009 tons; "China," 4,350 tons; "Great Republic," 4,000 tons, and the "Japan," 4,351 tons, one of which is despatcbed on the 1et and 16th of eacb month. In the Panama trade there are the "Arizona," 2,793 tone; "Conetitution," 3,575 tons; "Montana," (sidewheel) 2,676 tons, and the "Sacramento," 3,682 tons, one of whicb leaves the docks on the 7th, 17th and 27th of each month. The "California," 1,057 tons, is in the Mexican trade, and the "St. Lonie," 1,771 tone, in the Central American. Four steamehipe are kept in the inland China seas, the "Golden Age," 2,838 tone; "New York," 2,217 tons; "Oregonian," 1,814 tons, and the "Costa Rica," and there is also a "Costa Rica" stationed at Panama. The other steamships of the company on this ooast are the "Ancon," "Montana," (screw) "Gautemala," "Honduras," "Salvador," and "Winchester," while in the San Diego trade, plying five times a month, are the "Pacific," "Orizaba," and "Senator," and on the 12th an additional steamer leaves for Guaymas, near the head of tho Gulf of California.

IMPORTANT TO MINING INCORPORATORS.—In incorporating a company in this State to mine in the State of Nevada, besides the certificate filed in the office of the County Clerk and a certified copy sent to the Secretsry of State of California, the laws of Nevada require that a certified copy shall also be filed with the Recorder of the precinct in which the mine is located. The officers of Nevada are now strictly enforcing this provision of the law, and bnt few persons appear to be aware of the fact, aa only one copy of the original certificate is nsually for certification to the County Clerk of this city.

Business Cards.

H. C. BENNETT,
STATISTICIAN.
Reports and estimates made about all departments of Production, Commerce, and Manufactnre, of the Pacific Coast. 5v24-tf

RICHARD H. STRETCH, Civil Engineer,
City and County Surveyor.
Office—Room 16, City Hall. 11v24-3m

GILES H. GRAY. JAMES M. HAVEN.
GRAY & HAVEN,
ATTORNEYS AND COUNSELORS AT LAW,
In Building of Pacific Insurance Co., N. E. corner California and Leidesdorff streets,
SAN FRANCISCO.

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JOHN ROACH, Optician,
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S. W. corner Sacramento.
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N. P. LANGLAND,
Stair Builder, Wood Turner, and
SCROLL SAWYER,
No. 485 Brannan Street.....SAN FRANCISCO.
And No. 9 Q St., bet. First and Second, 21v23-tf SACRAMENTO.

WM. BARTLING. HENRY KIMBALL.
BARTLING & KIMBALL,
BOOKBINDERS,
Paper Rulers and Blank Book Manufacturers,
505 Clay street, (southwest cor. Sansome),
15v12-3m SAN FRANCISCO.

SAN FRANCISCO
CORDAGE COMPANY.
Manila Rope of all sizes. Also, Bale Rope and Whale Line constantly on hand. Tarred Manila Mining Ropes of any size and length manufactured to order.
TUBBS & CO., Agents,
26 611 and 613 Front street.

J. F. PAGES,
SEAL ENGRAVER,
AND LETTER CUTTER,
Brass and Steel Stamps and Dies, 608 Sacramento street, San Francisco. Orders by express promptly attended to.

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OF SAN FRANCISCO.
Capital, One Million Dollars.
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25v20-qy

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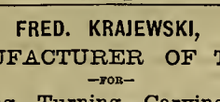
Molding, Turning, Carving, Etc.
Mortise Chisels, Blind Chisels, Crotchet Chisels, and also all kinds of Screws for Stair Work and Sash Joints on hand and made to order.
Berry street, bet. Fourth and Fifth, SAN FRANCISCO.
25v23-tf

L. SCHUMANN,
PIONEER
Meerschaum Pipe Manufacturer,

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Between Bush and Pine streets, San Francisco.
The first and only Manufactory on the Pacific Coast. MEERSCHAUMS MOUNTED WITH SILVER. Meerschaum Pipes Boiled and Repaired. Amber Mouth-pieces Fitted.

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Patent Agraffe Pianos,
GRAND, SQUARE AND UPRIGHT.
Pianos to Let.
A. HEYMAN,
I street, between Sixth and Seventh,
mal8-tf Opposite old Capitol, SACRAMENTO.

WALTER TURNBULL. JAMES HAY SMITH.
TURNBULL & SMITH,
Commission Stock Brokers,
Union Insurance Co.'s Building, 418 California Street,
(Up Stairs,) SAN FRANCISCO.
WALTER TURNBULL, Member S. F. Stock & Ex. Board.

THE LITTLE GIANT HYDRAULIC NOZZLE

IS FAR SUPERIOR TO ALL OTHERS.

Many persons have been deterred from purchasing by the representations of Mr. F. H. FISHER, that the LITTLE GIANT is an infringement on his patent. The statement is utterly false. Said Fisher was tried and convicted and fined for infringing on one of the patents embodied in the LITTLE GIANT. He has again transgressed, and will soon have to appear for sentence, and the parties who purchased of him will be attended to in due time.

The Little Giant was Awarded a Special Premium of a Silver Medal
AT THE STATE FAIR OF CALIFORNIA IN 1872.

I manufacture Machines of all sizes, and am sole licensee and manufacturer under Craig's, Masey's, Rice's, Allenwood's and Hoskin's Patents. I will fully protect my patrons from any or all others. Send for Circular, containing testimonials, etc., to

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August 7, 1872. 15v25-tf

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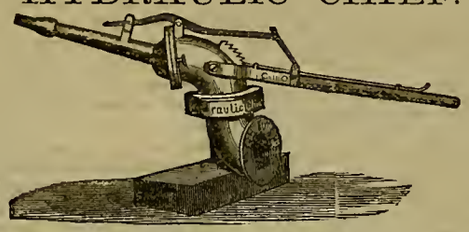
FISHER'S KNUCKLE JOINT AND NOZZLE IS THE Cheapest and Best Hydraulic Machine in use.

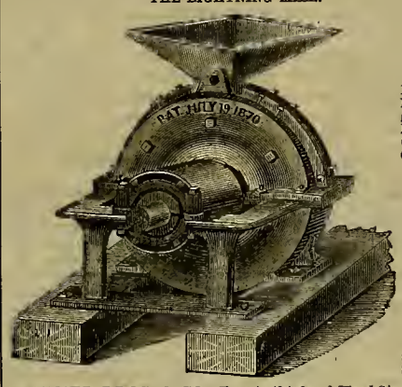


MACHINES Manufactured TO ORDER, to throw from One to an eight-inch STREAM.

The only reliable party in the Hydraulic business who protects his patrons.
9v23-tf Address F. H. FISHER, Nevada, Cal.

HYDRAULIC MINERS, TAKE NOTICE—I hereby caution Miners and Manufacturers against making, buying, selling or using a Hydraulic Machine or Joint known as the Little Giant, manufactured and sold by R. R. & J. Craig and Richard Hoskin, as the same is an infringement upon the invention of the machine known as FISHER'S HYDRAULIC CHIEF, secured by Letters Patent, No. 110,222, dated Dec. 20, 1870. All parties participating in such infringements will be rigorously prosecuted. Nevada, Jan. 13th. F. H. FISHER.

THE LIGHTNING MILL.



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LIGHTNING MILL,
For Pulverizing Quartz, "Charleston Rock," and all Native Phosphates, Flint, Feldspar, Iron Ore, Manganese, Antimony, Carbon, Corundum, Old Crucibles, Barytes, Brimstone, Slate, Soapstone, Graphite, Glass, Marble, Plaster, Anthracite and Bituminous Coals, etc.

WM. STEWART'S
Patent Bone Mills and Crushers.
For Grinding Bones, Rock, Quartz, and all hard substances; also, Corn, Wheat, Oats, Barley, Coffee, Spices, etc.

WALKER BROS. & CO., Twenty-third and Wood Streets, Philadelphia, Sole Manufacturers of Stewart's Celebrated Patent Bone Mills and Crushers, A. W. Straub & Co.'s Patent Revolution French Burr Mill and A. Duval's Patent Centrifugal Pumps.

CAMERON'S
MINING STEAM PUMPS.
DAVID STODDART,
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Sporting, Hunting, and Target Rifles.
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REVOLVERS FOR HOUSE USE.
In these days of thieves and Burglaries, every householder should have a revolver for home protection.
REMINGTON'S RIFLE CANE.
Every gentleman should have one for protection against dogs and rowdies, and for field use.
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Manufacturer of
PATTERNS AND MODELS,
(Over W. T. Garratt's Brass Foundry).
N. W. corner Natoma and Fremont streets, S. F. Entrance on Natoma street. 6v23-3m

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THE
Risdon Iron and Locomotive Works
Corner Howard and Beale Streets,
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Standard sizes of railroad Car Wheels, with special patterns for Mining Cars. These small wheels are made of the best Car Wheel Iron, properly chilled, and can be fitted up with the improved axle and box—introduced by this company, and guaranteed to outlast any other wheels made in this State.
☞ All kinds of Machinery made and repaired.
24v22-3m JOSEPH MOORE, Superintendent.

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Office Desks and Book Cases
On hand and Manufactured to Order, by
JOHNSON & BEST,
No. 311 Pine street, opposite the Pacific Bank,
18v24-6m SAN FRANCISCO.

MILL STONES.

Portable Mills, Eureka Smut Machines Bran Dusters, Dufour & Co.'s Celebrated Dutch Anchor Bolting Cloths, and General Mill Furnishing.
TRAVIS & WAGNER,
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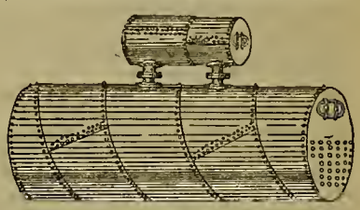
San Francisco Boiler Works,
123 and 125 Beale Street.....SAN FRANCISCO.
F. I. CURRY,
(Late Foreman of the Vulcan Iron Works,) Proprietor.

High and Low Pressure Boilers of all Descriptions.
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SHEET IRON WORK of every description done at the Shortest Notice.
All kinds of JOBBING and REPAIRING promptly attended to. 17v25-3m

LEA & PERRINS'
CELEBRATED
Worcestershire Sauce.

Declared by Connoisseurs to be the only good SAUCE
Caution Against Fraud.
The success of this most delicious and unrivalled Condiment having caused certain dealers to apply the name of "Worcestershire Sauce" to their own inferior compounds, the public is hereby informed that the only way to secure the genuine is to ASK FOR LEA & PERRINS' SAUCE, and see that their names are upon the wrapper, labels, stopper and bottle.
Some of the foreign markets having been supplied with a spurious Worcestershire sauce, upon the wrapper and labels of which the names of Lea and Perrins have been forged, L. and P. give notice that they have furnished their correspondents with power of attorney to take instant proceedings against manufacturers and vendors of such, or any other imitations by which their right may be infringed.
Ask for LEA & PERRINS' Sauce, and see name on wrapper, label, bottle and stopper.
Wholesale and for export by the Proprietors, Worcester; Crosse & Blackwell, London, &c., &c., and by Grocers and Oilmen universally. 15v24-tf

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PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[From Official Reports to DEWEY & CO., U. S. and Foreign Patent Agents, and Publishers of the Mining and Scientific Press.]

For Week Ending September 24th, 1872.*

Dredging-Machine.—Andrew J. Gove, S. F., Cal.

Rouleau-Envelope.—Andrew J. Gove, S. F., Cal.

Ore-Crusher.—William P. Hammond, Napa City, Cal., assignor to himself and Henry Mygatt, same place.

Combined Water-Wheel and Sewing-Machine.—Isaac Hyde, Oakland, assignor to Oscar J. Backus, S. F., Cal.

Car-Brake.—James Charles Gibson, Sacramento, Cal.

Traction Locomotive and Railway.—William B. Hyde, Oakland, Cal.

Washing-Machine.—John S. Ord, Soquel, Cal.

*The patents are not ready for delivery by the Patent Office until some days afterward.

Note.—Copies of U. S. and Foreign Patents furnished by Dewey & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co.'s Mining and Scientific Press American and Foreign Patent Agency, the following are worthy of mention:

Quicksilver and Amalgam Saving Apparatus.—Joseph Potts, Treasure Hill, White Pine, Nevada. This invention is called an Electro-Galvanic Quicksilver and Amalgam-saving Apparatus, and is intended for that purpose in mining operations, more especially to save that portion which usually escapes down the sluices on account of its fineness or state of minute sub-division. This is accomplished by passing the pulp or tailings through a sluice or section of a sluice, which is provided with peculiarly-arranged riffles, the pulp or tailings being first distributed upon the floor or bottom of the sluice-box by means of a revolving hopper of novel construction. The riffles are made of copper, and riveted to the bottom of the box at an angle of 30°, and extend lengthwise of the box. A space of about one inch is left between the riffles in each row, of which there are ten. The riffles in each alternate row are riveted between the spaces of the upper row, so that there are five rows containing five such riffles, and five rows containing but four. In another box are another series of riffles, which run across the box, and are set at the same inclination as the box itself. On the upper side, these riffles are separated so as to allow the quicksilver and soft amalgam to pass through and finally run into the vessel for receiving it. The lowest riffle is not perforated, and the main quantity of water and sand is allowed to pass over it into the sluice below. The boxes, riffles, etc., are all coated with amalgam, and the copper boxes are enclosed in others of zinc. So, in the admission of tailings or water, however slightly acidulated, a galvanic action is set up. The whole apparatus may be enclosed in a wooden box, and kept under lock and key. The apparatus receives the tailings at the upper end in a hopper or revolving wheel. The tailings are thus distributed along the course of the riffles, and finally discharged from the sluice. In passing through these boxes and over the riffles the tailings are subjected to a galvanic action, which adds intensity to the volume and favors the amalgamation of the particles. The whole apparatus is charged with an additional current of electricity by ordinary batteries.

Coin Envelope.—A. J. Gove, S. F., Cal. This little device will be appreciated by all Californians particularly, as it is an envelope, wrapper or package for containing silver coin in specific quantities, and especially silver half-dollars, in order to render them more convenient for handling as a commercial medium. Wherever silver in large quantities is used as a currency medium, and especially upon the Pacific Coast, where there is a superabundance of silver half-dollars, whatever lazy men may say to the contrary, it is customary, for the sake of convenience, to make what is known as "silver rolls," each of which usually contains forty half-dollars, thus making them into packages of $20 each, known as $20 rolls. The usual way of confining these pieces of silver in a roll is by means of a piece of paper, in which the roll is wrapped, thus concealing the contents of the package, and as the roll generally passes as current without examination, a chance is offered for dishonest persons to concoct fraudulent rolls. Numerous instances have occurred in which a piece of iron tubing was inserted in the wrapper, instead of the pieces of silver, and others in which counterfeit pieces were introduced with the genuine silver, thus perpetrating a fraud upon the public. This invention is a wrapper which can be very cheaply made, and through which the contents can be examined without unfolding the package. It is constructed of a piece of card-board or other stiff wrapping material, which is cut the exact length desired to have the coin-roll, and wide enough to extend almost around the roll. The space between the two edges forms a slot the entire length of the roll, through which its contents can be examined without disturbing the wrapper. The edges are bonnd with strips of metal, made of waste pieces of tin or other metal. One or both ends of the wrapper can be removed by turning one end slightly; and then it can be used over and over again. It can also be used as an advertising medium, since advertisements can be placed upon it.

Self-Acting Brake. — Timothy Stebins, S. F., Cal. This invention provides an automatic brake or governor, which is more especially intended to be used in connection with elevators, and it consists in the employment of two or more shoes, which rotate within a stationary rim. These shoes are so connected with their axle that any increase of speed beyond the desired point will cause the shoes to move outward, so as to rub against the rim with more or less friction, according to speed, and thus retard the motion of the shaft and anything which may be connected with it. Suitable springs are connected with the shoes, and by their tension the speed of the machine is determined, as when the centrifugal force overcomes the spring the shoes are thrown against the interior of the rim, checking the speed.

Improvement in Belt-Shifters. — Samuel Forsythe, S. F., Cal. This is designed to improve that class of shifting devices in which a cylinder provided with cam or spiral grooves is employed for shifting the hlooks which carry the belt. It provides a spring-guard, which will limit the rotation of the shaft at certain points, and thus indicate when the belt has been properly placed, without requiring further attention from the workman.

Axle-Box. — Jonathan S. McClure, Sacramento, Cal. This improvement is more particularly applicable to the boxes which support the journals of railroad-car axles, but can also be used in boxes of all kinds which are likely to become heated by the revolution of the journal. A water-tank is attached to the box in such a manner as to keep the box cool and prevent it from being overheated by the friction of the journal; and there is also a novel arrangement for supplying oil to the journal for lubricating purposes. The arrangement is simple and easily applied to the ordinary axle-boxes of railroad cars. The same application can be employed on the stationary boxes of machinery for the same purpose and with equal benefit. The axle-boxes are connected with a water-tank by a pipe and a circulation of water is maintained between the part of the axle-box required to be kept cool and the tank as the water becomes heated.

Medicated Towel.—Lydia Stewart, S. F., Cal. This is rather a novel method of applying medicine externally to the human body, by means of an ordinary towel. The towel is to be used for drying the person after bathing, and, it is claimed, will arrest cutaneous diseases, paralysis and local affections, while it imparts at the same time a healthful action to the skin and frees it from bad humors. A towel, prepared in the manner specified, will retain its virtues about two months, when the process will have to be repeated.

Copper.

The price of copper has a downward tendency at present, although there seems to be some doubt and uncertainty as to its future position. In England the market is not at all steady and prices vary greatly from day to day.

The recent decline was quite rapid and must have made uncomfortable those who had prepared for the opposite to occur. Consumers and speculators are both, however, deterred from operating on any extensive scale owing to uncertainty of future prices, and the amount likely to be put upon the market. Lewis & Son's Liverpool report of ores and metals for October, explains this sudden depreciation as having been partly caused by the failure of numerous weak speculators to carry through their engagements, necessitating the sale of their purchases as the prompts fell due; partly by the advantage taken of this fact by smelters to accelerate the fall in values by reducing their quotations for English copper; and partly by the prospect of dear money.

There is now no stock of Chile ore or Regulus in London, and importers have withdrawn all parcels to arrive entirely from the market, declining to sell at the low prices. The high price now paid for coal there is equal to an additional cost of 1s. 6d. per unit on smelting ore of 20 per cent. produce; ore and regulus have therefore no longer the same value per unit and the comparative value of regulus and bars is also changed. Chile exports to 2d of September were 37,957 tons fine against 28,451 tons at same time last year. Stocks of west coast produce were estimated at 20,125 tons fine against 18,860 on the 1st of September. Latest quotations according to Lewis & Son's Circular were £82 to £83 for good ordinary brands Chile bars, and £90 to £91 for Wallaroo, 16s. 6d. to 17s. per unit for regulus, and 16s. to 16s. 6d. for ore of 20 per cent. produce.

New Method of Assaying Quicksilver Ores.

In the Mining and Scientific Press, of April 13th, 1872, we gave a new method for the very exact determination of the amount of quicksilver in retorted amalgam and quicksilver ores by means of a gold-cornet in a small scale. This method was practised and published by Mr. Kustel. A similar method, that is depending on the property of gold to absorb the quicksilver vapors, has recently been discovered by A. Eschka, assayer in the General assay office at Vienna, and is performed in the following way:

The ore is pulverized fine and weighed out; of poor ore, containing only up to one per cent. of quicksilver, 10 grammes is taken; that containing from one to 10 per cent., five grammes; from 10 to 30 per cent., 10 grammes; and above 30 per cent., only one gramme is weighed out. The ore is introduced into a porcelain cup, with a level, ground edge, and then mixed with half of its weight of pure iron filings, by means of a glass rod, and the whole covered with iron filings. The cup is then covered with a concave cover of gold, the edge of which fits perfectly that of the cup. The weight of the cup-cover must first be noted. The concave cover is filled with distilled water and the cup heated by a flame, the point of which surrounds the lower part of the cup for ten minutes.

This time is sufficient to volatilize all the quicksilver, which is taken up by the gold cover. This is removed by the fingers, the water poured off, and the convex side washed in alcohol and dried in a water-bath. The increase of the weight of the cover shows the amount of quicksilver in the ore. The cover is freed from quicksilver by exposing it to a red heat, and the weight must agree with that first noted. Care must be taken not to inhale any vapors of mercury at this last operation and to perform it under a draft.

The cavity in the cover must be deep enough to receive water enough to cool it during the operation. The cleaning of the cover answers the purpose of removing the bituminous distilling products, if any, and also to hasten the drying of the cover in the water-bath, which takes from two to three minutes; the weighing of the cornet must be performed before it becomes cold. If very rich ore is treated, the quicksilver on the cover is in a somewhat fluid state, and may drop off, if it is not carefully taken from the cup. This may happen also in washing the cover in alcohol. In such a case all the alcohol is poured into the cavity of the cover, whereby the quicksilver globules are again taken up by the gold. Mr. Kustel, in his blow-pipe assay, adopted also fine iron filings in place of lime or soda, thus avoiding the inconvenience of having to dry the soda.

Another Artificial Stone Patent.—At the State Fair we examined with interest and satisfaction, a modest yet highly important exhibit made of the Union Stone Co'a manufactures, by Geo. G. W. Morgan, of Sacramento. The imitations of malachite, and other fancy and fine varieties of stone, were very beautiful, and must be seen to be appreciated. The Sacramento *Union* noticed the display as follows:

One of the most remarkable inventions of the age is to be seen in the lower hall. It is a series of specimens of artificial stone. Here we find soapstone, sandstone, granite, marble, and imitations of ivory. Among the samples is an elastic stone ball, or billiard ball, which you may throw into the air and let it fall a hundred times without breaking. Maj. Gen. Gillmore, the eminent engineer, who had charge of the United States forces before Charleston, South Carolina, was detailed by the Government to investigate into the subject of building stone, and reported as follows, the figure representing the crushing weight per square inch in pounds;

NATURAL MATERIAL.	
Granite, Patapsco	5,340
Granite, Quincy	16,300
Marble, Montgomery county, Pennsylvania	8,950
Sandstone, strong	5,600
Sandstone, Connecticut	3,319
ARTIFICIAL MATERIAL.	
Brick, first quality hard	4,368
Beton, Coignet's	7,500
Concrete, Ransom's	6,720
Frear Stone	4,500
Sorel, Union Stone Company	21,562

The patent right of the State is for sale, and we hope the opportunity to purchase it will not be allowed to pass from Sacramento. By the above report of General Gillmore it will be seen that this invention is greatly superior to all other similar inventions. It is said to be very cheaply manufactured. Surely here is a great chance for somebody.

New Incorporations.

California Dehiccated Fruit Co.—Oct. 17. Objects: The purchase, sale and drying of fruits and vegetables by means of the process known as the "Steven's Desiccating Process," and for the purchase and sale of the patent. Capital stock, $2,000,000. Trustees—Ben. Wellman, Theodore N. Hatch, Jesse Cheney, Pardon W. Browne, James M. Seawell, Geo. Bower and Nathan C. Paddock.

Whitman S. M. Co.—Oct. 18. Location: Indian Spring District, Lyon county, Nevada. Capital stock, $5,000,000 in 100,000 shares. Trustees—J. H. Crocker, J. K. Fields, and G. D. Crocker.

North Star Lenge M. Co.—Oct. 18. Location: Ely District, Nevada. Capital stock, $3,000,000 in 30,000 shares. Trustees—M. Tranor, George T. Knox, S. de Greayer, P. J. White and James Conlin.

Imperishable Pavement Co.—Oct. 18. Object: To manufacture imperishable stone blocks for covering sidewalks and roofs; to make curbs; to mine aspbaltum, and collect mineral oils and sell the same Capital stock, $300,000. Trustees—Peter Donahue, H. H. Haight, Eugene L. Sullivan, B. S. Alexander, William H. Raymond, D. C. McKuer, Charles J. Brenham, W. A. Aldrich, J. T. Dean, J. W. Stow, G. O. McMullin, F. H. Rosenbaum, William Blanding, C. J. Jansen and Rodmond Gihbona.

Lowell Hill Gravel M. Co.—Oct 22. Location: Placer county. Capital, $100,000 in 10,000 shares. Trustees—D. D. Colton, J. D. Fry, Charles E. McLane, A. K. P. Harmon and Charles V. Hohart.

Giant S. M. Co.—Oct 22. Location: Ely District, Lincoln county, Nevada. Capital, $3,000,000 in 30,000 shares. Trustees—S. P. Collins, E. L. Peckham, F. Ogden, J. J. Moynahan and George A. Treadwell.

A certificate of the increase of the capital stock of the Eugenia Gold and Silver Mining Company from $400,000 to $4,000,000, in shares of $100 each, was filed in the County Clerk's office, on the 21st inst.

Meetings and Elections.—At the annual meeting of the Baltic Silver M. Co., Ely District, the following Trustees were elected: P. J. White, S. G. Worden (President,) G. Atchinson, J.C. Bollinger, C. W. Davies, (Secretary).

India G. M. Co.—Oct. 19. Trustees: John Landers, W. Everson, J. L. Blaikie, J. H. H. Williams and David Wilder.

South Chariot M. Co.—Oct. 21. Trustees: Hill Beachy, G. W. Grayson, R. R. Givens, M. J. McDonald and Tyler Curtis.

Narrow-Gauge.—A movement is on foot to connect the city of Stockton, on the San Joaquin, with Visalia, in Tulare Valley, by a narrow-gauge railroad. It is to be called the People's Railroad, and a number of the principal business men of the former place subscribed liberally at a meeting recently held. A road of this description would be of incalculable benefit to the portion of country over which it is intended to run, and would materially assist the farming population on its line.

Planchas De La Plata.

The San Diego *Union* says that several persons have gone to investigate the recently-discovered silver mines on the boundary line of Arizona and Mexico, supposed to be the old mines known as the Planchas de la Plata. The vicinity of the mines has been overrun, and now, although the excitement is but a few weeks old, there are fully 1,500 people on the ground. Most of these are Mexicans.

As the mines are attracting a great deal of attention, we publish from the Tucson *Citizen* the following interesting translation of a statement made in a work entitled "Loa Apostolica Compañio de Jesus." It plainly refers to the "Planchas:"

That in the year 1769, on the frontier of the barbarous Apaches, in the country called Arizona, to the north of the Presidio of Altar, and near the "Agua Caliente," a rich mineral deposit was found, containing virgin silver. The discovery was made by a Yaqui Indian, who revealed it to a merchant who published it; that he found it on the side of the mountain whose ridge was about one-half league in length. By prospecting the ground to the depth of a few yards masses of pure silver were found weighing from one to two arobas each (an aroba is equal to 25 lbs.); that they afterward found many pieces weighing 20 arobas each, and one that weighed 140 arobas. The latter was found by a native of Guadalajara, who broke it up in many pieces that he might weigh it. The discoveries of such wonderful riches brought together a large number of people, who claimed and worked all the adjacent land, where some of them found pieces of silver smaller than those previously mentioned, and some found grains, and some found nothing.

If the re-discoveries turn out to be as rich as reported, a large number of miners from Nevada will flock into the Territory and assist in their development.

Our Agents.

Our Friends can do much in aid of our paper and the cause of practical knowledge and science, by assisting Agents in their labors of canvassing, by lending their influence and encouraging favors. We intend to send none but worthy men.

Wm. H. Rattenberry—California.
Frank S. Chapin—California and Oregon.
I. N. Hoag—Sacramento, General Agent.
F. M. Shaw—Southern California.
L. P. McCarty—General Agent.
Samuel Cushman—Colorado Territory.
A. C. Knox, City Soliciting and Collecting Agent.

A NEW BOOK ON MINING.

The Explorers', Miners' and Metallurgists' Companion; Comprising a Practical Exposition of the Various Departments of Exploration, Mining, Engineering, Assaying, and Metallurgy. The Most Practical and Comprehensive Work on Mining Subjects Extant. Comprising 640 Pages, and 81 Engravings. By J. S. Phillips, M. E. Price, bound in cloth, $10 (in coin); in leather, $12. Forwarded by mail, in cloth, $11.40, currency; in leather, $13.75. Issued and for sale by Dewey & Co., Patent Agents and Publishers Mining and Scientific Press, S. F.

Mining and Other Companies.

Owing to the time necessary to mail the present large edition of the M. & S. Press we are obliged to go to press on Thursday evening—which is the very latest hour we can receive advertisements.

Altona Gravel Mining Company—Location

of works, Grass Valley, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 3d day of October, 1872, an assessment of ten cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary, at No. 23 Merchants' Exchange, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the 2d day of November, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 25th day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

DAVID WILDER, Secretary.

Office—23 Merchants' Exchange, San Francisco, Cal.
oct5-5t

Excelsior Silver Mining Company—Location of works, Yellow Pine District, Nye County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 26th day of September, 1872, an assessment of Ten Cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin to the Secretary, at No. 340 Washington street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 29th day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, November 22, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

W. A. KOLLMYER, Secretary.

Office, 340 Washington street, San Francisco, Cal.

Indus Gold and Silver Mining Company—Location of works, Virginia City, Storey County, Nevada.

Notice is hereby given that at a meeting of the Board of Trustees of said Company, held on the 19th day of October, 1872, an assessment of fifty cents per share was levied upon the capital stock of said company, payable immediately, in gold coin of the United States, to the Secretary, at No. 24 Merchants' Exchange, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 23d day of November, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 16th day of December, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

DAVID WILDER, Secretary.

Office, 24 Merchants' Exchange, California street, San Francisco, Cal. oc26-4t

Kincaid Flat Mining Company—Location

of works, Tuolumne County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said company, held on the 18th day of October, 1872, an assessment of three dollars per share was levied upon the capital stock of said company, payable immediately, in United States gold coin, to the Secretary, at his office, No. 220 Clay street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the 21st day of November, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the tenth day of December, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. H. CORNELL, Secretary.

Office—No. 220 Clay street, San Francisco, Cal. oct9-4t

Lady Franklin Gold and Silver Mining Company—Location of works, Silver Mountain Mining District, Alpine County, State of California.

Notice is hereby given, that at a meeting of the Trustees of said Company, held on the 24th day of September, 1872, an assessment of fifty (50) cents per share was levied upon the capital stock of said Company payable immediately, in United States Gold Coin, to the Secretary of the Company, at 507 Montgomery street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the twenty-eighth day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on the eighteenth day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of the sale.

J. S. LUTY, Secretary.

Office, No. 507 Montgomery street, San Francisco, Cal. oc5

Louise Mining Company---Location of Works, Ely Mining District, Pioche, Lincoln County, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment, No. 3, levied on the 14th day of September, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificats.	No. Shares.	Amount.
Allen, O R, Trustee	336	50	$25 00
Allen, O R, Trustee	357	50	25 00
Allen, C R, Trustee	370	50	25 00
Baur, Otto	154	50	25 00
Baur, Otto	165	50	25 00
Baur, Otto	166	40	20 00
Baur, Otto	167	40	20 00
Burke, John	211	50	25 00
Burke, John	214	50	25 00
Burke, John	216	50	25 00
Burke, John	217	100	50 00
Burke, John	218	200	100 00
Burke, John	224	100	50 00
Baker, Henry, Trustee	275	5	2 50
Buttler, Jessie H	498	100	50 00
Coburn, S A	86	100	50 00
Coburn, S A	87	100	50 00
Coburn, S A	90	100	50 00
Coburn, S A	95	100	50 00
Coburn, S A	321	150	75 00
Chase, A K, Trustee	110	25	12 50
Chase, A K, Trustee	113	50	25 00
Chase, A K, Trustee	120	50	25 00
Chass, A K, Trustee	501	36	18 00
Cook, Chas. W, Trustee	249	200	100 00
Cook, Chas. W, Trustee	251	100	50 00
Cook, Chas. W, Trustee	252	200	100 00
Cook, Chas. W, Trustee	253	200	100 00
Cook, Chas. W, Trustee	254	100	50 00
Cook, Chas, W, Trustee	255	50	25 00
Cook, Chas. W, Trustee	256	100	50 00
Cook, Chas. W, Trustee	257	100	50 00
Cook, Chas. W, Trustee	258	200	100 00
Childs, Geo. E	174	100	50 00
Cavallier, J P, Trustee	399	500	250 00
Cavallier, J P, Trustee	400	200	100 00
Cavallier, J P, Trustee	401	300	150 00
Cavallier, J P, Trustee	441	50	25 00
Clark, L N	404	100	50 00
Cook and Page, Trustees	487	200	100 00
Dore, B, Trustee	139	100	50 00
Duval, W S, Trustee	391	50	25 00
Dixon, S, Trustee	397	50	25 00
Fawcett, S, Trustee	499	50	25 00
Gibbons, Henry, Jr	193	100	50 00
Gibbons, Henry, Jr	196	100	50 00
Gibbons, Henry, Jr	197	100	50 00
Geleich, V	156	50	25 00
Geleich, V	157	50	25 00
Geleich, V	158	50	25 00
Geleich, V	159	50	25 00
Grattan, O M	227	50	25 00
Grattan, O M	228	100	50 00
Grattan, O M	229	100	50 00
Golding, J	504	5	2 50
Golding, J	505	5	2 50
Golding, J	506	4	2 00
Golding, J	507	5	2 50
Golly, Leon, Trustee	430	100	50 00
Golly, Leon, Trustee	431	100	50 00
Golly, Leon, Trustee	433	300	150 00
Hatch, A D, Trustee	317	70	35 00
Herringhi, B	299	50	25 00
Hayward, Mary J	376	25	12 50
Hayward, Mary J	377	25	12 50
Hayward, Mary J	378	25	12 50
Hayward, Mary J	379	25	12 50
Hayward, Mary J	380	25	12 50
Hayward, Mary J	381	25	12 50
Hayward, Mary J	382	25	12 50
Haywood, Mary J	383	25	12 50
Hayward, Mary J	384	25	12 50
Hayward, Mary J	385	25	12 50
Hayward, Mary J	386	25	12 50
Hayes, Thos R	387	25	12 50
Hawkins, James, Trustee	394	50	25 00
Hussey, J L, Trustee	435	100	50 00
Hussey, J L, Trustee	449	200	100 00
Hussey, J L, Trustee	450	100	50 00
Herzberg, J, Trustee	457	100	50 00
Herzberg, J, Trustee	539	50	25 00
Hubbard, A O	520	1	50
Hewett, Georgiana Mrs	390	10	5 00
Iugerson, A W	244	50	25 00
Iugerson, A W	248	100	50 00
Ingerson, A W	508	36	18 00
Kenney, C A, Trustee	345	50	25 00
Lee, D	201	20	10 00
Lissak, L S, Trustee	336	100	50 00
Lissak, L S, Trustee	375	50	25 00
Lincoln and Howard, Trs	347	100	50 00
Lacour, L, Trustee	436	100	50 00
Lazare, L J, Trustee	524	50	25 00
Magee, John F	207	100	50 00
Maurice, W R, Trustee	388	50	25 00
Maurice, W R, Trustee	389	50	25 00
McGregor, Jos	497	100	50 00
Morganstins, S	519	15	7 50
Radlop, L	202	20	10 00
Raymond, S A	126	100	50 00
Raymond, S A	128	100	50 00
Raymond, S A	129	100	50 00
Raymond, S A	131	100	50 00
Raymond, S A	132	100	50 00
Raymond, S A	133	100	50 00
Raymond, S A	134	100	50 00
Raymond, S A	140	100	50 00
Raymond, S A	509	76	38 00
Richardson, E A, Trustee	302	50	25 00
Richardson, E A, Trustee	323	50	25 00
Richardson, E A, Trustee	324	50	25 00
Richardson, E A, Trustee	328	100	50 00
Richardson, E A, Trustee	350	150	75 00
Richardson, E A, Trustee	365	200	100 00
Richardson, E A, Trustee	405	100	50 00
Richardson, E A, Trustee	408	100	50 00
Richardson, E A, Trustee	410	50	25 00
Richardson, E A, Trustee	461	300	150 00
Richardson, E A, Trustee	463	100	50 00
Richardson, E A, Trustee	467	30	15 00
Richardson, E A, Trustee	470	100	50 00
Richardson, E A, Trustee	494	10	5 00
Richardson, E A, Trustee	496	200	100 00
Richardson, E A, Trustee	518	100	50 00
Richardson, E A, Trustee	525	200	100 00
Richardson, E A, Trustee	526	100	50 00
Richardson, E A, Trustee	529	100	50 00
Richardson, E A, Trustee	531	100	50 00
Richardson, E A, Trustee	533	200	100 00
Richardson, E A, Trustee	535	50	25 00
Richardson, W J	141	100	50 00
Richardson, W J	142	10	5 00
Richardson, W J	143	10	5 00
Richardson, W J	144	10	5 00
Richardson, W J	145	10	5 00
Richardson, W J	146	10	5 00
Rose, L S, Trustee	474	100	50 00
Sleeper, Geo, Trustee	341	100	50 00
Sanhorn, T C, Trustee	438	50	25 00
Sanborn, T C, Trustee	450	100	50 00
Sanborn, T C, Trustee	453	50	25 00
Sanborn, T C, Trustee	475	100	50 00
Sanborn, T C, Trustee	479	100	50 00
Sanborn, T C, Trustee	482	100	50 00
Sanborn, T C, Trustee	486	50	25 00
Sanborn, T C, Trustee	545	100	50 00
Sherwood, B F & Co, Trustee	513	100	50 00
Sherwood, B F & Co, Trustee	515	100	50 00
Sherwood, B F & Co, Trustee	516	100	50 00
Sherwood, B F & Co, Trustee	517	100	50 00
Winter, T P	511	5	2 50
Watson, W H, Trustee	343	50	25 00
Watson, W H, Trustee	344	150	75 00
Watson, W H, Trustee	412	100	50 00
Watson, W H, Trustee	414	100	50 00
Watson, W H, Trustee	417	100	50 00
Watson, W H, Trustee	418	100	50 00
Watson, W H, Trustee	419	100	50 00
Watson, W H, Trustee	420	100	50 00
Watson, W H, Trustee	423	100	50 00
Watson, W H, Trustee	425	200	100 00
Watson, W H, Trustee	427	200	100 00
Watson, W E, Trustee	489	50	25 00
Wilson, Wm M	304	50	25 00
Wilson, Wm M	307	100	50 00
Wilson, Wm M	308	100	50 00
Wilson, Wm M	313	25	12 50
Wilson, Wm M	314	25	12 50
Wilson, Wm M	315	25	12 50
Wilson, Wm M	316	25	12 50
Wessling, Wm, Trustee	466	100	50 00
White, U, Trustee	492	30	15 00

And in accordance with law, and an order of the Board of Trustees, made on the fourteenth day of September, A. D. 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, room 5 and 5, No. 302 Montgomery street, San Francisco, California, on Saturday, the ninth day of November, A. D. 1872, at the hour of two o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

WM. H. WATSON, Secretary.

Office, Room 5 and 6, No. 302 Montgomery street, San Francisco, California. oc26-3w

Nevada Land and Mining Company—Location, Spruce Mountain Mining District, Elko County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees, of said Company, held on the first day of October, 1872, an assessment of Eight cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the Office of the Company, Room 5, No. 302 Montgomery street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Saturday, the 2d day of November, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 23d day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room 5, No. 302 Montgomery St., San Francisco, California. oc12

Noonday Silver Mining Company---Location of works, White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 11th day of October, 1872, an assessment (No. 12) of twenty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 25 Hayward's Building, California street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 15th day of November, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the 4th day of December, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

CHAS. H. FISH, Secretary.

Office—Room No. 25, Hayward's Building, No. 419 California street, San Francisco, California. oct9

Ohio Consolidated Gold Mining Company of West Point, Calaveras County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 24th day of September, 1872, an assessment of Ten Cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary, at the office of the Company, No. 422 Montgomery street, Room No. 1. Any stock upon which said assessment shall remain unpaid on the second day of November, A. D. 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 23d day of November, A. D. 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

W. AUGUSTUS KNAPP, Secretary.

Office, 422 Montgomery street, over Donahue & Kelly's Bank se28-4t

Silver Sprout Mining Company—Location of works and mines, Kearsarge District, Inyo County, State of California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 26th day of August, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
E. B. Mott, Jr	44	200	$100 00

And in accordance with law, and an order of the Board of Trustees, made on the 26th day of August, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the salesroom of Maurice Dore & Co., No. 327 Montgomery street, S. F., on the 8th day of Novsmber, 1872, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

T. B. WINGARD, Secretary.

Office, Room No. 1, Second floor, No. 318 California street, San Francisco. oc12-4t

Silver Wave Mining Company—Location of works, White Pine Mining District, White Pine County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the Twenty-first day of September, 1872, an assessment of one dollar per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary of said Company, at the Company's office, 418 California street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Saturday, the Twenty-sixth (26th) day of October, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the Twenty-fifth (25th) day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

se28-4t J. W. CLARK, Secretary.

Office, 418 California street, San Francisco, Cal.

State of Maine Mill and Mining Company—Location of mine, Amador County, California.

NOTICE is hereby given that at a meeting of the Board of Trustees of said Company, held on the 17th day of October, 1872, an assessment of five cents per share was levied upon the capital stock of said company, payable immediately, in United States gold coin, to the Secretary, at the office of the company, No. 306 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 26th day of November, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 16th day of December, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

oc28-4t H. B. CONGDON, Secretary.

Caution---Victoria and Imperial Tunnel and Mining Company—Location of works, Little Cottonwood, Utah Territory.

Notice is hereby given that the following named shares, designated by the number of their respective Certificates, in the capital stock of the Victoria and Imperial Tunnel and Mining Company, were duly advertised, and sold at public auction by John Middleton & Son, Auctioneers, on Saturday, the 12th day of October, 1872, for delinquent assessments and accruing costs of advertising and sale, and will not be transferred by said company.

Names.	No. Cert.	No. Shs.	Amt. due.	Shs. sold.
Thomas Tildsn	52	200	$2400	25
Thomas Tilden	53	200	2400	25
Thomas Tilden	54	200	2400	25
Thomas Tilden	55	200	2408	30
Thomas Tilden	25	200	2400	40
Thomas Tilden	57	200	2400	25
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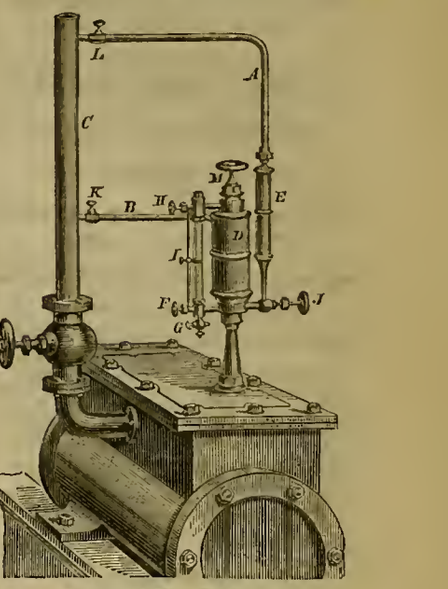

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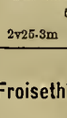

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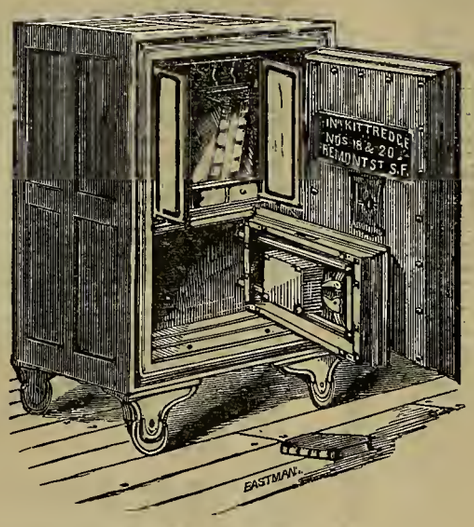

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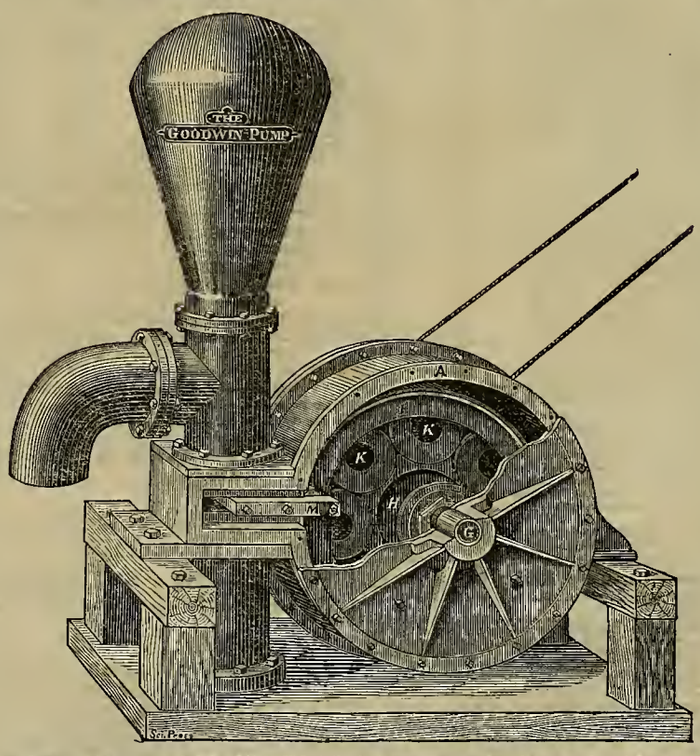

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Notice is hereby given, that the copartnership heretofore existing between A. J. Severance, Charles W. Randall and J. Gus. Burt, under the firm name of "Severance, Holt & Co.," is this day dissolved by mutual consent. A. J. Severance, having purchased all the interest of his late partners, will continue the business of manufacturing and selling Diamond Drills as before, under the style of A. J. Severance & Co.
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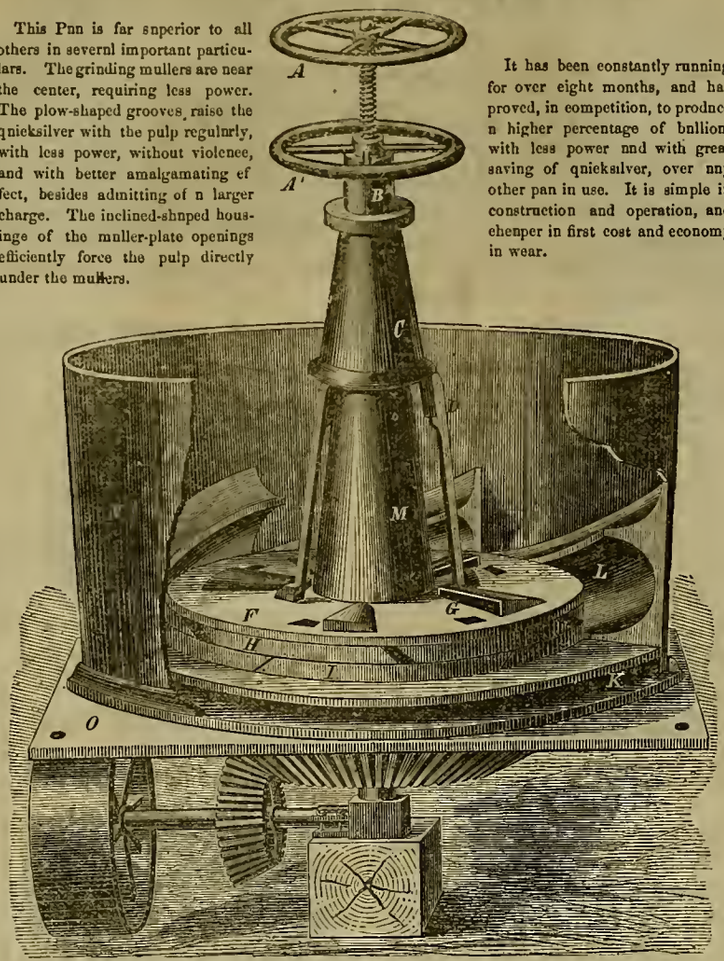

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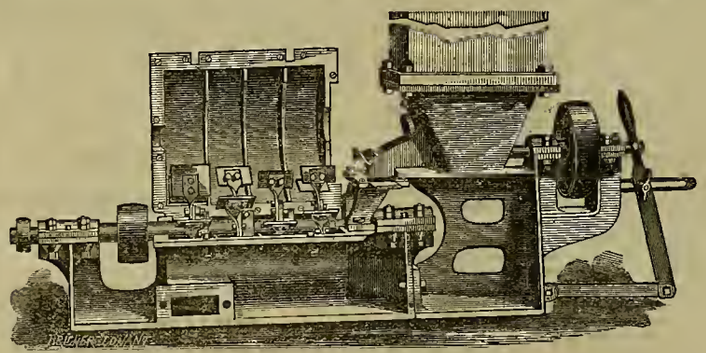

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LIGHT FROM THE WEST.—The spirit of progress has somewhat upset our old notions on the subject of light. We used to look to the East for knowledge in the arts, sciences, religion and everything else. We were accustomed to receive all good things from the Orient and all evil things as well. Plagues and contagious diseases, as well as literature and science, followed the course of the sun, and came to us from Europe and Asia. But lately we are reversing this order of things, for here comes to us from San Francisco the SCIENTIFIC PRESS, one of the very best papers of its kind in the world—fully up in the latest discoveries and inventions, and altogether a most valuable and ably conducted journal. —[Industrial Age, St. Louis.

RENO, Nev., October 19, 1872.—DEWEY & Co., San Francisco—Gentlemen:—I have just returned home. Received Patent Letters and SCIENTIFIC PRESS all right. And now allow me to say that your prompt, honorable and business way of securing Patents will ever be held in due regard by me; and it will be a pleasure to me to recommend you to my fellow citizens. Respectfully and truly yours, J. F. PEACOCK.

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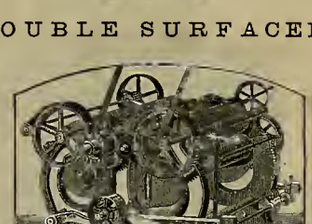

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7.15 A. M. (Daily). Cal. P. R. R. Steamer (from Broadway Wharf)—Connecting at Vallejo with Trains for Calistoga, Knight's Landing and Sacramento; making close connection at Napa with stages for Sonoma.

2.00 P. M. (Sundays excepted). S. F. & N. P. R. R. Steamer (from Broadway Wharf), connecting at Donahue with Trains for Cloverdale. Making close connection at Lakeville with stages for Sonoma.

2.00 P. M. (Sundays excepted). Stockton Steamer (from Broadway Wharf), touching at Vallejo, Benicia, and Landings on the San Joaquin river.

3.00 P. M. (Daily). San Jose Passenger Train (via Oakland), stopping at all way Stations.

4.00 P. M. (Sundays excepted). Passenger Train (via Oakland) for Lathrop, Merced, Visalia, Tipton, and Los Angeles, Stockton and Sacramento.

4.00 P. M. (Sundays excepted). Cal. P. R. R. Steamer (from Broadway Wharf) connecting at Vallejo with Trains for Calistoga, Knight's Landing and Sacramento.

4.00 P. M. (Sundays excepted). Sacramento Steamer (from Broadway Wharf), touching at Benicia, and Landings on the Sacramento river.

6.30 P. M. (Daily). Overland Emigrant Train (via Oakland)—Through Freight and Accommodation.

OAKLAND BRANCH.—LEAVE SAN FRANCISCO, 7 00, 8 10, 9 2½, 10 10 and 11 20 a. m., 12 10, 1 50, 3 00, 4 00, 5 15, 6 30, 8 15 9 20 and *11 20 p. m. (9 20, 11 20 and 3 00 to Oakland only).

LEAVE BROOKLYN (for San Francisco), *5 30, 6 40, 7 50, 9 00 and 11 00 a. m., 1 30, 2 40, 4 55, 6 10, 7 55 and 10 10 p. m.

LEAVE OAKLAND, *5 40, 6 50, 8 00, 9 10, 10 00, and 11 10 a. m., 12 00, 1 40, 2 50, 3 50, 5 05, 6 20, 8 05 and 10 20 p. m.

ALAMEDA BRANCH.—LEAVE SAN FRANCISCO, 7 20, 9 00, and 11 15 a. m., 1 30, 4 00, 5 30, and 7 00 p. m. (7 20, 11 15, and 5 30 to Fruit Vale only).

LEAVE HAYWARDS (for San Francisco), *3 45, 7 00 and 10 45 a. m., and 3 30 p. m.

LEAVE FRUIT VALE, *4 40, 7 35, 9 00 and 11 20 a. m., 1 30, 4 05 and 5 30 p. m. *Except Sundays.

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MINING AND SCIENTIFIC PRESS.

An Illustrated Journal of Mining, Popular Science and Progressive Industry.

BY DEWEY & CO., Patent Solicitors.

SAN FRANCISCO, SATURDAY, NOVEMBER 2, 1872.

VOLUME XXV. Number 18.

Mineral Land Decision.

An important decision has recently been rendered by the Commissioner of the General Land Office with regard to the title of mineral lands on those patented to the Central Pacific Railroad Company. People had in many instances already located mining ground on some of these sections, and other parties who had purchased the land from the railroad company found them in possession. This naturally gave rise to disputes as to priority of title, which the Commissioner decides in a manner to show that a possessory mining claim which existed at the time the Government granted the land to the railroad Company, can be patented, and the patent will hold good over any given to the company, or conveyances made by them to private parties. The decision, which we append, will serve to put a stop to further litigation:

"Inasmuch as all known mineral lands, excepting coal and iron, are *expressly* excluded from the railroad grant, and from *all patents issued thereunder;* any party having *bona fide* subsisting mining claim upon a tract of land, at the date of the erroneous patenting thereof to the railroad company, is in no way debarred from proceeding to obtain a Government patent for such mining claim, in accordance with the mining statutes of Congress; it being only under such statutes that valid title to known mineral land can be acquired; but when lands have been patented to the company and a mining application is filed therefor, either the *company or its grantee* may come forward, provided they appear within the time fixed by the mining act for adverse claimants to disprove the mineral character of the land, should they desire to do so."

Grains of Science.

[Written for the PRESS.]

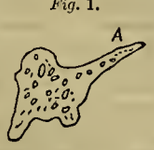
Hands.

Did you ever think Nature always succeeded in making the thing she set out to do in the first trial? In the workshop of the universe there are no failures. But millions of patterns are started and thrown aside unfinished, or left to answer a temporary object, and though crude and transitory, they win a certain achievement. The primary effort is generally as objectless to appearance as the shapeless segment of a rock out of which shall result a "Greek slave." The earliest recognized attempt to make a hand came so far short of it, none could tell what particular object was intended. But when a beautiful hand is at length formed, we can trace back the idea in kindred resemblances and finally end in the neighborhood of its beginning, with a coarse prong. Feet were made before hands. They were needed first. Before the mould of the hand proper was completed, the foot performed many of the offices of the future hand. The hand therefore, is the out-growth of the foot.

Let us bring forward a handful of specimens and see how nature handles her prentice patterns.

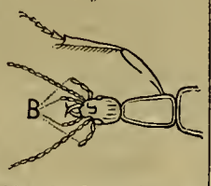
The *Amœba* is able to protrude a hand, which it extemporizes for the occasion of its use. There is a great deal to be said of the *amœba*. It is typical of a wide range of idea. At present we only refer to it for the embryo conception of a hand. The point, A, reaches out, and if it touches a morsel of food the point contracts while the body swallows the nutrient object simply by surrounding it. The finger returns and is fused with the body.

Fig. 1.



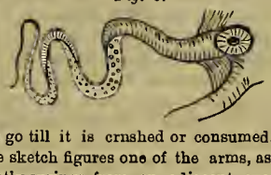
The palpi situated about the mouth of insects are dimly prophetic of hands. These creatures are endowed with one or more pairs of palpi, which like the movement of fingers, serve to direct food to the mouth. The dotted lines from B, in the figure, indicate two pairs of palpi of one of the beetles.

Fig. 2.



The cuttle fish *(sepia)* possesses neither hand nor foot, but its organs of prehention are monster fingers which at once do the work of feet, arms, hands and fingers. They lay hold of an object never

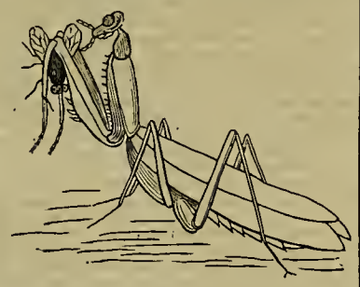
Fig. 3.



to let go till it is crushed or consumed. The above sketch figures one of the arms, as it apparently springs from an adjacent eye. The elephant's trunk affords but a faint idea of a hand terminating with a single finger. It can turn the crank of a hand organ, and pick up a penny, but it cannot thread a needle. This member is to be classed with the palpi of insects, being an appendage to the mouth.

One of the next steps toward working out the problem of the hand is seen in the *Mantis*

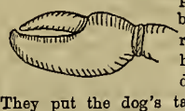
Fig. 4.



religiosa which is enabled to capture its prey with its fore feet. This creature, like squirrel and bear, uses its fore feet so cleverly, we are led to suppose they could use hands much better if they had them.

A solid hand with its opposing thumb is outlined in the lobster's claw. It resembles a hand in the same degree the mitten resembles the glove. This more complex though single member, answers the prehensil purpose of both feet above referred to. A hunter with his dog and a fish peddler with lobsters met. They put the dog's tail under the lobster's thumb. The animals suddenly started off, one after the other, neither heeding the whistle of his owner to return. The lobster swiftly followed the quadruped home. It was nip and tuck. Tuck kept his length ahead; he betrayed emotion. Nip held his own.

Fig. 5.



We cannot strain the vision of our subject far enough to see a hand in the fore legs of the sand-wasp. But its motions when at work in digging are so adroit as to attract attention. With movements almost as rapid as their wings in flight, they will dig and throw a continuous spray of sand under the body and between the legs a distance of some three inches in the rear, similar to a dog when he digs for a squirrel.

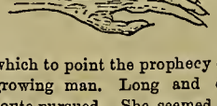
The frog's foot reaches into the pattern of a hand quite perceptibly, lacking one finger to the hand. With one foot it will endeavor to brush a smarting drop of nitric acid from the skin of the opposite limb, even after decapitation,—which shows not all the presiding *will* force occupies the head. Each foot of the more perfected lizards are endowed with the full number of five digits. At this stage of development the imagination is not taxed to perceive the palmated figure well asserted. But the thumb we saw rough-hewed in the lobster, seems not to have kept pace with the rest of the hand. It was then individualized both as function and organ. In the lizard the organ is a kind of supernumerary, but without special function.

Fig. 6.

Fig. 7.

What a fund of meaning there is in the fact, as we find the model of the hand perfected in the monkey. It consummates an era in structural economy. Here nature appears to have made a pause, as if to shake hands over a great victory. She has now an index *finger*, with which to point the prophecy of the future outgrowing man. Long and devious was the route pursued. She seemed so elated with her success, and the achievement proved so handy, she tried to put one on each of the four extremities of all the monkey tribe; and being the best and latest thing of the kind—though hairy and rough—it was handed down the finishing grade of living mechanisms, to be bleached and polished in man.

Fig. 8.



Thus millions on millions of trial steps were made within the realm of creatures of lesser wants, ere the graceful hand of the human period was produced. A. S. HUDSON, M. D.

Oakland, Oct. 1872.

Narrow-Gauge.

We had the pleasure this week of meeting Mr. N. Byers of the *Rocky Mountain News*, the pioneer paper of Colorado. Mr. Byers says that the narrow-gauge railroads in operation there are undoubtedly a success and will be of great benefit to Colorado as they would be to California. In all rocky and mountainous regions the narrow-gauge roads he deems far superior to those of the old style, from the fact that engineering difficulties are much more easily overcome and for economical reasons.

The town of Pioche, Nevada, now the centre of a most productive and busy mining locality is particularly in need of outside railroad connection, and the *Review* suggests that a narraw-gauge road be constructed from there through White Pine and Lincoln counties. That paper says the traffic between the mining towns of those counties, including Hamilton and Pioche would pay a good profit on the cost of such a road. With a narrow-gauge railroad on the route proposed, lumber and wood for buildings and mines and for fuel could be laid down at Pioche at one-half the present rates. The road could be extended through to the Colorado river and to the mining regions of Arizona with great benefit. We believe the narrow-gauge will also prove extremely desirable in many of the valley districts of California.

The Diamond Question.

Notwithstanding all that has been said with regard to the reported finding of diamonds in Arizona and the return of several parties sent out to verify the original reports, there appears to be as much uncertainty with regard to the real facts in the case as there was when the reports of diamond discoveries on our southern border were first promulgated. It is evident that the persons most interested in these discoveries, whether of the original company or of any of the numerous companies since formed, have no new developments to make public. It has been stated from time to time, that additional finds of valuable stones have been forwarded to this city and elsewhere; but the whereabouts of such finds, to which any considerable value can be attached, appears to be unknown except to the writers of sensational articles for the daily press who are expected to find something new every day, for the gratification of their gaping readers, and who appear to care very little as to the reliability of what they write so long as it is read and made the sensation for the day. Without at all intending to express any disbelief in the reported finding of diamonds in New Mexico, we are still constrained to say that so far we have been unable to put our finger upon a single established fact beyond the well-known exhibition of diamonds in this city by the original Roberts-Harpending Co. The intimation, by some English diamond merchants, that those jewels were purchased in England, does not seem to have much weight, in the light that has recently been thrown upon the matter. The circulars with regard thereto, which have been gotten up and widely circulated, betray upon their very face the interest which has prompted their circulation—the fear that the reported discoveries may prove true and thereby seriously affect the diamond market of the world before said merchants can place themselves in a condition to meet such an emergency with safety to their financial interests. The argument is merely negative and inferential in character.

In the light of the long admitted fact that diamonds have heretofore been found not only in New Mexico, but in Wyoming and various places of California as well, it will not do to proclaim the impossibility or even the improbability of the Roberts-Harpending find. The real question would seem to be as to the location, extent and richness thereof. Why should we assume in view of the abundant occurrence here of all other rich treasures that we cannot have diamonds to complete the list? There is no reason why we should discourage exploration when we have thousands of able bodied and willing explorers who are idling away their time upon the streets. We would not hold out inducements of anything like a certainty of reward for prospecting for diamonds in New Mexico; but so long as we are daily accepting reports of new discoveries in Utah and Nevada, we should not totally ignore similar reports from the adjoining territory on the South.

Even if no further developments are made than those now before the public, we have reason to believe there will be quite an exodus thither in the spring, for which, if no other benefit is derived, a large and valuable territory will be opened up to cultivation, where both the miner and the agriculturist will doubtless find a profitable field for labor.

SUBMARINE CABLE.—Hallidie & Co., of this city, have just completed the first submarine cable ever manufactured in this State. It is in two immense coils, and will be shipped to its northern destination in a few days.

Notes on the Reduction of Gold Ores.

BY H. A. THOMPSON, M. E., OF MELBOURNE.

[Concluded.]

In most instances the gold obtsined in these trisls is free gold, which ought to have been extrscted by the ordinary sppliancee alresdy considered, had theee been efficient and suited to the work. Let our crushers try any method of saving the gold they are now losiug, which their experience msy suggest, but no conclusions should be drawn from euch trials until it hse been sscertained by exact asssy what gold is left in the sand after it has been operated on.* Any one entering on the path of experimental research should hold his opinione and theories loosely, prepared to absndon or change them as each addition to his experience msy direct; and unless he is imbued with this spirit, it would be almost better to fall back into the ranks of those who hold that ignorance is bliss.

Taking the queetion as it now stsnds, it has certainly been proved in the most convincing wsy—viz., by prsctical working on a large scale, carried on for seversl years—that the coarser particles of the sulphides in the wsete tsilings, msy be sepsrated, and the gold extracted by a procese which even now showe a profit of over seventy per cent. of the vslue of the gold obtained, and that in desling with eulphides contsining under three snd a half ounces of gold per ton, thus showing that even one ounce of gold per ton would do more than pay the cost of operating. With the richer sulphidee present on most of our gold fields, the profits would be proportionately larger.

These facts are incontrovertible, and they have been open to any one who would have enquired for the last three years; yet, strange to say, they have attracted little attention, and even when pressed upon the notice of mining companies, it is difficult to overcome the indifference which exists in all mattere connected with the improvement of the great interest of the colony.

When the erection of a plant for the extraction of the pyritous gold would be inconvenient, the richer sulpbides might be ehipped to England, where an unlimited market will be found for them. One parcel sent there was sold by its gold contents, at the rate of £3 10s. per ounce, and the agents reported "that as the working of theee ores becomes better understood in England (a result immediately consequent on a steady supply) so a keen competition will arise, and an extreme value be realized."

A very large proportion of the sulphidee are crushed so fine that they cannot be eeparated from the waste sand by the plans hitherto used; and, for several years past, experiments have been carried on, with the view of discovering some dressing machine that would effect this object. A percussion table, so modified as to remedy the defects of that ore dresser, has been designed and worked for some time past hy the writer; the trials hitherto made indicating that it will save a very large proportion of fine pyrites, which has up to this time, eecaped from all other machines tried. The object of these notes, however, is not to press on the notice of the mining community an invention in which the writer is personally interested, and where doubts might be felt as to the accuracy of resulte obtained hy him in working these tablee. But the question of a more intelligent application of the principlee on which the methods adopted for the reduction of gold ores should be based, and of the saving of the pyritous gold, is in a different position. Here we have facts and statistics to rely on, over which the writer has no control, and such ae no reasonable man can doubt. To the enquiry, if on one mine where the sulphides are comparatively poor, and in small quantities, over £2,000 per auum can be realizeu by operating on them, what would be the effect of the general adoption of the system on the mining interest of the colony. Only one reply can be given. It is for those interested to determine how long they can afford to throw away gold needlesely, and neglect the profits that might be derived from this source; but in no other pursuit than gold mining would a matter of such importance to its successful prosecution be passed over, even for an hour. The market for gold is practically an unlimited one, so that the price is uniform; and there can hardly be a stronger illustration of the beneficial action of competition on human progress, and the apathy and want of enterprise attending its absence, than the present state of this question.

Both in the mechanical and metallurgical operations attending the treatment of gold ores, the plan followed should depend on the character of the gold and the minerals aesociated with it in the vein, instead of one system being employed for all, whether it is adapted to the material to be operated on or not. The loss with the beet arrangements must be a large one, considering the great value of the metal obtained, and therefore every aeparate part of the work ehould be carefully watched, and its action and results investigated; for little improvement can be expected unless the degree of efficiency attained, and the extent and character of the difficulties to be overcome, are first known. For this purpose some metallurgical knoweldge is no doubt required; bnt that necessary in the present case is of such a simple character as to he within the reach of every man posseesed of ordinary ability, and there is no excuse for any one accepting the responsibility sttending the conducting of a crushing establishment, without making himeelf acqusinted with the principlee on which the operatione must be based, if they have to be carried on creditably to himself, or with the greatest amount of profit to the company, who have entrusted their business to him.

We are inclined to look hack to the days when the rich surface quartz was broken up by hand, or by eome roughly constructed machine, with mixed feelings of wonder and pity for the ignorance which then prevsiled. In a few yesrs we shall probably regard the waete of the preeent time in a eimilar light, and the eooner we set about providing a remedy for the exieting evils, the hetter will it be for all parties concerned.

APPENDIX.

The following description of a plsn used for testiug the vslue of tbe waste, may be of some uee to those not alresdy acquainted with it:

Sampling from Stamps.—When the object is to ascertsin the vslue of the tailings after leaving the ordinary process for extracting the gold, the plan adopted may be ss follows:—

Take a new bucket (to be kept solely for this purpose), and place it under the epout carrying off the tailings from the mills, until it ie full of ssnd and water, not allowing it to run over. This should then be emptied into a filter—the process being repeated six or eight times in the twenty-four houre.

To form the filter, take an ordinary cssk with one end out, and a hole at the bottom to allow the water to run off. This cask is set on end, and a piece of canvae or strong calico ie thrown over it, and thrust down eo as to form a hag in the cask,— a hoop being elipped on to keep it in its place, and a loose lid fitted to the cask to prevent dust or gold from getting iuto it. The water gradnally filters through the canvas or calico, leaving the solid matter behind. After the process hae been continued for a few daye, the contente may be emptied into a clean tub, well mixed together, and the quantity required for assay taken out.

Sampling from Heaps.—Sections should be opened on different parts of the heap, and a cut taken from the top to the bottom of each, so as to get about an equsl quantity from each section, and the sand so obtained should be well mixed together.

In sampling both from the mill and heap great care should be taken to use enamelled dishes, clean tuhs, etc., to make eure that the gold obtained belongs to the sample, and has not come from any other source. Unlees this is attended to, the result of the assays oannot be depended on.

Amount of Sulphides.—This may be roughly determined by taking, eay fifty-six pounds from the sample when dry, and washing it several times over with great care, to eeparate the sulphides. The latter may then be dried and weighed, and the amount per ton easily calculated.

Amount of Gold.—The aecay for this should be first from the general sample of tailinge, and eecond from the clean sulphides obtained as described ahove. If an exact assay is required, one or two pounds weight of each (taking care that these are fair specimens of the bulk), may be sent to some assayer of standing, who will make a return of the total gold contents that can be depended on.

Or rough assays may be made on the spot, which, although not giving the full amount of gold in the sample, will yet come within fifteen per cent. of it, if carefully carried out in the followiug way:—

Assay by Amalgamation.—The sample to be tested must be dried and weighed. If it is a rich sulphide, one pound weight will give a sufficient trial—if poorer material, from two to five pounds may be used. The first point is to roast the aand, and this may be done over an ordinary fire, in an *iron* frying-pan, or on an iron plate. The sand should be epread thinly on this, brought up to a red heat, and frequently rsked to expose every part of it to the action of the air. The roasting should be continued until no smell of sulphur can be felt on bringing a portion of the sand close to the face; and to finish it a smart heat should then be kept up for half-an-hour. If in the amalgamation the mercury is affected, this will probably arise from imperfect roasting.

When the sand is taken off the fire, it should be left to cool for a short time, and then be rubbed to a fine powder in a wedgewood mortar; an iron one might have gold adhering to it. A convenient quantity (say from half a pound to a pound) of this may then be taken, and sufficient water added to *damp* the sand, and make the particles adhere together. This is placed in the wedgewood mortar, with from two to three ounces of mercury, and the whole ground together for twenty minutes. The mercury will break up into globules, and be distributed throughout the damp sand. Water must then be added, and the pestle worked slowly round, when the mercury will collect again. The sand should then be washed off, and the process repeated (using the same mercury) until the sample has all been operated on. The mercury must then be carefully washed, to free it from every particle of quartz or iron, as theee would otherwise remain with the gold, and render the assay incorrect.

The easiest way of thoroughly cleaning the mercury is to pour it from one saucer into another several times, washing the eaucers each time they are emptied to get rid of the particles adhering to them. The water should then be taken off with a *clean* sponge, or piece of rag, and the mercury covered with nitric acid. The acid will first be colored green, then orange fumes will be given off, and as it becomes ssturated with nitrate of mercury, it will clear again, when the acid should be poured off, and a freeh charge added. Ae soon as the mercury is all dissolved the gold will be seen in the oup or glass vessel used, in the form of a dark-brown powder. The acid should then be poured off, and clean water added several times to wash out any acid that may still he adhering to the gold. The latter may then be dried and weighed. Before ueing mercury for an aseay, a small portion should be dissolved in nitric acid to make eure that it does not contain gold.

If, from any carelessness, the white nitrate of mercury is deposited, it is better to stop, and wash the mercury clean as described above, before going on with the process. The sample of gold obtained should also be examined with a magnifying glses, and if there are any particles of quartz, or other extraneous matter still mixed with it, an allowauce should be made for these in weighing. Fine scales that will weigh to the twentieth part of a grain should be ueed for weighing, and this should be done as soon as the sample ie dried, for the gold is in such a fine stste of divieion, that a portion is almost certsin to be lost in handling it.

With care aud a little experience the assay by amalgamation will be found sufficiently accurate to guide ordinary work, although the return will alwsys be less than the sctual gold contents of the sample; but it should not be entirely relied on, as the presence of some minerale might seriouely affect the result. Occasionally, therefore, correct assays should be obtained, both as a check on the rough aesays, and aleo in cases where great exaotness is required.

* This caution is applicable to other places besides this colony. One of the largest gold mining companies of South America for years took great credit to themselves for the large returns obtained in re-treating a portion of their tailings. When the work came to be closely looked into, it was found that out of 45 ozs. of gold contained in the 50 tons re-treated daily, they obtained about 7½ ozs., a result anything but satisfactory.

Topography of the Great Basin.

In May last Dr. Blake made aome remarks before the California Academy of Sciences, on certain pointe connected with the position and height of the Great Basin in Humboldt County, Nevada, and read a paper at laet meeting on the same subject, which will be interesting to people on this coaet. In his previous paper, Dr. Blake stated that the divide hetween the watera of the Great Basin and the Columbia was situated much further to the south than the position usually assigned to it on our maps, and that its elevation was much lees than is generally stated. Having recently visited this section of country, he was now able to furnish more accurate data as to the position and height of the divide across which the waters of the Great Basin escape. As regards the geographical position, it has been arrived at by oomputation from the observed latitude and longitude of Fort McDermott. The course from Winnemucca was determined by compass, and measured by the roadometer, and the latitude and longitude of the point thus aecertained, was arrived at by computation from that of Fort McDermott, the nearest point at which any accurate astronomicsl observations have been made. The poeition thus formed is 41 deg. 33 min. north lat., 113 deg. 29 min. eaet long. The height of the divide is 590 feet above the valley at the place where the river makes a bend to the southweat to lose itself in the Black Rock Desert, and 390 feet above the level of the Humholdt Valley at Winnemucca, and 460 feet above the head of the Puebla Valley. It is formed of one of the spurs of the Vicksburg range, and the gap in the range extends, at about the same level, for four milcs in a southeasterly direction, the easterly end being rather lower than the weeterly. From the north side of the divide two valleys run, one directly opening into the north end of Puebla Valley, and the other joining the Wyllie Creek Valley, hut opening into the main Puebla Valley a few miles further north. From the north end of Puebla Valley the waters all run north. Opposite the etation at Trout Creek, about 18 miles from the head of the valley, there has been a fall of about fifty feet, and the waters of the creek run smooth from the station for six miles before spreading to form a lake; the first two miles with a fall of thirty feet to the mile, so that the valley at the sink of Trout Creek muet be 100 feet lower than at the head. To the north of the aink of Trout Creek, from the streams running from the south side of Stern's Mountain, these streams form an extensive seriea of lakes, for some milee along the foot of the mountsin; and, although there is no distinct outlet into the waters of the Owyhee, yet the waters from these lakes break out in a series of largs springs, on the east side of a low divide, forming the head of Crooked Creek, whioh after a course of about fifteen miles, joins the Owyhee. There can be no doubt, Dr. Blake thought, but that the waters of the lakes along the foot of the mountain, are comparatively sweet and drinkable; which would not he the case were there no drainage for the water. In fact it is highly probable, that the waters of Trout Creek are drawn subterraneously into the waters of Stern's Valley, as fish live at the foot of the oreek, which they would not do, if the whole of the waters were removed by evaporation.

From these facts it is evident that the divide between the waters of the Great Basin and of the Columbia, is the ridge he had pointed out, and that instead of being 1,800 feet ahove the level of the Humboldt, it is not more than 400 feet, in about the same Meridian, 1,000 feet above the lowest part of the sink of that river, and 600 feet above the level of the Sslt Lake Basin. Whether this ie the lowest divide between the wsters of tha Columbis and the Great Basin, further investigation must determine. The largest beach-marke which are so plainly vieible in many plsces on the eides of mountain ranges, from the Waheatch Mountaine to the Sierras, are, Dr. Blake thinks, formed at about this elevation, so thst it is probsble, at lesst for a long period, the watere of the basin stood at about the height of the divide indicated. He was of the opinion that there are other places in which the present edge of the basin will be found, low on each side of the upper end of the Santa Rosa range of mountains, at the head of the west fork of Queen's River to the westwsrd; and also at the head of Paradies Valley to the esst, low paeses undoubtedly exist. From their appearance the Doctor believed they were higher thsn that in the Vicksburg range. Lesding up to the divide from the south is a broad valley which grsdually rises about 600 feet in a distance of 24 miles. To the north of the divide are two broad vslleye separsted by a low spur of granite with bsealtic axis. The extent of these valleys are such as to preclude the possibility of their having been formed by any drainage from the surrounding hills.

Another indication of the existence of strong current flowing to the north in thie part of the bssin, is furnished by a long promontory of gravel, stretching out from tbe north end of the Bottle Creek range, and which was evidently formed by the meeting of two powerful currents from the eaet snd west side of the range in their course toward the divide. This bsnk of shingle extends about three miles from the point of the mountain in a northerly direction. It has been cut through by Queen'e River, which here makea a bend to the south.

The gravel ridge extende about a quarter of a mile beyond the river, its point apparently having been washed away by the waters from Wheeler Creek. As already etated, the height of the divide above the level of Qneen's River Valley is ahout 600 feet, but Dr. Blake is of the opinion that other outleta must exist, which allowed the waters of the basin to attain a still lower level before their disappearance solely, by evaporation, began. There must, however, have been a large body of water left to disappear by evaporation, as the concretionary deposits which are found at an elevation of 200 feet above the level of the valley. They could only have been deposited as the waters became concentrsted by evaporstion. He was of the opinion that Queen's River Valley, and a large extent of country to the south and west of it, formed part of a secondary basin in which water to the depth of 300 or 400 feet must have disappeared by evaporation.

Over the whole of the area of the secondary baein unmistakable evidences are seen of the gradual evaporation of a large body of water. Not only are the rocks and boulders surrounded with a thick coating of concretionary matter, hut every solid body that was beneath the surface of the water seems to have afforded a nucleus for its deposition. Large numbers of shells are found on the surface of the ground entirely encased in the concretionary subetance to the thickness of two or three inches. Dr. Blake proposes to describe more fully the structure and composition of theee deposits in a future paper.

The eastern edge of this secondary baein is formed by the Santa Rosa mountains; on the north is the high land between the Vicksburg and the Santa Rosa ranges; and the low divide ia between the divide and Puebla Valley, directly south of the Bottle Creek range. The basin is separated from the valley of the Humboldt by a low range of hills about fifteen miles north of the latter river. As to its extent further to the westward the Doctor has no data. It certainly includes the Black Rock Desert, snd in hia opinion a considerable extent of country to the south and west.

Professor Davidson did not entirely agree with Prof. Blake's theory ae to the promontory of gravel indicating the existence of a strong current flowing to the north. He did not think that would cause so large a ridge as the Doctor described. Some little discuesion ensued on this point, which was not definitely eettled, and the Academy adjourned.

The College Courant.—This excellent publication has recently been placed under new editorial management, and numbere among its contributors some of the most distinguished college profeseors in the country, such as President Chadbourne, of Williams College; Ex-President Woolsey, of Yale; President Barnard, of Columhia; President White, of Cornell University; Professor Winchell, of Michigan University; Professor Tyler, of the same; President Porter, of Yale; Profeesor Hitchoock, of Dartmouth, Professor Bascom, of Williame; Professor J. D. Dana, of Yale; Professor Dolbear, of Bethany; Professor Sewall, of Bowdoin; Professor Lacroix, of Ohio Wesleyan University, and Professor Marcy, of North western University. The book-notices in this Journal are always good, and the editoriala are on a variety of topics interesting to educated persons. It addresses itself, therefore, to all people of culture, especially to the nation's educated journalists, teachers and the college community. The subscription price of the *Courant*, which is published in New Haven, Conn., is $4 per year, or it will be sent for three months on trial for $1.

MECHANICAL PROGRESS.

Fragrant Bisulphide of Carbon.

It will be a matter of interest to some of our readers, says the *British Journal of Photography*, to knowu that the nsually offensive liquid, bisalphids of carbon, can be obtained frse from unplsasant smsll, and this as an article of commerce. The vslae of the liquid ae a solvsnt for resin and other purposes is very well known, bnt its extrsmely unpleasant odor had hitherto greatly limited its use, notwithstanding ths fsct that it is very much cheaper than sther, aad can he employed for many of ths purposes to which ether is at pressut solely applied.

We do not know by what process the commercially purified bisulphide is prsparod; but, on a small scale, the following plan succseds very well:—Shake up ahont one per ceat. by weight of corrosive sublimate with the liquid bisulphide, and allow the two bodies to stand for eeveral days with repeated agitation. Some sulphur compouuds appear to be removed in great part or decompoeed by this treatment, for the mercnry salt is rendered nearly black, owing to the formatioa of sulphide ot mercury. This treatment so far reduces the unpleasant smell that, in distillation, a comparativsly sweet-smelliag liquid is obtained; but a much better product is prepared if the bisulphide, after the treatmeut with the corroeive sablimate, be mixed with one-third of its volume of almond oil, and then distilled after the mixture has rested for some time. Of course the bisulphide only distils over, since the oil is not volatile, but the former is now found to possess a rather agreeable ethereal odor. It is probable that the oil acts in somowhat the same way that fat or oil does in retaiuing the perfumes of flowers. In the south of France this power is taken advantage of for the extraction of the delicate odoriferous principlés of flowsrs; but we employ the oil, in the case of the bisulphide, to remove a very nnpleasant smell. The treatment is in both cases effective, whatever its *rationale* may be, and we can convert bisulphide of carbon into a liquid of agreeable ethereal odor. Now that the purification has been effected on a large scale, we hope to see the bisulphide employed for msny photographic purposes for which its nse has been hitherto greatly limited.

It ie possible that this new fact with regard to bieulphide of carbon may have an important bsaring on the possible nse of that snbstance, as an assisting agent in more fnlly economizing the nse of steam by a supplementary engine. Any leakage (and it must be quite impossible to entirely avoid such a contingency) would render its use extremely objectionable, on account of the almost ineufferable etsnch arisiug from ite presence, in even a minute qnantity, in the atmosphere.

Mechanical Skill in China.

A most remarkable evidence of the mechanical science and skill of the Chinese so fsr back as 1600 years ago is to be found in their snspended bridges, the invention of which is assigned to the Han dynasty. According to the concurrent testimony of all their historical and geographical writers, Sangleang, the commander of the army nnder Baon-tsoo, the first of the Hans, nndertook and completed the formation of the roads through the monntainous province of Shense, to the west of the capital. Hitherto its lofty hills and deep valleys had rendered the communication difficult and circnitons. With a body of one hundred thousand laborers he cnt passages over the mountains, throwing the removed soil into the valleys, and where this was not sufficient to raise the road to the required hight he constructed bridges which rested on pillars or abutments. In another place he conceived and accomplished the daring project of snspending a bridge from one mountain to another across a deep chaem.

These bridges, which were called by the Chinese writers, very appropriately, flying bridges, and represented to be numerous at the present day, are sometimes so high that they cannot be trsversed without alarm. One still existing in Shense stretches fonr hnudred feet from mountain to mountain, over a chasm of five hundred feet. Most of these flying bridges are so wide that four horsemen can ride on them abreast, and balustrades are placed on each side to protect travelers. It is by no means improbable (as M. Panthier snggests), as the missionaries to China made known the fact more than a century ago, that the Chinese had suspended bridges, that the ideas may have beeu taken from thence for similar construction by European engineers.

To Rennea Glue Wateapaoof.—The liability of glued articles to come to pieces when exposed to the action of water, eepecially hot water, is familiar to every one. By adding to the water with which the glne is mixed when required for use a small quantity of bichromate of potash, aud afterwards exposing the part to which it is applied to light, the glue is rendered insoluble, and articles faetened with it reeist the action of watsr. The proportiou of bichromate of potash to be taken must be determined by experiment, bnt for most purposes one-fiftieth of the amount of glne employed will be sufficient.

Tempering Steel.

All sorts of mixtures and msthods of tempering steel havs been invsnted, and the eales of patent rights therefor have, in many cases, brought in fortunes to the patentees. Ons of the most promieing, profitable, and apparently excellent of thess patented proceeses, according to the *Scientific American*, is that of German & Siegfried, owned by ths Steel Rsfining and tempering Company, Boston, Mass. Congress has appropriated teu thonsand dollars to pay for the right of its uee in the Governmeut shops. It is said to impart an extraordinry harduese and durahility to the poorest qaalities of steel.

The following dcscription of ths process is from Siegfried's specification, patent of July 16, 1872:

"I first heat the steel to a cherry red in a clean smith's fire, aud then cover the steel with chloride of sodium (common salt), purifying the fire also hy throwiag in salt. I work the steel in this condition aud while subjscted to thie treatment, uutil it is brougbt iuto nearly its finished form. I then substitute for the salt a compound composed of the following ingredients and in about the following proportious: One part, by weight, of each of the following substances: Chloride of eodium, sulphate of copper, sal ammoniac, aud sal soda, together with one-half part, by weight, of pure uitrate of potassa, the ingredients being pulverized and mixed. I alternately heat the steel and treat it by covering it with thie mixture and hammering until it is thoroughly refined aud brought into its finished form. I then retnrn it to the fire and heat it slowly to a cherry red, and then plunge it into a hath composed of the following ingredieuts in substantially the following proportions for the required quantity; of rain water, one gallon; of alum, one ounce and a half; of sal soda, one onnce and a half; of sulphate of copper, one ounce and a half; of nitrate of potassa, one ounce; and of chloride of sodium, eix ounces. These quantities and proportions are stated as being what I regard as practically the best, and it is manifest that they may be slightly changed without departing from the principle of my invention."

What he claims in his patent is the successive processes or steps of the process, with the use of the materials or their equivaleuts, substantially as set forth above.

Wooden Ships.

After a long psriod of depression, the shipping interests is seeing more prosperous times, and the despised sailing vessel is likely to again become a good piece of property. The lack of additions to sailing vessels during the few years past, has at last brought abont a demand quite inadeqnate to the present supply, even for ordinary trade. The nnexpected demand for snch conveyance caused by the present enormons wheat crop of this State has greatly intensified this demand, and freights have gone up to an nnprecedented figure. Ships have been chartered to load with wheat from this port to Liverpool the past season at ratee which wonld almost pay the value of the ship on a single trip.

It is also observed that wooden ships appear to be, if anything, more in favor than those of iron, the reason for which, however, is not so apparent as the fact. There is evidently a large margin yet left in the world's commerce dependent upon wind and eails, a margin which will probably grow still wider unless there is a depreciation in coal or some other material is found as a substitute therefor. It is not improbable that the ship building interest may yet become as active in this country as it was before the war; if so, our own coast wonld profit by the reaction, by the establishment of ehip ysrds in the vicinity of our northern timber regions.

Relative Value of American and English Iaon.—It is impossible to have any absolute standard of comparison between these two kinds of iron, and so be able to say, definitely, one is bstter than the other. For some special purposes, or for some particular process of manufacture, or form of product, one is superior to the other, while for other pnrposes the reverse is true. In general terms, American iron is softer than English and therefore possesses greater ductility and tensility. While it will yield more readily to immediate force, it will stand a greater ultimate strain. Nor does it crystallize under vibration so easily, a property which makes it better fitted for car wheels, axlss and like manufactures. English iron being harder, will endure a greater sudden test of its tension, while it will yield more readily to a long continued strain. It also, as etated above, sooner assumes the orystallized form under vibration. Being harder its power to resist compression is probably greater than American iron. We have been informed that a large New York iron merchant, who has been forced by the recent state of affairs in the English market, to use American iron, has declared that the common brands of Pittsburgh iron are equal, if not superior, to English refined iron.—*Am. Manufacturer.*

Anti-dust Railroad Cabs.—A fsw weeks since, says the Philadelphia *Record*, an anti-dnst experiment was mads on ths fast 2 o'clock express cars to Atlantic City. Thers was teu well-filled cars in the traia, snch having a canvass apron on both sides, covered the epace between it and the rails. The end of thsse aprone lapped, thus forming a continual canvass from one snd of the train to ths other On a part of the trip ths spssd attained was aboat forty miles per hour. There wae not the least particle of duet iu ths first saven cars, but there appeared to be something like duet in the sighth, ninth and tenth cars, but not enough to show on ths garments of the passengers.

It appears to be general opinion on the Contiuent that the only possibls field piecss are bresch loaders. Besides being more rapidly manœuvered, they rsquire fewsr men, and greatsr accuracy iu aim is obtained; and they possess maay other good qualities. It is still, however, a mooted question of what material they shall be composed, some bsing stroagly in favor of bronze, while othsrs as strenuously advocate steel.

SCIENTIFIC PROGRESS.

Dust Explosions in Flour Mills.

Sometime in July last a singular and terrific explosion occured in the Tradeston Flour Mills, near Glasgow, Scotlond, whereby the mill wae utterly demolished and the ruins set on fire. The peculiarities and philosophy of this explosion are referred to in the *Engineer* substantially as follows:

The fire was caused by an explosion which originated in the exhanst, and traveling through the varions conduits of the mill, like fire damp in a mine, set fire to the woodwork. The occurrence cansed some sensation at the time, not because explosions of the kind were previously altogether unknown, but becanse in this instance the attention of the comparatively uninformed public wae attracte dby the nnusual gravity of the accident. A searching investigation iato the circnmstances which probably led to the explosiou, was made by Professor Rankine and Dr. Macadam. After having examined witnesses and documents relating to the history of fires and explosions of a like nature, they reported that the primary canse of the explosion was the accidental stoppage of the feed of one of the pair of stones, which led to their becoming heated and striking fire. The fire thns generated inflamed the tinely divided duet which was diffused through the air in the exhaust conduits and then passed on to the exhaust box.

This sudden iguition or flashing of the extremely inflammable dust diffused throngh the air would produce a very high temperature in the gaseous products of the combustion, and this wonld necessarily be accompanied by a great and sudden increase in pressure and bulk, coustituting in fact an explosion. The firet effect of the explosion was to burst the exhanst box and allow the diffusion of dust and flame throughout the mill. A second explosion followed, and the mill was reduced to rnins. No explosive or other foreign material was nsed in the manufacture of the flour, and the steam-boilers were found uninjured. No blame has beeu traced to the proprietors of the mill, or to sny one in their employment.

Direct experiments were instituted by Professor Rankine and Dr. Macadam with the view to ascertaining the inflammability and explosiveness of this mixture of air and dust. They have also calculated that when the theoretical proportions best-suited to produce an explosion are exactly realized, the pressure of the resulting gaseons products, if confined in a limited space, suddenly becomes equal to about eight times that of the atmosphere. It is probable that, in this instance, these theoretical conditione may not have been exactly reached, but still it is certain that a very great destructive pressure was prodnced.

Now, the question naturally arises, what precaution should be taken to guard against such accidents in the future, or at all events to mitigate against their destructive effects. The problem does not seem a very difficult one. The danger does not lie in the grinding process proper, but in the plans for storing up the dangerous flour-dust. So long as the grinding operations are carried on in the simple manner pursned in small mills, where the stones are simply boarded in, and where there is no exhaust, there can only be a limited amount of dust to inflame. But it is otherwise when the exhaust is employed and the fine dust is drawn up into an exhanst-box. There the flame drawn up from the stonee must inevitably lead to a more serious explosion, and where many pairs of stones are connected with the same exhanst the danger is enormonsly increased. It is accordingly recommended that all receptacles in which the dust is collected shall be lightly constructed and placed outside the buildings, in order that any explosion which might occur in them shonld free itself at once and not be induced to travel back into the mill.

The word "receptacle" is understood to include exhanst-boxes, stive-rooms, smut-rooms and exhanst-fans. The report also contaius a suggestion that the well-known principle of extinguishing a flame by causing it to pass a large cooling surface might be adopted, and in fact the dust shonld be made to pass throngh a number of metal tubes instead of throngh the exhanst-trunk. It is, however, pointed out that cold surfaces are also apt to canss a condeasation npon them of moisture in the air, aad consequeatly the tube system would perhaps be open to the disadvsatage of being liable to become clogged hy pasty depositions.

Naked lights should not be used iu a dusty atmosphere, aud all gas-jets should be protected with gauze. Finally, as the emission of highly-heated particles from the stones is rendered more probable by the entry of nails and piecee of iron with the grain, it is etrongly advieed that the uee of magnets to collect these metallic intruders should be mads uuiversal.

It appears that thsss accidents are of very frequent occarrence in England, and their number has increased since ths introductioa of the exhauet. The fact, however, appears to be little known to the general public.

How Trees are Killed by Lightning.

All who havs examined a tree which has been destroyed by a "thunderbolt" will have noticed not only how ths layers of ths wood have been shattered and separated into s rips, ae if full of wiud ehskes, bnt also the dryness, hardness, and bitterness of the wood, as though it had been throngh the procese of curing in a kiln. This is attributed to the iustantaneoue reduction of the sap—the moisture within the wood—into steam. Wheu this moisture is abnndant, as in May or early June, the amount and force of the steam not only bursts aud separates the layers and tibers, hut rends the trunk in pieces or throws of a portiou of it, down a a line of greatest power or of least resistance. And when the amount of steam thus suddenly generated is less, owing to the drier condition of the steam from continual evaporatiou aud leaf exhalation, there may be no external trace of the lightning stroke; yet the leavee will wither in a few days, showing that the stem has been rendered incapable of conveying supplies, and the tree will either partially or entirely die. Still lighter discharges may be conducted down the moist stem, without any lesion or hurt.—*Building News.*

Lightenino in the Spectaoscope.—The frequent occurence of thunder storms in most localities reuders the observatiou of lightening by the spectroscope a matter of comparative facility; although the extreme transitory natnre of its spectra renders it difficnlt to fix ite lines with that absolute correctness which is attainable with more fixed spectra.

Mr. Procter, an observer of Penrith, records in *Nature* some observations made by him during a thunder storm iu Patterdale. Among other lines in the lightning spectrnm he saw one repeatedly near D^1, and about the centre of the bright yellow band betweeu the two masses of atmospheric absorption lines iu that neighborhood. He also saw the line near *b*; besides which he repeatedly saw a continuous spectrum with bright bands, which might have been the low temperature nitrogen spectrum, although of this he was uncertain. He conceives that there is no donbt that lightning gives two different spectra, one of bright lines and the other continnous. It is, however, possible that the latter is identical with the former, the lines being much expanded; but, so far as he has been able to perceive, he does not think this is the case. A snbsequent observation canses him to donbt if the band spectrum above referred to be the ordinary nitrogen band spectrum.

Cause of Change of Color in Fishes.—A short paper was recently read at Brighton, Eng., by M. Georges Pouchet, on the mechanism of the chauges of color in fishes aud crustacea. The author referred to the fact that fishes often change in color according to the color of the objects by wh ch they are surronnded; but he explained that this does not take place when the fish is deprived of the nerves that preside over the peculiar corpuscles to which the color is due. The change does not take place in blind turbots; and in the seeing turbot, if the nerves are divided which communicate between the eye and the skin, the chauge does not occur. If the fifth nerve is divided the change takes place all over the body except the part to which that nerve is distributed. These experiments, M. Pouchet said, show that the change of color is dependent upon impressions received by the nervous system through the organs of vision.

A Beautiful Experiment.—When fifteen to twenty grammes of granulated silver is introduced into a perfectly dry tube of hard white glass, with from thirty to forty grammes of bisulphide of carbon, and then hermetically sealed, on warming gently and then shaking in the dark, sparks are observed in the liquid, which by continned shaking may be rendered quite luminous. Pouring water on the tnbe causes the luminosity to disappear, but on shaking it becomes visible. This is a beautiful experiment. Iron and aluminum produce similar effects, while platinum, copper, and zinc do not.

An Electric Telegraph in 1818.—*The Journal of Applied Science* states that Sir Francis Ronalds, now ninety years of age, is a member of the Society of Telegraph Engineers, recently established. In 1818, he proposed a system of electric telegraphy, and went to considerable expense in erecting lines of telegraph in his garden at Hammersmith. In 1823, he publieh-ed a book, now very scarce, in which he said the day would come when the king, at Brighton, might commnnicate with his ministers in London as quickly as if he were himself in the metropolis

Stock Sales for Week Ending Oct. 31—S. F. Stock & Ex. Board.

NAMES OF COMPANIES.	Past.	Shs. in ft.	FRIDAY. Shs	FRIDAY. Prices.	SATURDAY. Shs	SATURDAY. Prices.	MONDAY. Shs	MONDAY. Prices.	TUESDAY. Shs	TUESDAY. Prices.	WEDNESD'Y Shs	WEDNESD'Y Prices.	THURSDAY. Shs	THURSDAY. Prices.	T'tl Sh's Sold.	Delinq.
Adams Hill	*						100	1¾							100	
Alpha		300	20	35 45			90	44 @45½	50	46 @47	135	55 @60	175	55 @56	555	11
Alpha	§	800	37½	660 6			150	5¾@ 5⅞	100	5¾			715	5¾@ 6	1895	½
American Flag	§	2600	11¾	300 13¼@14			610	13 @14¾	120	14 @14½			585	14¼@14½	1425	
Amador Tunn				200 9½@ 9¾					50	10			100	9	400	¾
Arkansas																
Arizona & Utah	*	1900	19½	50 1⅞			100	1¾			270	1⅞@ 2	60	2@2¼ 2¼	350	2¾	830	1½
Belcher		1040	10	150 93½@95			235	94 @ 95	557	100 @105	180	104 @ 109	310	114 @118	285	105 @115	1717	20
Baltimore Con	*			350 2			200	2	90	2	50	2¼	25	2⅜	935	2 @ 3¼	1600	1¾
Bowery	§	1000	30	220 2					120	1⅞	400	1⅞@ 2			840	1¾@ 2	1580	
Bacon											100	69			110	
Buckeye											95	2	60	2¼@ 2½	50	2	205	
Best & Belcher		224	100	30 6½											30	6	60	½
Bellevue		8000	2½				70	2	55	2							125	
Belmont				335 11			250	5 @ 5¾	400	4¾@ 5¼			20	5	210	4¾@4 5	1250	
Chollar		2800	10	145 61 @63			95	63 @64	225	63 @65½	165	62½@65¾	250	65 @70	520	67 @72	1400	9
Caledonia	*	5000	4	1010 30 @34			290	29 @31	370	31 @32½	1410	34 @37	820	38¼@41½	550	34 @37½	4450	3½
Cons. Virginia	*	1160	20⅜	195 65 @67			130	65 @68	210	64 @70	415	70 @73	110	70 @72	130	72½@75	1680	8
Confidence	*	130	192	460 123½@123¾			315	123½@123¾	255	123½@123¾	340	63	770	14¼@16¾	2725	14¼
Crown Point	*	1600	166⅞	445 120 @124			20	122 @ 123	378	122 @125	210	123 @128	230	121 @ 127	220	124 @125	1503	1
Central	*	70	357	50 8													50	
Calaveras		3200	6¾															
Condor				60 1¾													50	
Columbus																	100	
Chapman	§	700	40	75 1¾			100	1¾							455	1½	640	¼
Chief of the Hill		1000	30	295 7¼@ 7¾			70	7½@ 7¾	120	8 @ 8¾	210	7½@ 8			55	7¾	750	⅜
Chief East Ex	§						40	3									40	
Cedarburg		1200	20	320 7 @ 7⅛			340	8 @ 8¼	198	7¾@ 8⅛					130	7¼	980	⅛
Daney		2000	12	120 13⅛@ 1⅜			220	1¾@ 1½	100	1⅜	60	1½			770	1¼@1¾	500	
Eureka Cons	*	1000	30	490 19½@20½			150	19½@19¾	710	19¾@20¾	1095	20¾@21¾	585	20¾@21¾	1165	20½@22	4195	1½
Eureka		1680	412						80	15					25	16½	105	
Exchequer		400	20								90	11¾@16¾	265	16 @20¼	260	20 @20¼	625	
Eclipse		70	357						50	11¼	100	11¾@11½	110	12¼@12¾	220	12 @12¾	610	
Empire Mill	*	78		695 8¾@ 9¼			190	9 @ 9¼	255	9¼@ 9½	1065	9¾@10¾	835	10 @10½	190	10¼	3170	1¾
Excelsior	§	4500	2½															
Gould & Curry	*	1200	4	50 185 @190			25	187 @ 190	40	185 @190	105	185 @ 195	15	190 @ 191	55	199 @ 200	294	5
Golden Chariot		750	1¼	140 13½@ 14					30	12½@13					20	13	315	
Globe		1600	12½	200 1⅛			220	5½	300	1½	200	1⅜	500	1½			1620	
Con. Gold Hill Q	*			40			100	9¼	10	5½	220	5¾@ 6	50	6½			410	
Halo & Norcrose	*	400	4	160 85 @ 88			30	84 @84½	44	82 @82½	15	82	135	83 @87	80	86 @87	464	1
Huhn & Hunt	§	3600	8½	2570 7¼@ 7⅜			350	7½@ 7⅝	850	7½@ 7¾	840	6¾@ 7½			840	5⅞@ 6⅞	5450	¾
Hermes				270 7¾@ 8¼							100	8			50	8	420	¾
Ida Elmore	*	1300	12½	190 @ 9					510	8 @ 8½	50	8			50	7¾	800	¼
Imperial	*	184	5434	1110 9¾@10¾			230	10 @10¼	1650	10 @10¾	1120	10¼@11	1150	11 @12	2990	10 @11¾	9300	1
Ingomar	§	1000	40	120 1½					815	1½	308	1½			225	1½	1560	
Independent	*	1800	14															
Ivanhoe		600	5								150	50@ 6	1		100	17½@ 2	250	
Julia	*	2000	15	765 6½@ 6¼			150	6½@ 6¾	700	5½@ 6	1035	5¾@ 5⅞	720	5½@ 5⅝	740	6½@ 5¾	4110	½
Justice	*	3000	7	25 6½			35	6½			55	6¼	965	6¾@ 7	180	7 @ 7⅛	1260	1
Kentuck		95	121	10 230			2	240			10	267½	30	267@ 275	35	270 @ 280	545	50
Kentucky																		
Knickerbocker	§	1200	20	415 4¾@ 5			60	4¾@ 5			105	5 @ 5¼	315	5¾@ 6	255	5¼@ 5½	1240	½
Mammoth		1800	42½															
Meadow Valley	§		1137	1055 27¼@28			325	27¼@28¼	400	27½@28¼	760	27½@28¼	770	26¾@27¾	1400	26¾@27	4710	1
Mahogany		720		10 6¾					50	8¾	60	9 @ 9¼					120	
Mocking Bird																		
McMahon	§		40															
Newark	§	800	12	220 4¼@ 4¾			110	4¾@ 4¾	385	6 @ 5¾	190	5¼@ 5½			1170	6¾@ 7¼	2075	2½
Ophir		1400	26⅜	270 55 @58½			395	58 @61	780	61 @68½	310	59 @62	150	62 @62½	280	62 @65	2185	6½
O. H. Treasure	§	800	15								100	5¾			580	13¾	678	
Overman		12	0	12¾ 190 70 @73			25	71 @76	75	72 @76	230	80 @85	160	89 @95	165	79 @82	845	9
Occidental		800	20															
Pioche		1000	16⅜	175 14 @14½			100	14½@14¾	285	14¼@14¾	310	14 @15	50	14½	120	15 @15¾	1040	1¼
Pioche West			30	25 3½							50	3					75	
Page & Pannon		2240		250 2½@ 2¾			50	2½	125	2⅝@ 2¾	150	2½					575	
Poa Vine		1000													100	50	100	
Phœnix			7¼	1220 3 @ 3¼			1150	2⅞@ 3	1425	2⅞@ 3	2225	2⅞@ 3	220	3	1115	2⅞@ 3	7350	¼
Raymond & Ely	*	4000	20	210 130 @131			140	131 @ 133	313	140 @144	480	145 @150	285	140 @ 145	140	140 @ 143	1568	12
Savage		800	40	135 102 @111			135	104 @ 105	258	103 @108	490	98 @ 104	75	103 @ 105	840	105 @ 110	1988	1
Seg. Belcher			7¾	200					580		120	85 @ 100	25	85	65	86@87	1427	
Sierra Nevada	*	3000	3	810 15 @16¾			110	16 @16¾	275	17 @17½	310	17 @18	375	17¾@18½	970	17 @17¾	2850	1¾
Senator				70 1					50	1¼			100	1	200	1	420	
Succor		7600	12½				20	¾			230	1½					275	
Silver Hill		30⅜	630	7¾@ 8			60	8	120	7 @ 7¾	805	7½@ 7¾	450	7¾	210	6	2273	
South Chariot		600																
Trench			20	250											100	12	100	
Wash. & Creole	§	200	100				50	4⅜									150	
Woodville		1400	20	120 1½			300	4¼@ 4½	1545	4¾@ 4⅞	1310	5 @ 5¼	820	6½	1720	5¾@ 6	6215	1½
War Eagle		1000	10	300 5 @ 5¼													300	
Utah		1000	20															
Yellow Jacket	*	1200	25	160 101 @103			85	102 @ 108	215	102 @106	381	101 @ 113	225	115 @ 120	485	123 @ 128	1551	25
Yule Gravel	*	400	25															

NOTE.—†—California. *—Washoe. ‡—White Pine. §—Ely District. ¶—Eureka District. ‖—Idaho. ⁋—Nearly. ?—Over.

S. F. Stock and Exchange Board.

THURSDAY, October 31st, 1872.

The Stock Market has been generally better thie week than last, and eales have been increaeed at firmer pricee. Money ie reported easier, and prospects of tbe minee inducs mors people to huy. Dividende for the month of Octoher amounted to $222,000 from the two companiss; the Raymond & Ely paid ite usual $210,000, and the Cederburg, a California mine, paid a dividsnd of 50 cente, amounting to $12,000. Tbie ie a very small showing, taking into conederation the large number of aeseements levisd in Octoher, and tbe numhsr of incorporated companies there are in existencs. Laet year there were dividends from eix mining companies in ths month of October, amounting to $309,400. For the same month, in 1870, the amount was $582,458, against $380,682 in 1869, $450,000 in 1868, and $472,000 in 1867. Judging from the favorable reporte from all quartere we may expect more dividende next month, and ths Crown Point, Bslcher and North Star, ought at least to resums their dividends.

Tbe following unusully largs numbsr of aessments on mining companies wers lsvied during tbe month of Octoher: Alpine M. Co., Amador Co. Cal., $1.50; Altona, Grass Valley, 10 cents; Bellevue, Placer Co. Cal., 75 cents; Deseret Cons. Utab, 20 cente; Eliza, Siskiyou Co., Cal., $1; Emerald Hill, Utah, 50 cents; Empire Mill, Washoe, $1; Granite Tunnel, El Dorado, Co., Cal., 6 cents; Greenville, Plumas Co., Cal., 50 cents; Hale & Norcross, Washoe, $5; Howard Hill, Nevada Co., Cal,. $1; Independent, Butte Co., 40 cents; Indus, Washoe, 50 cente; Justice, Washoe, $2; Kentucky, Ely District, 50 cents; Kincaid Flat, Tuolumns Co., Cal., $3; Nsvada Land and M. Co., Elko Co., Nev., 8 cents; Noonday, Wbite Pine, 20 cents; Original Hidden Treasure, White Pine, $1.50; Ophir, Waehoe, $5; Ovsrman, Wasboe, $5; Pauper, Idaho, 50 csnte; Peavine, Ely District, 25 cente; Peter Walter, Placer Co., Cal., 50 cente; Pictou, Waehoe, 12½ cents, Shipley, Placer Co., Cal., $1; State of Maine, Amador Co. Cal., 5 cents; Tecumseh, Calaverae Co., Cal., 25 cente; Gen. Lee, White Pins, 10 cents; Senator, Washos, 50 cents; Rieing Star, Idaho, $1; Buckeye, Washoe, $2; Ida Ellmors, Idaho, $2.50; Lsmon, Eureka Dietrict, $1; Amazon, Ely District, 10c. There were 36 mining asesssmsnts levied tbis month, and the sams numbsr in September.

Ou Friday the market was eteady and increaeed in strength from prsvione day'e transactions, pricee being very firm. On Saturday prices were gsnerally higher. At cloee Crown Point was $3 higher; Belcber, $1; Chollar, $2; Con. Virginia, $1; Kentuck, $10; Yellow Jacket, $1; Imperial and Empire, 50 cents; Raymond & Ely, $2.

On Monday ths market was estill stronger and orders to huy were plenty; at afternoon Board Belcher rose $8; Crown Point, $2; Con. Virginia, $3; Caledonia, $1; Imperial, 50 cents; Ovsrman, $5; Raymond & Ely, $10; Ophir, $1; Savage was $2 lower.

Tueeday, prices wers still firm, and at the afternoon Board thsre was a large business dons. Belcher rose $5; Caledonia, $5; Con. Virginia, $8; Overman, $9; Raymond & Ely $4; Jacket, $5; Savage was $2 lower; Ophir, $2; Crown Point, $2.

Wednesday, the market was strong and active, and pricss closed still higher. Belcher rose $6; Chollar, $3; Con. Virginia, $1; Crown Point, $1; Calsdonia, $3; Imperial, $1; Yellow Jacket, $10; Kentuck, $10; Ophir, $4; Hale & Norcroes, $3; Overman, $4; Savage, $3. The Ely mines were lower; Raymond & Ely, $3; Meadow Valley, 50 csnts; Pioche, 50 cents.

To-day, pricee were irregular, eome deecription advancing, and some declining. Yellow Jackst rose to $128, the higbest for eome time.

Below will be found news from ths prominent minss wbich is not in our "Mining Summary":

BELCHER. — A letter of ths 29th eays the stopes look wsll. The south drift of tbs 1200-ft. lsvsl is still in splendid ore. Car eamples, $94. Ths new shaft ie in running order.

CROWN POINT.—Letter of the 26tb eays the south crosecut, sonth winze, and the crosscut from the eaet winze, 1300-ft. levsl, are all in ors of a very superior quality, assaying, averags, $165. The ore-hreaete are looking well.

CEDERBURG.—Ths proceeds of 12 days' run with 10 etampe wae $9,164.

CHIEF OF THE HILL.—From this mine $6,492 bullion was received on the 29tb.

RAYMOND & ELY.—A letter from the supsrintendent reade as follows: The mins is producing finsly. Gaining on ths mills with first-class ores, and accumulating a large amount of eecond and third-class daily. "Arrived here yesterday aftsrnoon. I find matters in much hetter state than I expectsd, particularly in regard to ths Kentucky folke. They have hesn foiled in every attempt to get into our workings, and I have not ths elightest appreheneion they will succeed in any attsmpt thsy may make. Knowing as they do the utter hopelessnees of ever securing the slightest property or damagee hy law, their object is to force us to pay them blackmail, and by annoying ne to play upon the timidity of a portion of our stockholders. Lst me again assure you that there is not the moet remote chance of loeing any property hy them. Thers is not the slighteet cause for alarm."

On the 24th $35,341 was shipped; on ths 27th, $36,511 and on the 30th, $35,589; sbipments prsviouse to laet in October amountsd to $273,124, making a total of $308,713, equel to $11,025,44 per day, for 28 daye.

SAVAGE.—During week ending Octoher 26th, 968 tons of ore of an average aesay value of $29.09 was extractsd; 888 tons were delivered at the mille, and 480 tone were on the dumps, Tbe majority of this ore came from the North mine eecond etation.

EUREKA.—A letter of the 26tb, eays the eix daye' clean up, with a run of 15 etamps, amounted to 900 ounces of amalgam.

WOODVILLE.—Bullion received $2,902.46, the proceeds of 100 tons of low grade ore.

PHŒNIX—Twenty tone of hullion were shipped on the 25th, valued at $8,611.

HUHN & HUNT.—Assays on tbe 28th from ths new strike were $581.

PEARL FISHING IN AUSTRALIA.—The helief that the southwest coast of the Auetralian continent, from Nicholl Bay to the head of Yorke'e Peninsula, abound in pearl banke, hae led to the initiation of a pearl-fiehing expsdition, to start from Melbourns. The expcnese of a twelve months' expedition are set down at 1000l., and with 60 days' clear fishing it ie calculated on realizing 6,400l., leaving a net profit of 5,400l. Tbe calenlation on which the schems ie based places the valne of mother-of-pearl in the English markst at from 85l to 225l per ton. Thie ie indepsndent of tbe pearle, which represent a conaiderahle item.—*Melbourne Age.*

OUR MINING SHAREHOLDERS' DIRECTORY.

ASSESSMENTS.

Name of Co.	Location.	Secretary.	S.F.Office.	Assm't.	Levied.	Delinq't.	Sale.
American Flag M. Co.	Ely District.	Geo. R. Spinney,	320 California St.	$2 00.	Sept. 2.	Oct. 8.	Nov. 1.
AMAZON S. M. CO.	Ely District.	M. J. McManue.	609 Sacramento St.	50.	Oct. 27.	Dec. 2.	Dec. 23.*
Atlantic&Pacific M. Co.	El Dorado Co.	A. Noel.	419 California St.	20.	Sep. 11.	Oct. 15.	Nov. 2.
Alpine G. M. & M. Co.	Amador Co.	W. L. Ustick.	438 California St.	$1.50.	Oct. 16.	Nov. 16.	Nov. 30.
ALTONA G. M CO.	Grase Valley, Cal.	David Wilder.	28 Merchants' Ex.	10.	Oct. 3.	Nov. 2.	Nov. 25.*
AUBURN G. M. CO.	Placer Co., Cal.	Geo. W. Dixon.	corner Mont. & Cal.	25.	Sept. 13.	Oct. 14.	Nov. 6.
Bellevne M. Co.	Placer Co., Cal.	T. F. Cronise.	438 California St.	75.	Oct. 12.	Nov. 13.	Nov. 30.
Bowery Cone. M. & M. Co.	Ely Dist.	C. E. Elliott.	419 California St.	$1 00.	Sept. 17.	Oct. 24.	Nov. 10.
Buckeye M. Co.	Washoe.	Chas. H. Fish.	419 California St.	$2 00.	Oct. 26.	Dec. 2.	Dec. 23.
Caledonia S. M. Co.	Storey Co., Nev.	R. Wegener.	414 California St.	$2 00.	Sept. 11.	Oct. 16.	Nov. 6.
Cederburg let N. Ex. Co.	California.	J. N. Webster.	506 Montgomery St.	10.	Sept. 9.	Oct. 14.	Nov. 2.
Cederburg, 1st S. Extension.	Cal.	J. N. Webster.	506 Montgomery St.	4.	Sept. 11.	Oct. 12.	Nov. 12.
Chapman M. and M. Co.	Ely Dist.	F. Swift.	415 Montgomery St.	50.	Sept. 16.	Oct. 24.	Nov. 15.
Comdom M. Co.	Ely District.	H. O. Kibbe.	419 California St.	$1 00.	Sept. 12.	Oct. 24.	Nov. 13.
Consolidated Virginia.	Waeboe.	D. T. Baley.	401 California St.	$3 00.	Sept. 26.	Nov. 1.	Nov. 21.
Deseret Con. M. Co.	Utah T.	J. L. King.	411 California St.	20.	Sept. 16.	Oct. 18.	Nov. 7.
El Dorado M. Co.	Amador Co., Cal.	E. McFadden.	Express building.	50.	Oct. 4.	Nov. 10.	Nov. 25.
Eliza M. & M. Co.	Siskiyou Co., Cal.	T. F. Cronise.	438 California St.	$1 00.	Oct. 11.	Nov. 12.	Nov. 28.
Emerald Hill M. Co.	Utah.	F. Madge.	Merchants' Exchange.	50.	Oct. 17.	Nov. 20.	Dec. 17.
Empire M. Co.	Idaho.	C. F Balcom.	426 Montgomery St.	50.	Aug. 5.	Sept 6.	Sept. 30.
Empire M & M. Co.	Waehoe.	W. E. Dean.	419 Cal. St.	$1 00.	Oct. 8.	Nov. 10.	Dec. 2.
EXCELSIOR S. M. CO.	Nye Co., Nev.	W. H. Kellmyer.	640 Washington St.	10.	Sept. 26.	Oct. 29.	Nov. 22
Gen. Lee S. M. Co.	White Pine.	C. F. Schulze.	426 Montgry St.	10.	Oct. 29.	Dec. 3.	Dec. 27.
Golden Chariot M. Co.	Idaho.	L. Kaplan.	Merobants' Ex.	$1 00.	Sept. 12.	Oct. 18.	Nov. 8.
Granite Tunnel M. Co.	El Dorado Co.	W. G. Holmes.	443 California St.	6.	Oct. 1.	Nov. 5.	Nov. 18.
Greenville M. Co.	Plumas Co., Cal.	H. C. Kibbe.	419 Cal, St.	50.	Oct. 1.	Nov. 5.	Nov. 26.
Hale & Norcross M. Co.	Washoe.	J. L. King.	411 California St.	$5 00.	Sept. 30.	Oct. 18.	Nov. 21.
Howard Hill G. M. Co.	Nevada Co.	J. L. King.	411 California St.	$1 00.	Oct. 23.	Nov. 26.	Dec. 16.
Ida Elmore M. Co.	Idaho.	Wm. Willis.	419 Cali ornia St.	$2 50.	Oct. 25.	Nov. 30.	Dec. 21.
Imperial M. Co.	Washoe.	W. E. Dean.	419 California St.	$1 00.	Oct. 1.	Nov. 6.	Nov. 29.
Independent G. M. Co.	Butte Co., Cal.	G. T. Grimes.	240 Montgomery St.	40.	Oct. 15.	Nov. 19.	Dec 0.
INDUS G.& S.M.Co.	Virginia City, Nev.	David Wilder.	24 Merchs' Ex., Cal.St.	50.	Oct. 19.	Nov. 23.	Dec. 18.*
Justice M. Co.	Washoe.	R. Wegener.	414 California St.	$2 00.	Oct. 2.	Nov. 6.	Nov. 27.
Kentucky M. Co.	Ely District.	J. P. Cavallier.	509 Cal. St.	50.	Oct. 4.	Nov. 9.	Nov. 13.
KINCAID FLAT M. CO.	Tuolumne Co.	R. H. Cornell.	220 Clay St	$3 00.	Oct. 18.	Nov. 21.	Dec. 16.*
Knickerbocker M. Co.	Storey Co., Nev.	H. Bowie.	Stevenson' Build'g.	$1 00.	Oct. 7.	Nov. 9.	Nov. 26.
LADY FRANKLIN G.&S. M. CO.	Cal.	J. S. Lnty.	507 Montgomery St.	50.	Sept. 24.	Oct. 28.	Nov. 18.
Lemon M. & M. Co.	Eureka District.	J. T. Milliken.	608 Merchant St.	$1 00.	Oct. 26.	Nov. 30.	Dec. 20.
LOUISE M. CO.	Lincoln Co., Nev.	Wm. H. Watson.	302 Montg'ry St.	50.	Sept. 14.	Oct. 18.	Nov. 9.
Mahogany M. Co.	Idaho.	W. J. Owens.	Express Building.	$2 00.	Sept. 25.	Nov. 4.	Nov. 20.
Minnesota G. & S. M. Co.	Idaho.	W. Willis.	419 Cal. St.	50.	Sept. 4.	Oct. 17.	Oct. 31.
National M. Co.	Nye Co, Nev.	B. B. Minor.	411½ California St.	50.	Sept. 26.	Oct 28.	Nov. 18.
Newark S. M. Co.	Ely District.	D. T. Bagley.	401 Cal. St.	75.	Sept. 24.	Oct. 30.	Nov. 23.
Newton Booth Con. M. Co.	Ely Dist.	R. F. Scott.	314 Cal. St.	25.	Sept. 5.	Oct. 7.	Nov. 4.
NEVADA L. & M. CO.	Elko Co., Nev.	Wm. H. Watson.	302 Montg ry St.	8.	Oct. 1.	Nov. 10.	Nov. 23.*
NOONDAY S. M. CO.	White Pine.	Chas. H. Fish.	419 California St.	20.	Oct. 11.	Nov. 15.	Dec. 4.*
OHIO CONS. G. M. CO.	Calaveras Co.	W. A. Knapp.	432 Montg'ry St.	10.	Sept. 24.	Nov. 2.	Nov. 23.*
O. H. Treasure M. Co.	White Pine.	D. A. Jennings.	401 Cal. St.	$1 50.	Oct. 9.	Nov. 15.	Dec. 6.
Ophir S. M. Co.	Washoe.	E. F. Stone.	Merchants' Exchange.	$5 01.	Oct. 23.	Nov. 26.	Dec. 13.
Overman S. M. Co.	Washoe.	W. J. Stetson.	414 California St.	$5 00.	Oct. 5.	Nov. 11.	Nov. 3.
Pacific Coal M. Co.,	Contra Costa Co.	A. Lachman.	First and Market.	$10 00.	Sept. 25.	Nov. 13.	Nov. 30.
Panper M. Co.	Idaho.	J. L. King.	411 California St.	50.	Oct. 1.	Nov. 19.	Dec. 16.
Peavine S. M. Co.	Ely District, Nev.	C. F. Balcom.	426 Montgomery.	25.	Oct. 11.	Nov. 20.	Dec. 16.
Peter Welter, M. Co.	Placer Co., Cal.	T. J. Owens.	Express Building.	50.	Oct. 21.	Nov. 26.	Dec. 17.
Pictou M. Co.	Washoe.	S. Phillips.	415 Montgomery St.	12½.	Oct. 1.	Nov. 15.	Dec. 5.
Placer G. M. Co.	Placer Co., Cal.	G. W. R. King.	411 Cal. St.	15.	Sept. 16.	Oct. 22.	Nov. 8.
POCAHONTAS M. Co.	El Dorado Co.	D. A. Jennings.	401 Cal. St.	50.	Sept. 17.	Oct. 24.	Nov. 18.
Rising Star M. Co.	Idaho.	Wm. Willis.	419 California St.	$1 00.	Oct. 28.	Dec. 3.	Dec. 23.
Savage M. Co.	Washoe.	E. B. Holmes.	401 Cal. St.	$10 00.	Sept. 10.	Oct. 16.	Nov. 2.
Shipley M. & M. Co.	Placer Co., Cal.	W. L. Ustick.	438 California St.	$1 00.	Oct. 16.	Nov. 16.	Nov. 30.
Senator S. M. Co.	Washoe.	Henry Boyle.	Stevenson's Building.	50.	Oct. 29.	Dec. 2.	Dec. 21.
SILVER SPROUT M.Co.	KearsargeDis	B. Wingard.	318 Cal. St.	50.	Aug. 26.	Oct. 8.	Nov. 8.*
SILVER WAVE M. CO.	White Pine.	J. W. Clark.	418 Cal. St.	$1 00.	Sept 21.	Oct. 26.	Nov. 25.*
South Chariot M. Co.	Idaho.	G. L. King.	411 Cal. St.	50.	Sept 4.	Oct. 12.	Nov. 4.
STATE OF MAINE M. Co.	Amador Co.	H. B. Congdon.	306 Montgomery St.	5.	Oct. 17.	Nov. 25.	Dec. 16.*
Succor M. & M. Co.	Washoe.	W. H. Watson.	302 Montg'ry St.	$1 00.	Sept. 20.	Oct. 11.	Nov. 21.
Tecumseh G.S & C.M.Co.	Calaveras Co.	F. J. Berrman.	634 Washington St.	25.	Oct. 10.	Nov. 16.	Dec. 5.
Washington & Creole M. Co.	Ely Dist.	T. H. Applegate.	Merchants' Ex.	50.	Sept. 9.	Oct. 19.	Nov 11.
Yuba Gravel M. Co.	Nevada Co., Cal.	J. A. Gordon.	108 Battery St.	25.	Sept. 17.	Oct. 21.	Nov. 11.

MEETINGS TO BE HELD.

Name of Co.	Location.	Secretary.	Office in S.F.	An'l or Sp'l.	Date.
Andes M. Co.		T. C. Sanborn.	329 Montgomery St.	Special.	Nov. 4.
Confidence M. Co.	Nevada.	R. Wegener.	414 California St.	Annual.	Nov. 8.
Big Cottonwood Tunnel Co.	Utah.	J. L. King.	411 California St.	Annual.	Nov. 8.
Bacon M. & M. Co.	Washoe.		414 California St.	Special.	Nov. 19.
Hayden Hill M. Co.		Wm. H. Knight.	331 Montg'ry St.	Annual.	Nov. 9.
Heokerdorn M. Co.		L. Leorne.	513 Jackson St.	Special.	Oct. 26.
Lemon M. & M. Co.	Ely District.	J. T. Milliken.	608 Merchant St.	Special.	Nov. 26.
Omega Virginia Co.		T. C. Sanborn.	329 Montgomery St.	Special.	Nov. 4.
San Jose Con. M. Co.	Ely District, Nev.	J. H. Applegate.	729 Montgomery St.	Annual.	Nov. 4.

LATEST DIVIDENDS—Within Three Months.

Name of Co.	Location.	Secretary.	Office in S. F.	Amount.	Payable.
Belcher M. Co.	Washoe.	H. O. Kibbe.	419 California St.	$3.00.	Sept. 10
Black Diamond M. Co.	California.			½ per cent.	Oct. 1.
Cederburg G. M. Co.	California.	D. M. Bokeo.	420 Montgomery St.	50c.	Oct. 31.
Crown Point G. & S. M. Co.	Washoe.	C. E. Elliot.	419 California St.	$3 00.	July 5.
Eastport Coce Bay Coal.	Oregon.	I. L. Pool.	Merchants' Ex.	$5 00.	Oct. 12.
Keystone Quartz M. Co.	California.	L. Vesaris.		50.	July 10.
Mahogany G. & S. M. Co.	Idaho.	T. J. Owens.	402 Mont'gry, St.	$1 00.	Aug. 7.
Meadow Valley M. Co.	Ely Dist., Nev.	T. W. Colburn.	419 California St.	$1 00.	June 20
Raymond & Ely M. Co.	Ely Dist., Nev.	A. J. Moulder.	419 California St.	$7 00.	Oct. 10.
Pioche S. M. Co.	Ely Dist., Nev.	C. E. Elliot.	419 California St.	$1 00.	Aug. 10

—* Advertised in this journal.

MINING SUMMARY.

THE following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

California.

ALPINE COUNTY.

ARRIVED.—Alpine *Chronicle*, Oct. 19: The hoisting works for the IXL have arrived and ae eoou as the grading ie finiebed the erection of ths hnilding will commence.

CALAVERAS COUNTY.

CLEAN UP.—Calaveras *Chronicle*, Oct. 26: One day this week, $1,200 wae taken from Renz's hydraulic, Railroad Flat, the reeult of a single washing.

ITEMS—MOSQUITO DIST.—S. Smith & Co. are sinking a new shaft, in whicb ore worth $30 per ton has heen etruck. On the firet east extension the vein ie 3 ft. wide showing eome gold.

Grasshopper continues to yield rich ore.

Dowling & Co. are working a large sized veiu, which producee handeome results.

F. Barney crushed 30 tone of ore, producing $26 per ton.

RAILROAD FLAT DIST.—A contract is to he let to eink tbe main shaft of the Wolverine from 200 to 300 ft. deeper. Stoping will soon be commenced. The eize of the Sandereon vein and quality of ore improving. Reynolds & Co. are reopening an old gravel mine which formerly yielded large returne.

WEST POINT DIST.—The tunnel of the Josephine is puehing ahead witb the view of testing the mine thoroughly. Another chimney of pay ore hae been struck in the Blazing Star. The owners of the Lone Star are putting the mine in fine condition. An extensive body of fine milling ors ie iu eight but the tunnel is still being extended.

KERN COUNTY.

BIG BLUE MINE.—Havilah *Miner*, Oct 19: The tunnel on whicb workmen have heen engaged for 2 yeare, hae etruck the rich spot in the 70 ft. ledge, and an incalculahle quantity of ore, valued at $80 per ton, is diecovered.

STRUCK IT.—The proprietore of the Papooee, in running a tunnel along tbe edge of the higheet peak of the Piute Mts., have struck a ledge 10 ft. below the surface, 5

Oriental Co.—The Co. employs 20 men and cleans up about $8,000 every 4 weeks.

Items.—The Empire Co. is working in good rock. A regular pay chute has been found. The Idaho is changing from 15 to 35 stamps, and in a week or 10 days the change will be completed. At Deadman's Flat much mining work is being done. The Independence tunnel is being run with energy. In the Coe there are indications of a splendid ledge.

PLACER COUNTY.

Auburn Mine.—Auburn *Herald*, Oct. 26: The drift at the 175 ft. level is in 80 ft. They have run 30 ft. in the pay chute, and it is richer than when first struck. The ledge is over 4 ft. thick and gorged with gold.

SAN DIEGO COUNTY.

Stonewall.—San Diego *Union*, Oct. 17: We are reliably informed that Frary and Farley have bonded the Stonewall to an Eastern Co., for 90 days, at $200,000 gold coin.

Items.—G. V. King, of the Golden Chariot, reports a clean up of 50 tons from his lead which yielded $8,100, or $162 per ton. Preparations have been made to sink 75 ft. deeper on the shaft from which the ore is taken.

The Owens ledge is turning out pretty rich rock.

The Ready Relief had a crushing a short time since which yielded over $100 per ton.

The Reynold's mill is at work on ore from the Helvetia.

The owners of the Kentuck are erecting a whim at their shaft to hoist rock and facilitate the work of sinking. The shaft is down 80 ft.

TUOLUMNE COUNTY.

Santa Maria Mine.—Sonoma *Democrat*, Oct. 26: The mill will be completed about the first of Dec. In running for the pay streak a 15-inch vein of rich ore has been developed 125 ft. from where ore was taken out at the time of sale. Last week 40 tons yielded $6,500 or more than $150 per ton.

Nevada.

ELKO COUNTY.

Lone Mt. Dist.—Elko *Independent*, Oct. 19: The Whitlatch is from 3 to 4 ft. wide, with a shaft sunk 40 ft. at the point of discovery. The Whitlach Union shows a vein of argentiferous galena from 3 to 7 ft. wide. A shaft sunk 45 ft. demonstrates that the ledge is well defined, and the ore of high grade.

EUREKA DISTRICT.

Hoosac.—Eureka *Sentinel*, Oct. 22: There are 3 shafts down 25 ft. and, from within 6 ft. of the top to the bottom, it shows good ore. Several tons of it lately worked returned $180 per ton. From the bottom a drift is being run west, and is in a solid body of ore; 50 ft. northerly from the shaft above mentioned, another has been sunk 60 ft. and from the bottom of this a drift is being run southerly to connect with the 20-ft. shaft when the latter is sunk deep enough. This drift is in 42 ft. In the drift from 8 or 10 ft. onward the top, bottom and sides are one solid mass of ore. Since last Spring there has been about 200 tons of ore taken out.

Since the Phenix last started up, about 65 tons have been worked, the first-class working $180 per ton, and the second-class $60.

Mazeppa No. 2.—Nearly 7 tons of first-class ore is sacked and ready to be taken to the Mill. The first-class ore will probably average $200 and the second-class $60.

Lemon Mine—The tunnel is in 396 ft. and work is being prosecuted diligently. The shaft is down 150 ft. and shows a fine body of ore. The tunnel is intended to strike the ledge at 210 ft. and will connect with the shaft when the latter reaches the depth. The tunnel is within 50 ft. of the line of the shaft, and several good deposits of mineral have been struck. Ore taken from the tunnel assays as high as $193 per ton, and quite a large amount is in sight.

Adams and Farren.—The shaft is 425 ft. deep. A level is being run at 400 ft. down for the ledge, and the indications are favorable.

New York Canon.—The Morris claim is improving daily. From 40 to 50 tons of good ore is on dump, and more is being taken out every day. In the shaft quite a large body of ore is in sight. The Whipoorwill is also looking well. Twenty tons of ore are out and a large quantity is to be seen in the shaft. At the Excelsior a great deal of good work has been done lately, bringing to light a fine body of rich ore.

Silver King is developed to an extent of 110 ft. from the croppings by 2 shafts, and is turning out considerable ore of a high grade. The owners have on dump about 75 tons of free milling ore. Assays have run as high as $480 per ton.

Bon Mine.—Active operations will be commenced in a few days. The ledge contains good milling ore, assaying about $150 per ton.

ELY DISTRICT.

Review—Bullion.—Ely *Record*, Oct. 20: The shipments for the week are $74,537.49.

Meadow Valley.—Sixty tons of high grade ore are daily raised. Most of it is from Nos. 3 and 7 shafts. The Summit or No. 5 shaft is being sunk, and is 315 ft. in depth. The working force numbers 130.

The Raymond & Ely is producing 120 tons per day. Of this 90 tons are first class and 30 tons second class. The first class yields on an average about $160, and the second $65 per ton. The regular bullion shipment is about $15,000 daily. The Lightner shaft is down 525 ft., and still sinking. A cross cut is being driven from the 525-ft. level, which is expected to cut the ledge daily. There are about 10,000 tons of ore on dump.

Portland.—The workings consist of a shaft 80 ft. in depth, from the bottom of which a drift has been run 107 ft., where it cuts the ledge. The vein matter occupies 9 ft. from wall to wall; of this fully 5½ ft. is ora, 2½ ft. being of the very finest character.

Pioche Champion.—The new shaft has reached 80 ft. A whim has been built, which answers excellently.

Bowery.—The shaft is down 216 ft. and sinking is progressing rapidly. Stations have been opened at 55 ft. and 150 ft. respectively.

Amanda Tunnel.—The last contract was completed last Thursday, having reached a length of 271 ft. A new contract has been let for another 100 ft. The winze on the ledge cut by the tunnel is 45 ft. deep, and shows a solid body of the very richest ore, 3½ ft. in width. Assays made daily during the present average $500 per ton.

Excelsior.—Last week this mine shipped bullion to the amount of $10,000; about 15 tons of ore is being raised daily and hauled to the Magnet mill. At the 80 and 100-ft. levels stoping is proceeding. A winze has been sunk from the 80-ft. and raised from the 100-ft. level to afford better ventilation.

Chief of the Hill.—Ore is being taken out of levels Nos. 1, 2 and 3. Winzes are being sunk in No. 3 level 100 ft. apart. Winze No. 1 down 56 ft.; No. 2, 48 ft., and No 3 is just commenced. From 8 to 10 tons are taken out daily.

Baltic.—The incline is down 90 ft.

American Flag.—Both sinking and drifting are being pushed. There are about 200 tons of ore on dump.

Washington & Creole.—Sinking on the incline, which is fully 550 ft. in depth.

Pacific Tunnel.—Ten ft. has been run during the past week, making a total of 1,012 ft. The ledge cut by the tunnel is well defined and 8 ft. wide, showing considerable low grade ore.

Pioche.—On Monday this Co. will commence hauling ore to the mill, 100 tons of which are already on the dump. Ore is being taken out in the upper levels, while prospecting is going on in the 460 and 230-ft. levels.

Meadow Valley—East Ex.—Work is being prosecuted on the ledges struck in the cross cut. The winze is 32 ft. in depth.

Kingston.—A contract has been let to timber this shaft from top to bottom, a depth of 250 ft.

Mazeppa.—The working incline has reached 80 ft.

Orleans.—The incline is 185 ft. deep and shows a large ledge with some ore.

Jolly Travellers.—The vertical shaft is 100 ft. deep. In the lower portion some very rich strata of ore have been cut.

Pioche—West.—Vertical shaft is being sunk, which has attained 225 ft., about 15 ft. being made during the week.

Lillian Hall.—The west drift is in 75 ft., and shows some ore, but not of a high grade.

Arkansas.—During the week 15 ft. has been added to the depth of the shaft, making a total of 330 ft.

Spring Mount.—The shaft is a little over 300 ft. deep. Sinking is progressing.

Ingomar.—The contractors are sinking the shaft, and have attained nearly 500 ft.

HUMBOLDT.

Bullion.—Unionville *Silver-Slate*, Oct. 25.—Amount shipped from the Arizona since our last issue, was $7,720.

Battle Mt.—It is asserted that the yield of the White and Shiloh Con., during Sept., equaled $30,000.

REESE RIVER.

Reese River *Reveille*, Oct, 19.—Lone Star.—Sinking an incline from the 127 ft. level and getting first-rate ore.

Isabella.—The Ogden incline is being pushed rapidly; good ore coming from the O'Connell ledge; new lease let on the Isabella ledge, 25 men at work.

King Alfred.—The large shaft is being sunk fast day and night.

Grove Tunnel.—Kane and Ledolph, lessees at the 200 ft. east level, have a fine ledge, are getting elegant ore, and have about 15 tons of high-grade rock on hand. Hopley & Co., are also getting fair ore. Cahaley & Co., in 250 ft. level are getting magnificent ore.

Whitlach Union.—Breasting in the ore chamber continues.

Gen. Grant.—Very rich and in fine condition.

Jane Lenoe.—Some good ore is coming from the 100 ft. level.

Dollarhide.—Ashley and McAffee are engaged in freeing the mine from water.

Reed's Tunnel.—Good ore is coming from the incline, west from the tunnel; considerable amount of ore on hand.

North River Tunnel.—Driving ahead on the North River ledge and getting ore.

Iowa Tunnel.—Foxworthy and Co., had a crushing last week, the first class of which worked at the rate of $1,600 per ton.

Freehold.—Enlarging the shaft, expect to get steam hoisting works up next week.

Morgan and Muncey.—A new ledge is coming in on top of the old one.

Savannah.—Putting down the shaft steadily. A new reel is to be placed in soon.

Saratoga.—Working at both the east and west 340 ft. levels; good ore coming from both.

BELMONT.

El Dorado Co.—Commenced stoping out some very fine ore from the chimney north of Main incline on 340 ft. level; also raising on a stratum of fine ore from same level near incline. Contractors pushing the 400 ft. level southerly with fair prospects of reaching the large chimney which is exposed on level above. This Co. is working in the El Dorado and Arizona mines some 40 men, and on the mill over 20 men.

Monitor Co.—Have their tunnel No. 2, in over 460 ft; have about 40 ft. yet to cut the vein. Taking out very rich ores from the upper levels. Working on mine and mill about 54 men.

WASHOE.

Summary. — Gold Hill *News*, October 26: Belcher. — Hoisting through the incline by means of the new hoisting works, from the lower levels, commenced yesterday. About 130 tons per day continues to be hoisted through the Yellow Jacket shaft. The drift north at the 100-ft. level is in 198 ft. from the shaft, and the drift south from the ore-stopes to connect with it is in 242 ft. from the Crown Point line. The main incline is still sinking, and is down 80 ft. below the 1100-ft. level. The south drift at the 1200-ft. level is in 167 ft. from the Crown Point line, and at 200 ft. from that line a winze is about being commenced at the 1100-ft. level to intersect the drift or level below for ventilation, ore-hoisting, etc.

Woodville.—Daily yield 14 tons of high-grade ore. The ledge is 18 ft. wide.

Crown Point.—Developments at the lowest or 1300-ft. level are going ahead and turning out very satisfactorily, assays averaging over $100 to the ton. The Rhode Island, Sapphire and Petaluma mills, Gold Canon, are being run on ore from this mine.

Cons. Virginia.—Yesterday the work of sinking the shaft for a new level was resumed. The main west drift on the 1167-ft. level is pushed steadily ahead, still in porphyry. The cross-cuts south on the 500-ft. level are in low grade ore.

Crown Point Ravine.—Has a shaft 300 ft. deep, with a drift west from the bottom 40 ft. cutting the ledge.

Chollar-Potosi.— Daily yield 150 tons worth $27 per ton. The ore brests are not yielding as well as usual, and the ore is of lower grade. The main shaft is cleaned out and repaired to within 8 ft. of the head of the incline.

Sierra Nevada.—Daily yield 50 tons. Ore breasts in the upper and middle portions of mine are yielding well. The prospecting drift on the 500-ft. level is being pushed ahead.

Buckeye.—At the 3d and 4th levels the ore deposits are showing better as developed. The prospecting drifts at other points are progressing favorably.

Yellow Jacket.—The pump will commence draining the water from the lower levels next week. The drift north at the 1,300-ft. level is driving ahead, also the cross-cut east.

Knickerbocker.—The main west drift is in 249 ft. having made 25 ft. during the week.

Savage.—Sinking the incline is making fair progress. Daily yield of ore 155 tons, worth $27 per ton.

Union Cons.—Work in the north drift from the bottom of winze is suspended for the present. Work in the main west tunnel progresses steadily; in 290 ft.

Insurance.—Good headway is being made in sinking the incline.

Senator.—The shaft is down 220 ft. in good sinking ground, and making excellent progress.

WHITE PINE.

Bullion.—White Pine *News*, Oct. 19: The shipments during the past week, was $7,298.02.

Treasure Hill Mines—Eberhardt & Aurora Co.'s Mines.—The Eberhardt and Blue Bell shafts are sinking. In the Risdale and De Pase chambers the drifting from the bottom of the Risdale shaft to connect with the South Aurora tunnel, has been made. One load of ore is shipped to the Big Smoky mill daily. Working in the South chamber from the Lady's chamber, the ore being high grade, and making the usual shipments daily to mill.

Beecher Cons. M. & M. Co.—The ore in the old Blasdel works continues to hold out, and the regular shipment of rock to mill is made. In the Beecher works it is supposed a body of ore has been struck.

O. H. Treasure M.—The various workings are looking well.

Sunbeam—Continues sinking in the Moscow shaft, and running a little to the south in quartz.

East Sheroygan.—A drift is being pushed ahead to form a connection with the southwest drift, with favorable indications of getting ore.

Mammoth.—The bottom of the shaft is looking well, and down about 55 ft. in good ore.

Silver Plate.— Running in the tunnel, which is over 50 ft. deep, and in good ore.

Outside Dists.—The Canton Co.'s furnace will start up to-morrow, Sunday.

The Emma is taking out good ore of a high grade. The Troy, the first extension on the Hayes, has struck a body of high-grade ore in the shaft at a depth of 28 ft.

Mills—Big Smoky.—Running on ore from the Eberhardt & Aurora Co.'s mines.

Manhattan.—Running steadily on ore from the Beecher Cons. Co.'s mines.

Tailings Mill.—This mill is running on tailings from the Oasis mill, at Shermantown—working about 40 tons daily.

Schell Creek — McMahon.— Schell Creek *Prospect*, Oct. 19: The shaft is down 90 ft. from the croppings and shows ore of fine quality at the bottom. There are 2 shifts, 4 men on each working on it daily. The tunnel is in about 70 ft. There is a large quantity of ore on

Jupiter.—The shaft is down about 58 ft. showing good average ore at the bottom. The tunnel is in 62 ft., but does not show much ore.

Kavanagh Tunnel.—Is in 98 ft., the face showing a quantity of decomposed quartz.

Summit.—Men will be set to work in the course of a few days.

Tehama.—The tunnel is in about 325 ft. in decomposed quartz. The dump is pretty well filled with average ore. The mill will be finished in 3 weeks.

Schell Creek.—Running tunnel which is in some 230 ft. some quartz showing in the face. Three shifts to work daily.

Albert.—Working steadily on tunnel which is in about 65 ft. showing indications of soon striking ore. Ten men at work.

Queen Springs—Labross Tunnel.—Is in 200 ft. showing some quartz in face. The owners intend running it 200 ft. further. Two shifts are working.

Nutmeg.—Men will soon be put to work. A large quantity of ore on dump.

San Francisco.— The shaft is down 50 ft. showing very well; considerable ore on dump.

Silver Canon—Clayton.—There has been a tunnel started on the ledge following it into the hill, which is 30 ft. in quartz. The ledge is about 4 ft. thick.

Grace.—An opening has been made into the ledge some 14 ft. in length through good ore, a large quantity of which has been extracted and is on dump.

Silver Gate.—Shows a well-defined ledge of high-grade ore, about 5 tons on dump.

Arizona.

Mines and Mining.—Prescott *Miner*, Oct. 12: On the War Eagle a tunnel 28 ft. in length has been run, and between 12 and 15 ft. of it is in vein matter.

The Arastras at Weaver are running and grinding out considerable gold dust.

The placer miners around Prescott are making a living, and not much more, owing to the scarcity of water.

Z. Jackson told us that the seven days he was enabled to work his hydraulic diggings on Lower Lynx Creek, he with two other men washed out $800 in gold. Again, Mr. Lovejoy and two other men worked 3 days and 3 hours, the past summer, and made $375.

Colorado.

Bullion.— Colorado *Miner*, Oct. 17: The Stewart S. R. Co. have shipped since their last report 6 bars, valued at $5,259.36.

Idaho.—Collom's Concentration works, are rapidly approaching completion.

In Hukill Gulch the Fairmont Co. is putting up smelting furnaces of considerable capacity.

The Swansea furnaces at the Whale Mill are in successful operation.

The Victor is yielding large quantities of rich ore.

The Crisis has been recently sold.

On the Monteuse, Virginia Cañon, L. Cannon has let contracts for sinking a shaft to a considerable depth, and for driving a tunnel on the lode, 260 ft. The surface ore from this lode assays about 40 ozs in gold.

The Little Emma, a recent discovery, promises extremely well already. The owner has taken out considerable quantities of ore which averages 100 ozs in silver and ½ oz in gold.

The Edgar is yielding ores which carry a large per cent. of lead, and are worth about $100 in silver.

Up Chicago Creek, Cascade dist., Miller and Meade are driving the Essex Tunnel, with a small force; Lewis and Fuqua are working the Cascade, and O. Fallon, the Dublin Tunnel.

Minnesota.—The rich ore found in the south winze continues as they go down, and the foreman says as soon as the fourth level drift and this winze is connected, he will be able to take out enough $40 ore to run 10 stamps.

War Eagle.—We saw some fine specimens of sulphuret ores from the fourth level stopes south, where the vein is small, but very rich. The fifth level drifts are going in rapidly.

Items.—Swett & Gray have driven the Silver Bank tunnel 84¼ feet into Republican.

The Mammoth is being worked successfully.

The Glasgow is looking well. A four inch vein of solid mineral, very rich in sulphurets of silver, is in sight.

In one of the lodes of the Bruce tunnel, a good paying vein of mineral has been struck.

Montana.

Clean Up.—Helena *Gazette*, Oct. 14: Hobbs & Magarrity made a clean up from 100 tons of their quartz from the Eveline lodge, on the Park, this week, which yielded $5,400

French Gulch.—Deer Lodge *Independent*, Oct. 19: Mr. Allen is making from $10 to $18 to the hand.

Gilchrist has a number of men engaged in sinking a shaft upon the Parrott ledge near Butte City. The shaft is down 40 ft. and will be continued until a depth of 100 ft. is reached. Then levels will be run and the work of stoping begin.

We are informed that a new ditch will be constructed this winter across the main range, from Boulder creek to Carihoo gulch.

California gulch are realizing about $20 per day to the hand.

Washington Gulch.—From 40 to 50 men are working, and some of the claims are paying very well.

The American Flat Tunnel.—The American Flat Tunnel, on the Virginia and Truckee Railroad which was burnt out a few weeks ago is being rapidly cleared out and put in order. The south end caved very badly and the tunnel is probably blocked up solid for 150 feet or more. The Gold Hill *News* says that it will take some weeks yet to clear that out.

Academy of Sciences.

The regular semi-moutbly msstiug of the Academy was held on tbe 21st inst., Professor Geo. Davidson in tbe chair. The following nnusually large number of new members were elected: Louis C. Haggin, J. H. Weeden, Rev. Horatio Stebbins, Andrew McF. Davis, Wm. H. Foster, Jr., Wm. B. Thornbnrg, M. Jasper McDonald, Wm. Leffingwell, Wm. Doolan, E. D. DeCrano, John Perry, Jr., Wm. H. Seers, Capt. J. M. McDonald, H. J. Stewart, Morton W. Saunders, W. J. Miller, Wm. Lane Booksr, Jndgs Jobn Curry, G. S. Johnson, Dr. Wm. Calvert, Henry M. Fisk, M. D., B. F. Ellis, Henry P. Bowie. Messrs William Burling and Edward F. Hall were elscted life members. This is the largsst numbsr of msmbers admitted to the Academy in one evening since its formation.

Donations to the Cabinet.

Among the donations to tbe Cabinet was the head of a wbite-tailed deer, killed in the Coast Range of Monntains, fifteen milss west of Tnlare Lake. It was shot by Mr. John P. Walton, who says that it is tbs only specimen with a white tail tbat he had seen, among a thousand shot by him. When dressed it wsighed one hundred and seventy-five ponnds.

A large bonlder fonnd by Professor Davidson at San Pedro, was prssented, which contained fossil remains. Its peculiarity is simply tbat it resembls certain forms of a vsry ancient fossil, found in the *Laurentian* rocks of the Island of Anticosti, in ths Gulf of St. Lawrence. It is the first specimsn of the kind ever found in any other place.

A paper was pressnted by Dr. Dall, of tbe Coast Survey, entitled "A supplement to the revision of ths *Teretratulidae*, with additions, corrections, and a revision of ths *Craniidæ* and *Discinidæ*." Professor Davidson also presented his "Report of the examination of weights and balances of the Branch Mint of the United States. Mr. Bloomer showed a nsw species of fern called *Botrychium*, or "moonwort." There are bnt fonr specics of the genus recorded in onr botanical works. Its usual birth-places are in monntain meadows and pastures. Tbis specimen was collected by Mr. J. W. Dun, near Emigrant Gap—altitude about 5,000 feet. Mr. Bloomer also sbowed a standard antiquarian work on botany, 260 years old.

A Curiosity.

The Secretary read some extracts from the published proceedings of the Academy concerning wbat appeared to be a bundle of willow rods which were sent to the Academy some time since. Tbey were received in May, 1871, from Burrard's Inlet, Vancouver's Island. At the time tbey were sent no information concerning them could be obtained other than that tbey were tbe skeletons of some kind of fish. The "rods" were thought by some to be a species of *Zoophyte* allied to *Vulgaria*. At a meeting in July, 1871, a letter was read from George Dietz of Victoria, which stated that the bones supposed to be *Vulgaria*, were taken from a species of fish of the eel order, by fishermen near Burrard's Inlet. Dr. Blake tbought at the time that the "rods" were not fish-bouea bnt sponges, probably of a new form. He said tbey were interesting, from the fact tbat there were bnt two other *genera* which at all resembled them and which were peculiar to the Pacific.

In the 26th ofSeptember number of *Nature*, an article appeared which was the substance of a paper read by P. L. Sclater, before the British Association at Brighton in August. That gentleman had received some of the same kind of specimens, which looked like long, thinpeeled willow wands a quarter of an inch in diameter at the thick end. He thought they were of animal origin and was inclined to regard them as possibly the bones of some of the gigantio Rays. Mr. Sclater sent some of the specimens to Professor Kollicker of Wurburg, who had been engaged on a monograph of the Peunatulidæ. He said the specimens were new to him and thought they were of a new genus.

Captain Hnrd wrote to Mr. Sclater from the locality where tbey were found and described the "rods" as the back-bones of a sort of fieh whicb abounded there. The animals were shaped like a conger eel, but were quite transparent, their bodies being composed of a sort of jelly and about eight inches in diameter. The head is like a shark's; it is attached to the thick end of the rod or back-bone; it has two eyes and a mouth placed low down. The back-bone is also transparent in tbe living animal, but becomea bard when dried on the beach. The fish were said to swim about in shoals with the dog-fish. Mr. Sclater says he can only suggest that the "roda" may be the hardened notocords of a low, organized fish, allied either to the *Chimaeroids* or to the Lamprey, in which the notocord is persistent through life. It was evident that the object was quite unknown to science and it was very desirable to obtain a complete specimen.

Dr. Blake said he had sent to several parties in Burrard's Inlet, in order to obtain a specimen, and had not succeeded in doing so, they answering that it was impossible to procure any. The "rods" burn aud smell like bone, bnt the Doctor wonld not he certain until he had seen a specimen.

Professor Davidson then read and solved some

New Problems in Mensuration,

Which were as follows:

1. Given, the two diameters of the zone of a circls, to divide ths area of the zone into two zones of eqnal areas, in terms of the givsn diameter.

2. Given, tbe diameter of the zone of a circle to be divided into two zones of eqnal area, to obtain the diameters of a consecutive series of zones of equal arsas with each of the two zones, within the smaller and without the larger diamstars of tbe given zone, in terms of the two given diameters.

3. Given, the diameter of the zone of a circls, to divide the zone into two, three or more zonss of eqnal area, in terms of the two diameters.

4. Given, tbe diameter of a circle, to divide the area thereof into any nnmber of zones of eqnal area with each otber, in terms of the given diameter.

Dr. Blake's remarks on the "Topography of the Great Basin," will bs found in another column.

Economical Mining.

We ars almost daily reminded of the fact, says the *Mining World*, tbat manual labor is as expensive a mode of conducting mining opsrations as can possibly bs dsvissd. Mining captains ssem to be qnite deficient in enginesring, or mining companies are slow to nndsrstand the economies and ntilities of modsrn appliancss, else we wonld find them in more gsneral nss. Evsry device which ingenuity can snggest should bs introduced to reduce mannal labor, and all the rssources of mechanism at command, and applicable to mining purposes, sbould bs adopted in order to be abls to mine at great dspths as cheaply, or nsarly as cbeaply, as nearer ths snrfacs. It has been fnlly demonstrated tbat the most profitabls mining is that wbich yields tbe best ores, and that the ores of tbe best mines extsnd to a great depth in the earth—except in the case of the soft bematites—and therefore tbe bsst appliances of engineering skill are necsssary to master the work and bave it done economically.

We know that the greatest objection raised against our argument will be that the limited amount of capital set apart for the developing of mines, will not allow the mining engineer to furnish himself with such facilities as be tbinks he needs; but while we will admit that this is a fair reason wby improvements bave not been introduced, we will not admit that the reason is valid. No company should undertake a large enterprise with the expectation of making it a success without being prepsred to meet all tbe demanda which may be made against it for facilities for operation; and it will usually be fonnd tbat where too great economy is used for tbe purposea of profit, loss is likely to follow, Thus the doctrine should be, to eqnip every mine which is worth working with all the labor-saving machinery which can in any way be adapted to the circumstances, to take the place of hnman mnscle. Tbere is now a gensrsl complaint regarding the scarcity of men, and tbis complaint will continne and intensify until machinery is more generally nsed.

Colorado's Mining Outlook.

A well-informed and scientific gentleman from New York City, who has spent several weeks in a close and critical examinaaion of our mining interests, has kindly given us a brief extract of his conclusions, which will be read with interest. He says:

Although the mining business in Colorado has been disastrous to many in the past, and may be to more in the future, a better day is breaking. The minea are good and always have been. Tbegold and silver is here and in pleuty. The trouble has been so far that the mining has been done ignorantly and extravagantly, and ignorance and extravagance would ruin any business, east or west, no matter what the capital to back it. All the later changes, however, conduce to economy and saving. For a long time the old way of developing a mine was to sink a shaft and take ont the ore through the moutb, working down at an immense loss of power and time. Now they have learned to tunnel in at the foot of the hill, strike the vein far down and work np. Tbis method not only saves power and time, in getting out the ore, bnt makes the mine self-draining and dispenses with pumping.

We now see hnge tunnels built throngh the larger and richer hills, not to strike one vein, bnt all that may be in the hill. Improved reduction works are also being set up, which by the nse of new and more scientific processes, save a large percentage of the ore. Heretofore the methoda of reducing have been rnde, wasteful and ignorant. Again, tbe multiplication of tbeir works by breaking np monopoly, rednces the cost of the mine, and ensnres a large and profitable return.

The above ontlook over the past and pres ent is equally correct and gratifying. Profiting by tbe errors and waste of the earlier days, we may safely anticipate snch retnrns from our mines as will make them rank with the richest and most profitable the world has ever known.—*Denver Tribune.*

The Price of Tin.

Tin and tinned iron have continned to rise throughout ths United States during the year, and thsy will continne so to rise. Ths advance has an important effect on the prosecution of many industries, notably that of fruit, meat, and fisb canning, which on this coast, as well through the United States, forms an important and flourisbing manufacturing interest. For many months the prics of all classes of goods of this kind has risen in consequencs of the advance in tin and iron. That advance has been caused by the immense increase in the demsnd for tinned iron, tbat has sprung np this year, particnlsrly in this conntry. England is ths great source of tin eupply to Europe and America, and the produce of ths tin mines of the East-Indian Archipelago passss through the hands of her merchants before it can reach the consnmer. Hsnce, the ratss prevailing in tbe English market, give tbe tone to those of almost all the rest of ths world. Now France has required this year five times the quantity tbat she did last year, and tbe Unitsd States twice as much. In fact, of 14,525 tons exported from Grsat Britain in the month of May last, 12,055 tons were exportsd to this conntry, and of 43,391 tons exported dnring the first five montbs of 1872, tbe United States took four-fifths. The fluctuations in the price of tin for the last twenty years have been vsry great. In 1849, block tin was worth in England $384 per ton, subsequently fell to $204, and is to-day $758.40. As compared with last year, pressnt quotations are as follows:

	1872.	1871.
Eng. Land F. Ingots	$758 40	$648 00
" Bars in Barrels...	763 20	652 80
" Rsfined.....	768 00	657 60
Banca.....	768 00	652 80
Straits.....	724 80	632 80

This shows a large advance, and we will, before long, have to report a larger, as the English mins owners are keeping back tbe ore so as to secnre high rates. The miners have been emigrating largely for sometims past; as a consequencs, wages havs risen, and thsy insist, that in order to prevent a rednction of profits, prices mnst rise also. The consideration of these facts ongbt to givs an impstus to the development of tbe tin mines of this coast.

Canal and Narrow Gauge R. R. Combined.—Among the designs exhibited at tbe late State Fair is one very modest in appearance, but full of merit, by George G. W. Morgan, of Sacramento. It is for a canal and single track, narrow gauge railroad combined. Tbis plan, it appears, is in successful operation in Switzerland, and can he built at a very small expense. A canal would reclaim onr waste lands, transport freight at a minimum rate, open np new towns and cities — like the Erie canal of New York—and be a never ending source of wealth to the State.—*Sacramento Union.*

Mining and Farming.—The Nevada *Transcript* says: John Schmidt owns a qnartz ledge on Wood's Ravine, which for more than a year himself and his two boys have worked with little help, and at little expense. He raises grapes on top of the gronnd and gets gold below the roots of his vines. Tbey have taken ont considerable money, and have now a fine ledge of quartz which pays $50 per ton. He has taken out at times several hundred dollars in a day.

Quicksilver Mines of India.—The following shows the steady increase of the annual produce of mercury from these mines:

In the year	1865.....	302,300 lbs.
"	1866.....	323,100 "
"	1867.....	463,900 "
"	1868.....	512,100 "
"	1869.....	566,400 "
"	1870.....	661,800 "
"	1871.....	000,000 "

(Austrian commercial weight,)

An Ingenious Apparatus has been invented hy a French physician, hy which the heart is made to register photographically its own pulsations. Snch, it is said, is the peculiarity of the apparatus, in its adaptation to different uses, that it may be modified so as to register the variations of the respiration, the irregular action of conghing, and similar physiological phenomena.

Coal Lands.—The Commissioner of the General Land Office bas decided that coal lands are mineral lands, and snbject to sale as snch. This decision waa made on an appeal taken hy some parties wishing coal lands on tracts claimed under tbe land grant of the Coos Bay Wagon Road.

Another Immense Bridge.—It is proposed to throw an immense bridge over the Hudson river at Poughkepsie. The bridge will be composed of five spans of five hundred feet eacb, and it will be one bnndred and twenty feet in hight. It will connect New England with the coal-fields of Pennsylvania.

Weight of Woons.—Ebony wood weigbs 83 pounds to the cubic foot; lignumvitæ, the same; hickory, 52 pounds; birch, 45 ponnds; beech, 40; yellow pine, 38; cedar, 28; white pine, 35: and cork, 15.

The secret pleasure of a generous act is the great mind's great bribe.

Pudrolithe—The Safety Blasting Powder.

The importance to minsrs of a cheap and reliable means of fracturing the rocks met with in the course of their operations is so generally acknowledged that for some years past the attention of chemical invsntors has been turned to the production of blasting componnds at once cheaper and more powerfnl than ordinary gunpowder, and amongst the more recently introdnced matsrials resulting from thsse inventive efforts pndrolithe will, it is anticipated, take prominent position. Pudroliths, it appears, has bssn largely nsed in Belgium for blasting purposss during the past year or two, and has given the grsatest satisfaction to all who have tried it; it bas now been tested in this country, and with equally favorable rsults; so that, assuming the extraordinary properties claimed for it to bs proved, thsre need hs little doubt that it will quickly become an article of great commsrcial importance. The material is said to bs non-liable to explosion sithsr hy friction or percussion; it can be hammered npon an anvil without danger, and is altogether so harmless when uncompresssd that it can be fired by the naked hand with a common cigar-light without causing explosion, whilst should it accidsntaly becoms damp it can be dried on a bot plate without danger, and without injury to its blasting power.

During tbe past few weeks experiments have been made at Llanymynecb, in Wales, and at Lamora, in Cornwall, and tbe workmen appear to be as satisfied with the properties as could be dssired. Ths experiments were, in both instances, conducted by Mr. Poch, tbs son of the inventor; and still more recently anotber trial was made at the Trswollack Minss, St. Columb, whers, the shots being fired in an ordinary end, sven more reliable conclusions as to its merits could bs formed. In order to show the agents and miners how free from smoke the levsl would be (even when not well ventilated), as well as to exhibit tbs strength of the componnd, two 18-in. holes wers bored, which wonld bave nscessitated ten inches of blasting powder. Into these holea seven in. only of pudrolithe was tamped, and they were fired simultaneonsly. Tbe hard blue killas (than whicb scarcely any ground tougher could have been selected) is said to have been literally ripped np, the action of the explosion being downwards chiefly, and in five minutes—timed particularly—the agent, with his chief pitman, went in and declared the level more free from smoke than wonld have been tbe case with ordinary blasting powder after twenty minutes had elapsed from the time of the explosion. The men at once commenced clearing the end. Miners will judge of the probable character of the end when it is stated that the level was rnn in from the engine-shaft about 90 fms., and had no other communication with the surface.

In the experiments at Mr. Savin's lime rock, at Llanymynecb, as in tbose at Messrs. John Freeman and Son's granite qnarries at Lamorna, and those just alluded to, the quantity of tbe pudrolithe used was about two-thirds the ordinary charge of gunpowder; that is to say, if a hole were considered to require 18 in. of ordinary blasting-powder, 12 in. of pndrolitbe; and similarly 14 in. of pudrolithe iustead of 21 inches of powder, and so on. But tbe great advantages claimed for pudrolithe are that it may be stored away for any period, conveyed in any manner by land or water, and snbjected to all temperatures of climate without possibility of explosion or injury; and that its manufacture is unattended by danger, which appears inseparable from the mannfactnre of ordinary blasting powder and most other explosive compounds, whilst it can be supplied at a price much below that of any blasting material at present in the market.—*London Mining Jour.*

Wire Tramways in Austria.—The transport of compressed turf to Gratzen, a station on the Austrian Francis-Joseph Railway, in Bohemia, is now effected by a line of Hodgson's Wire Tramway, 4,360 metres, or about 2¾ miles in length, The steel wire cable is 15 millimetres in diameter, supported on pulleys placed abont 68 yards apart, and rnnning ronnd horizontal wheels at the extremities, one metre in diameter, of which one is driven by a 10-borse-power portable engine, at the station end. In a working day of ten honrs, five or six men can thus transport from 1 to 500,000 kilogrammes (100 to 500 tons) at a epeed of six to eight feet per second, and at a cost of about 3d. per ton, per kilometre, nearly 5d. per mile. The cost of construction was 13,125 rf. per kilometre, or £850 per mile.

When Shall Manufacturers Pay Their Employees?—Rochester, October 16th.—At tbe State Congregational Convention to-day, the following was offered for consideration:

Whereas, The experience of manufacturers and other employers, both in Europe and America, proves that the payment of employés on Monday instead of Saturday results in a better observance of the Sabbath, less intemperance, and marked moral and pbysical and financial improvement, both of the establishments and the localities where it is practiced:

Resolved, That the subject is worthy of the careful consideration of patriots and Christian people.

Useful Information.

Water—What Might Happen.

Water is the great mechanical power in natnre. It is the great leveler; it moves moontains and fills valleys. All onr stratified rocks, sandstones, slates, and limestonea were formed by the action of water. To the solvent power of water and its chemical action we owe our nseful minerals, our metallic deposits, our iron, copper, zioc, gold and silver ores, and even coal. To its physical properties—its relations to heat, we owe all the phenomena of clonde dew, rain, fog, snow, and froet. It snpports the plants and briugs them their mineral food from the soil, and protects them from excessive heat. Animals are eqnally dependent upon it. Yet after all, it is only the agent of the snn; it ie snn power that makes plante grow; it ie sun power that moves everything in the world, and water is merely the eun's agent.

The loss of water upon the earth wonld produce the same condition of things on the earth that we notice now in the moon. Although we have snch a vast quantity of water, yet it is only 1-240,000 part of the earth, or 0·0042 per cent. The crystalline rocks at the earth's surface now contain a larger qnantity of water than this, and tho moment our earth cools enongh to absorb four-thonsandths of one per cent. of moistnre, the ocean will disappear. If we should lose our ocean, we shall lose our atmosphere also; the openings or poree in the rocks will receive it hy gravitation, and wo shall have the same condition of things as now exists in the moon.

How to Photograph Leaves.—Get two bits' worth hi-chromate of potash from the druggist and dissolve it in a two-ounce vial of soft water: pour off some of the liquid into a shallow dish; on this float a piece of ordinary writing-paper uutil it is thoroughly and evenly moistened. Take it from the water and let it become nearly dry *in the dark;* it will then be of a bright yellow color. On this prepared paper place the leaf to he photographed, and under it a piece of soft black cloth, and several thicknesses of newspaper. Pnt the whole between two pieces of glass and fasten together at the edge (say with spring clothes-pins). Now expose to a bright eun-light, placing the glass so that the snu will directly fall upon the leaf. In a few minutes it will hegin to turn hlack; bnt it requires from thirty minutes to several hours (according to the light, etc.,) to prodnce a perfect print. When the print has become dark enough, take the paper out and put it in clear water, which must be changed every few minutes till the yellow part becomes perfectly white. If the work is well done, the veins of the leaf will appear very distinct.

Cement for Fixing Glass Letters.—Some say a solution of shellac in methylated spirits will be snfficient, and also water-proof. Others recommend the following cement: Powdered orange shellac, 1 oz; alcohol. 2 oz. Place the containing hottle in a warm place. Agitate frequently until all the lac is dissolved. Apply cold. This will resist wet, and will cement strongly metals, wood, porcelain, glass, etc.

Then, again, it is eaid a thick solution of marine gluein naphtha will answer perfectly if color is no object. But the glass mnst be chemically clean, and thie is not always easy. The least trace of soap or grease will spoil the adhesion of any cement. Try soda or ammonia, followed by whiting and water, clean clothes, and plenty of rubhing, and let the cement dry on the letters till the surface just hegine to he "tacky" before yon apply them. Many excellent recipes fail on a fret trial, from the omission of some minnte precautions which are of more importance than some enppose.

Summer Temperature of San Francisco and Phiaadelphia.—The hottest noon-day temperatnre of July, at Philadelphia, was 98°, and the coldest 69°. The warmest noon-day temperature at San Francisco was 69°, with the exception of a single day when it was 71°. The coldest was 60°. So the warmest days in the latter place correspond almost exactly with the coldest in the former. Whilst Philadelphians were dropping in the street from sun-stroke, San Franciscans, though more than two degrees farther from the Pole, clad in cloth and flannels, were huttoning their coats and shivering in the chill wind.

Curious Facts about Oxide of Iron.—Oxide of iron when freshly formed freely absorbs the sulphuretted hydrogen or fonl gas, thne forming the hlack sulphide of iron; this, when exposed to the atmosphere, deposite its sulphur, and by the absorption of oxygen hecomes converted again into the oxide of iron. The sulphur which it had before taken in as sulphnretted hydrogen is thns set free among the particles of oxides, which, by a snccession of fonlings and revivificatione, hecomes so charged and clogged with inert sulphur that the air loses the power to restore it.

To Bleach Feathers. — First clean from greasy matter, then place the feathere in a dilute eolution of hichromate of potaeea, to whioh a little nitric acid has been added. The greenish depoeit of eesquioxyd whioh enenee may he removed by weak sulphuric acid, when the feathers will be left perfeotly white.

What Some People Drink. — Dr. Hodges, of Belfast, has recently had occasoin to analyze several samples of "whiskey," and has published the results of his examination in the *Dublin Evening Mail.* A bottle of whiskey, described as a fair sample of the drink sold in low-class pnhlic honees, was on examinstion found to he heavily adolterated with naphtha, cayenne pepper and vitriol. Another sample was composed almost entirely of naphtha, slightly colored with gennine whiskey; and a third delectahle compound had not even a "coloring" of the genuine spirit, heiog a pleasiog combination of cayenne pepper, oil of vitriol, alcohol, and sulphate of copper, which could he produced by any amateur ohemist at the rate of one penny per gallon. After this, one ie not enrprised to learn that the physical reeults of the consumption of this diabolical decoction are "frightful."

New-Fibaous Mateaial.—J. Schreiber & Co. of San Francisco have recently taken ont a patent for the working of the inner hark of Port Orford cedar into material snitable for upholsterers' stock and paper stock. The bark has a long and tongh fibre, is quite soft and elastic when beaten up or otherwise prepared. Pulu is going ont of nse as a cheap hedding material. If cedar bark is cleaner and hetter it may come into extensive use. There is an abundance of this hark wherever there are eawmills in operation. A clean, soft, elastio and cheap hedding material has long been wanted. It is possible that this want is to be met in the new preparation of cedar hark.

An Extraordinary Lake.—Lake Kenks, or Crooked Lake, sitnated in the center of the grape region of Weetern New York, is 487 feet ahove the level of the Atlantic. Its length is 22 miles and its greatest hreadth 1¼ miles. The ontlet which flows into Seneca lake has a descent of 270 feet in 7 miles. Once every year, nsnally in May, the lake purifies its waters by throwing to the surface a yellow substanco, which extends and emells like sulphur and gradnally extends until the face of the entire lake ie oovered. Thie remains about a week and then snddenly disappears in a day, and is not seen again until the next season.

A Varnish to Imitate Ground Glass.—Dissolve 90 grains of sandaric and 20 grains of mastic in two ounces of washed methylated ether, and add, in small quantites, a sufficiency of henzine to make it dry with a snitable grain —too little making the varnish too transparent, and an excess making it crapy. The qnantity of henzine required depends upon its qnality—from half an ounce to an onnce and a half or even more; but the hest results are got with a medinm qnality. It is important to nse wssbed ether, free from spirit.

Excellent Varnish for Harness.—Pulverize and put in a jng or hottle half a pound to a ponnd of gum-shellac, cover with good alcohol, and cork tightly. In about two days, if shaken frequently, the gum will he dissolved and ready for use. If the liquid appers ae thick as thin molasses add more alcohol. To one quart of the varnish add one ounce of good lamphlackt and an ounce of gum camphor. An occasional coat of this is also good for rendering boots water-proof.—*Rural New Yorker.*

To Remove Tar and Resinous Substances. Dr. Brickerd (*Med. and Surg. Reporter*) discovered by accident that a mixtnre of powdered extract of liqnorice and oil of aniseed will quickly and effectually remove tar, Venice tnrpentine, pitch, etc., from glass, porcelain, and the skin, and is entirely harmless. For the latter purpose the mixture shonld he ahout the consistency of thick cream, and should he thoroughly applied; being followed by soap, warm soft water and a sponge.

A Cement to stop cracks in glase vessels to resist moisture and heat: Dissolve caeeine in cold eaturated solution of horax, and with this solution paste strips of hog's or hullock's hladder (softened in water) on the cracks of glass, and dry at a gentle heat; if the vessel is to he heated, coat the bladder on the outside hefore it has become quite dry, with a paste or rather concentrated solution of silicate of soda and quick lime or plaster of Paris.

Decay of Gutta-Percha.—It is a fact worth knowing that gutta-percha decays rapidly, and becomee hrittle and porons when dry and exposed to the light, hut under water appears to undergo no change whatever. Gntta-percha sunk in the sea for twenty yeare shows no sign of decay which may he regarded as a condition in which nature comes to the aid of mechanical and electrical science.

Illinois Timber for England.—The statement is made hy the Secretary of the Iowa Board of Agrionltnre that a short time since a single individnal, whose name is not given, entered into a contract to furnish the British Government with five million cubio ft. of white oak, all of whioh ie to he cnt from foreste within fifty miles of Cairo, Ill.

Paper labels on bottles may he preeerved hy rubbing them, when dry, with paraffine, and then smoothing them out with a glae rod.

A cubic foot of air weighs 522 grains. A cubic foot of water weighs 1,000 ounces.

Good Health.

Sleep the Best Stimulant.

The polpit, the bench, the har, the forum, have contribnted their legions of victims to drunken habits. The heautiful woman, the sweet singer, the conversationalist, the periodical writer have filled, hot too often, the drunkard's grave. Now that the prces has become such a great power iu the land, when the magazine mnst come out ou a certain day, and the daily newspapers at a fixed hour, nothing waits; everything must give way to the inexorahle call for copy, and, sick or well, disposed or indisposed, asleep or awake, the copy mnst come. The writer must compose his article, whether he feels like it or not; and if he is not iu a vein of writing, he must whip himself up to it hy the etimulus of drink. Some of the greatest writers in the country have confeseed to the practice on urgent occaeioos, of taking a sip of hrandy at the end of every page, or even oftener. It may have eecaped the general reader's notice that more men have died young who have heen connected with the New York press withiu ten years, and that, too, from intemperance, than in all other educational callings put together; young men whose talents have heen of the first order, and gave promise of a life of usefulness, honor and emineuce. The hest possible thiug for a man to do, when he feels too tired to perform a task or too weak to carry it through, ie to go to hed and sleep—a week if he can. This is the only true recuperation of hrain power, the only actual renewal of hrain force. Because, during sleep the brain is in a state of ease, in a condition to receive and appropriate particles of nutriment from the hlood which take the place of those which have been consumed in previous labor since the very act of thinking consumes, burns up solid particles, as every turn of the wheel or screw of the splendid steamer is the result of the consumption hy fire of the fuel in the furnace. That supply of consumed brain substance can only he had from the nutriment particles in the hlood which were ohtained from the food eaten previously —and the hrain is so constituted that it can hest receive and appropriate to itself those nutriment particles during the state of rest, of quiet and stilluess in sleep. Mere stimnlents supply nothing in themeelves—they only goad the brain, force it to a greater consumption of its snhstances, until that substance has been so fully exhausted that there is not power enough left to receive a supply, jnst as men are so near death hy thirst or starvation, that there is not power enough left to swallow anything—and all is over. The incapacity of the brain for receiving recuperative particles sometimes comes on with the rapidity of a stroke of lightning, and the man becomes mad in an instant loses seuse, and is an idiot. It was under circumstancee of this very sort, in the very middle of a sentence of great oratoricsl power, that one of the most eminent miods of the age forgot hie ideas, pressed his hand upon his forehead, and after a moment's silence said: "God, as with a eponge has blotted out my mind." Be assured, my readers, "There is rest for the weary" only in early and ahundant sleep, and wise and hsppy are they who have firmness enough to resolve that "By God's help I will seek it in no other way."—*Ex.*

How Long Should a Man Live.—According to Professor Faraday, the crime of suicide is very common in this age of the world, and he intimates that all who die uuder one hundred years of age may he charged with self-murder. Providence having originally intended man to live a century, would allow him to arrive at that advanced period if he did not kill himself by eating unwholesome food, allowing himself to he annoyed hy trifles, giving license to passions, and exposiug himself to accident. Flonrin advanced the theory that the duration of life is measured hy the time of growth. When once the hones and epiphysis are united, the hody grows no more, and it is at twenty years this union is effected in man. The natural termination of life is five removes from the several points. Man being twenty years in growing, lives five times twenty years, that ie to say, one hundred years; the camel is eight years in growing, lives five times eight years, that is to say forty years; the horse is five years in growing, and lives twenty-five years, aud so with other animals.

Carbolic Acin in Small Pox.—In a recent numher of the *Lancet*, Dr. Alexander Watson recorded eeveral cases of small pox and scarlet fever in which the external application of carholic acid met with marked success. In the csse of one patient with small pox, whom he saw at the period when papulæ appeared, he ordered an enema, and then had the patient (a girl of eleven years) sponged all over with carholic acid soap suds. On the next day a severe attack of confluent small pox was threatened, hnt the child was sponged as she had previously heen, and then her whole hody wae painted with carholic acid glycerine of the British Pharmacopœia. Five grains of Dover's powder were then given to allay irritability, and the little girl elept quietly for several houre, when she wae sponged again. No vesicles formed, and the patient was convalescent in a few daye. Carbolic acid was, in the meantime, plentifully used about the room.

Hemlock as a Poison.

How It Worked in the Case of Socrates.

No poison claims a higher antiquity or a greater historical interest than hemlock. To the physician there is nono that snrpssses it in physiological interest. The bare mention of the plant carriee ono back to the days of the Grecian republic, and recalls the undying name of Socrates, Theramenes, and Phocion—men who have suhmitted to the baneful influence of hemlock rather than betray the liberty of their country. If we would learn the effect of the Athenian State poison, we may have Plato for our teacher, and for a subject him of whom Cicero jnstly eaid "that he was the first who called down philoeophy from heaven to earth, and introduced her into the public walks and domestic retirements of men, that she might instruct them concering life and mannere." "Socratee," says Plato, "received the fatal cup withont change of countenance or the least perturhation. His executioner directed him to walk ahout until he ehould feel his legs becoming heavy. He did so until the chilliog operation compelled him to lie down; then it eeized upon the more vital parts. The executioner approached him, said to his friende that when the effects of the poisou would reach hie heart Socrates would depart. Then, uncovering him he found that the lower portion of the hody was cold. At this time Socrates spoke these last words to his friend Critto; "Critto we owe Esculapius a cock; pay the debt, and do not forget it," snd in a short time wae convulsed. The man then uncovered him; his eyes were fixed, and when Critto observed this, he closed his eye-lids and hie mouth.

In this account we have ample proof of the actiou of hemlock. The legs grow heavy, and the chilling effects creep on. The victim no longer able to stand, lies down; at last the respiration ceases, accompanied, as is nsual in such cases, hy a slight convulsive tremor, the mind remaining clear snd tranquil to the last.

Remedy for Wounds.

A correspondeut of the *Country Gentleman* gives the following as one of the best remedies known for the cure of wounds: "Take a pan or shovel with burning coals, and sprinkle upon them some common brown sugar, and hold the wounded part in the smoke. In a few minutes the pain will be allayed, and recovery proceed rapidly. In my own caee a rusty nail had made a bad wonnd in the bottom of my foot. The pain and nervous irritation were severe. This was all removed hy holding it in the smoke for fifteen minutes, and I was able to resume my reading in comfort. We have often recommended it to others, with like results. Lately, one of my men had a finger-nail torn ont hy a pair of ice tongs. It became very painful, as was to have heen expected. Held in sugar smoke for some twenty minutes, the pain ceased, and it promises speedy recovery."

This sounds very much like one of those remedies which need supplementing hy an abundant faith to produce their heneficial effect. The products of the imperfect combustion of sugar are water, carbonic acid, and a dense volume of carhon in the form of soot.

Remedies for Corns.—A correspondent of the *Country Gentleman* states that he has fonnd the following a simple and effectual remedy for corns. "Bathe the feet in tepid water, to soften the corns; pare these off very cloee with a sharp knife; then rub on well, green peach-tree leaves; when, after continning the rnhhing once or twice a day, the corns will disappear.

A good corn salve could no doubt be made for winter use, by bruising the peach leaves when green; then hoil them in water nntil the strength is extracted, then take out the leaves, strain the water off the sediment, add a sufficient quantity of resin, heeswax, tallow, aud lard oil to make it soft enough, and simmer down, without hurning, until the water is evapporated. Soften and pare the corn, as before directed, spread the ealve on a small piece of cambric or linen, and apply, putting on the sock or stockiug very carefully, so as not to rub it off. Keep applying until the corn disappears."

The following is a recent English recipe for the same purpose: Bathe the feet well in warm water, then with a sharp instrument pare off ae much of the corn as can he done without pain or causing it to bleed, and dress once a day with a salve made of hlack oxide of copper and lead in eqnal quantities.

Turpentine in Headache.—Dr. Warhnrton Beghie advocates the use of turpentine in the severe headache to which nervons and hysterical women are subject. There is another class of sufferers from headache, composed of hoth sexes, who may he relieved by turpentine. I refer to the frontal headache, which is most apt to occur after prolonged mental effort, hnt may likewise he induced hy nnduly sustained physical exertion—what may he styled the headache of a fatigued hrain. A cup of very strong tea often relieves this form of headache; hut this remedy, with not a few, is perilous, for, bringing relief to pain, it may produce general restlessnees and—worst of all—hanish sleep. Turpentine, in doses of twenty or thirty minims, given at intervals of an hour or two, will not only remove the headache, but produce in a wonderful manner that soothing influence to which reference has already been made.

MINING AND SCIENTIFIC PRESS.

W. B. EWER.....SENIOR EDITOR.

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ILLUSTRATIONS AND REPORTS OF MINING ENTERPRISES WANTED.—Drawings or photographs of mining works that are of general interest to our readers are solicited for publication in this journal. Official reports of Companies, and description of mines of importance, of special interest, are also desired. Sketches of any new method and discoveries will be very acceptable.

San Francisco:

Saturday Morning, Nov. 2, 1872.

Gold and Legal Tender Rates.

SAN FRANCISCO, Thursday, Oct. 31, 1872.—Legal Tenders buying, 88¾; selling, 89⅛. Gold in New York to-day, 112⅝.

Table of Contents.

ILLUSTRATIONS.—Hands, 173. The Sutro Tunnel, 181-2.
EDITORIALS.—Mineral Land Decision; Narrow Gauge; The Diamond Question, 173. Academy of Sciences; The Price of Tin; Mechanics' Art College, 284.
MECHANICAL PROGRESS.—Fragrant Bisulphide of Carbon; Mechanical Skill in China; To Render Glue Waterproof; Tempering Steel; Wooden Shins; Relative Value of American and English Iron. 275.
SCIENTIFIC PROGRESS.—Dust Explosions in Flour Mills; How Trees are Killed by Lightning; Lightning in the Spectroscope; Cause of Change of Color in Fishes; A Beautiful Experiment; An Electric Telegraph in 1818. 275.
MINING SUMMARY from various counties in California, Nevada, Arizona, Colorado, Idaho and Montana; Mining Shareholders' Directory, 276-7. Market Reports, 284.
USEFUL INFORMATION.—Water—What Might Happen; How to Photograph Leaves; Cement for Fixing Glass Letters; Summer Temperature of San Francisco and Philadelphia; Curious Facts about Oxide of Iron; What Some People Drink; New Fibrous Material; An Extraordinary Lake; A Varnish to Imitate Ground Glass; Excellent Varnish for Harness; To Remove Tar and Resinous Substances; Decay of Gutta-Percha, 279.
GOOD HEALTH.—Sleep the Best Stimulant; How Long Should a Man Live; Carbolic Acid in Small Pox; Hemlock as a Poison; Remedy for Wounds; Remedies for Corns; Turpentine in Headache. 279.
MISCELLANEOUS.—Notes on the Reduction of Gold Ores; Topography of the Great Basin; The College Contract. 274. Economical Mining; Colorado's Mining Outlook; Canal and Narrow Gauge R. R. Combined; Pudrolithe—The Safety Blasting Powder; Wire Tramways in Austria; When Shall Manufacturers Pay Their Employees. 278. A Modern Manufacturing Village; Mineral Hill Silver Mines of Nevada; Shed-Hatching in 1872; International Exhibition in Philadelphia in 1876. 282. Patents and Inventions; New Incorporations; Mining Sales and Accidents, 284.

TO POSTMASTERS.—The interests of P. Ms. and newspaper publishers are, or should be, mutual. We assist the public in a kindred line. Out of 1,000 P. Ms. we know that 990 are friends of the PRESS. We do our best to make them so. They have a regard for respectable newspapers above that of ordinary merchandise such as is creditable to both heart and brains. But we regret to say there are a few exceptions among postmasters in this respect. There is one, in one of the large towns of the State of Nevada. At his office our papers are thrown into a heap, and subscribers, (if not others) are served with the paper that comes first no matter whose name is on it. We invite that P. M. to correct this. Failing to do so, we invite our subscribers to make a written statement, verified by one or more witnesses, and send to Mr. Barstow, Postal Agent, San Francisco and ask for redress.

THE VIENNA EXPOSITION.—It is said that American interest in the Vienna Eposition has been much quickened lately, and that a more generous and appropriate representation of our industries will be made than was at first supposed. The Austrian Government are anxious that the Americans should be well represented, and offer every facility and ample space. Prominent manufacturers should profit by this opportunity to exhibit their wares in a place where they will be seen by many. It is probable that as the time approaches for the Exposition to open, an increased interest will be felt and we will not be behind other nations in the extent, variety, or value of the other articles exhibited.

THE Calaveras *Chronicle* became "of age" on the 26th ult., the issue of that date completing the twenty-first year of its existence.

The Sutro Tunnel.

This tunnel, the largest one for the purpose in the world, was the idea of Adolph Sutro, from whom it derives its name. The feasibility and advantages of the project were first suggested by him in the year 1860, in an article which he wrote in one of the dailies of this city, showing clearly the advantages of working mines (especially those on the Comstock ledge in Nevada) by means of a tunnel or adit run low down on the hillside, and then sinking shafts to meet it, thereby insuring drainage and ventilation and convenient and cheap means of running out the ore through the tunnel, instead of the expensive method of sinking shafts, pumping the water from them, and then hoisting the ore by means of expensive machinery. But the principal advantages of the Sutro Tunnel are that its course is through a rich mineral country and that it is located so as to run at right angles to several distinct silver lodes and terminates at the famous Comstock, where it will follow that lode by adits run to the north and south at a depth of 2,000 feet. The tunnel and adits will, therefore, afford the best possible means of prospecting the mineral resources of the country and when ledges are struck they can be worked out with the greatest facility and all the ore brought to the mouth of the tunnel at a trifling expense, where it can be crushed and worked by mills and smelting works erected on the Carson River. This will save an enormous expense in transportation which is one of the greatest financial considerations in a mountainous country.

These few reasons will be evidence enough to mining men that the scheme will most probably be a lucrative one to its promoters as well as advantageous to the owners of mines in the vicinity. Our correspondent, Mr. L. P. McCarty, while he was at Virginia City recently, visited the tunnel and gleaned the facts connected with its history and development which we here present, to accompany the cute shown.

Difficulties in Starting the Work.

In 1864 the Nevada Legislature granted a franchise, giving Mr. Sutro and his associates the right of way for the tunnel, and in 1866 contracts were signed by several of the principal mining companies on the Comstock, granting to the tunnel company a royalty of $2 per ton on all ore extracted from the mines, either by the tunnel or otherwise as soon as the tunnel should reach the Comstock lode. In the same year a law of Congress was approved conforming to the rates in the contracts and granting in addition the right to all veins of ore discovered by means of the tunnel, and a grant of 1,280 acres of land at the mouth of the tunnel for a town site. But after all this was done it was not until Mr. Sutro had made several trips to the Eastern States and Europe that the necessary capital was obtained to start to work, which was in October, 1869. But owing to the limited means of the company, no machinery was made use of or any of the shafts started until December, 1871, when it may be said that the tunnel company fairly commenced operations.

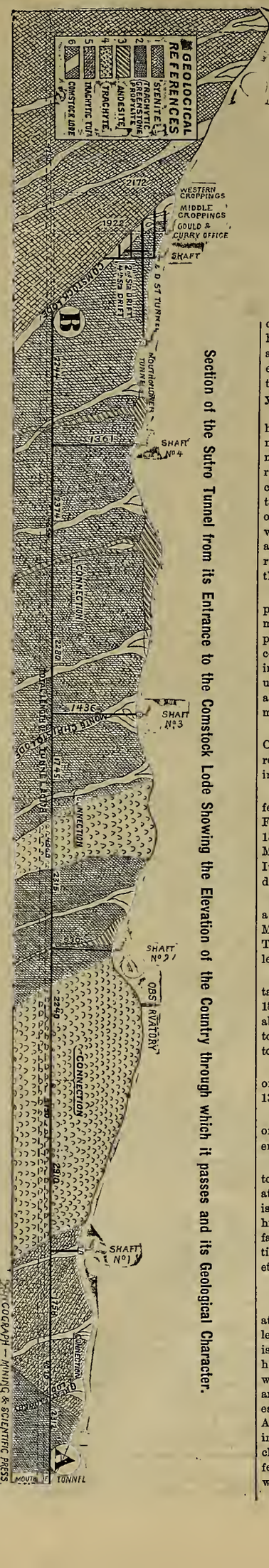
Mode of Construction.

The main tunnel will be about four miles long when it reaches the Comstock Lode. The *modus operandi* of constructing the tunnel is entering the side hill in the Carson Valley, and drifting in a westerly direction towards the Comstock lode at a depth of 2,000 feet below Virginia City, and sinking four shafts on the line of the tunnel at distance of about a mile apart. From these shafts the work of making the tunnel will be carried on in two directions as soon as they are down to the tunnel level. Therefore after each shaft is down, the whole work of making the tunnel will be carried on by making eight different tunnels to connect together, each one of these tunnels being little more than half a mile long, so that a tunnel over four miles long is made by making eight tunnels half a mile long each, and consequently the time required for making four miles of tunnel is absolutely reduced to the time required for running one half a mile long.

The Tunnel, Roads, Shafts, Etc.

The mouth of the tunnel is 4,100 feet above the level of the sea. It has a pitch or fall of two inches to the hundred feet, and there is a descent of 172 feet from the mouth of the tunnel to the river, a distance of 1¼ miles, which affords a fine opportunity for the erection of concentrating works, mills, etc. The tunnel runs north, 65° west, true meridian. Its total length to the Comstock lode will be 20,178 feet. The main tunnel, or header, is in 3,120 feet, and the enlargement, 680 feet, timbered complete. Shaft No. 1 will be 512 feet deep when completed; No. 2, 1,040 feet; No. 3, 1,450 feet; No. 4, 1,498 feet; No. 1 is down 400 feet; No. 2,600 feet; No. 3, 388 feet; and No. 4, 400 feet.

The main tunnel will be 12 by 16 feet, divided into two compartments, each five feet wide at the bottom, 4½ at the top and 7½ high in the clear. A double track narrow-gauge railroad will be laid from the mouth of the tunnel to the Comstock, of best American rolled rails and good convenient cars will be provided to run thereon. Beneath the track for the purpose of draining the mines and furnishing water power to run mills, etc., at the mouth of the tunnel a canal or water way is located. The header of the tunnel is five feet wide by six feet high. Both the header and enlargement are now being run by contract, and it is expected that the main work will be completed to the Comstock lode within two and one-half years.



Section of the Sutro Tunnel from its Entrance to the Comstock Lode Showing the Elevation of the Country through which it passes and its Geological Character.

An excellent wagon road six miles in length has been constructed over the line of the tunnel, connecting with all the shafts, though in many places the route lay over hills, and through ravines that seemed almost inaccessible. The cost of this road was about $60,000. A water tunnel is being constructed between the mouth of the tunnel and shaft No. 1, from which water will be taken to a large reservoir 300 feet above the level of the town, and pipes will be run from the same connecting with all parts of the town.

There are about 300 inhabitants now in the place; two large hotels, a livery stable and meat market are being erected, and several other improvements are under contemplation. The company has erected a large commodious dwelling house, the lower story of which will be used for offices. The cost of this structure was about $35,000, and it would be a credit to any metropolis.

The Progress Made

Can be seen by the following synopsis of a report made by Mr. Sutro, the General Superintendent :

December 30, 1871, the tunnel was in 2,663 feet ; January 26th, 1872, it was in 2,708 feet ; February 23d, 1872, it was in 2,751 feet; March 15th, 1872, it was in 2,792 feet; and at the time Mr. McCarty was there it was in 3,070 feet. It is completed and timbered its full size for a distance of 600 feet.

Shaft No. 1, January 28th, 1872, had attained a depth of 71 feet; February 25th, 105 feet; March 17th, 110 feet, and is now down 360 feet. The depth of this shaft, when at the tunnel level, will be about 500 feet.

Shaft No. 2, on January 28th, 1872, had attained a depth of 103 feet. February 25th, 185 feet; March 17th, 260 feet, and is now about 600 feet deep, which only leaves 400 feet to go before it will be at the tunnel level, ready to drift both ways.

Shaft No. 3, July 14th, had attained a depth of 45 ft.; Feb. 25th do 110 ft.; March 17th do 139 ft.; and in November do 370 ft.

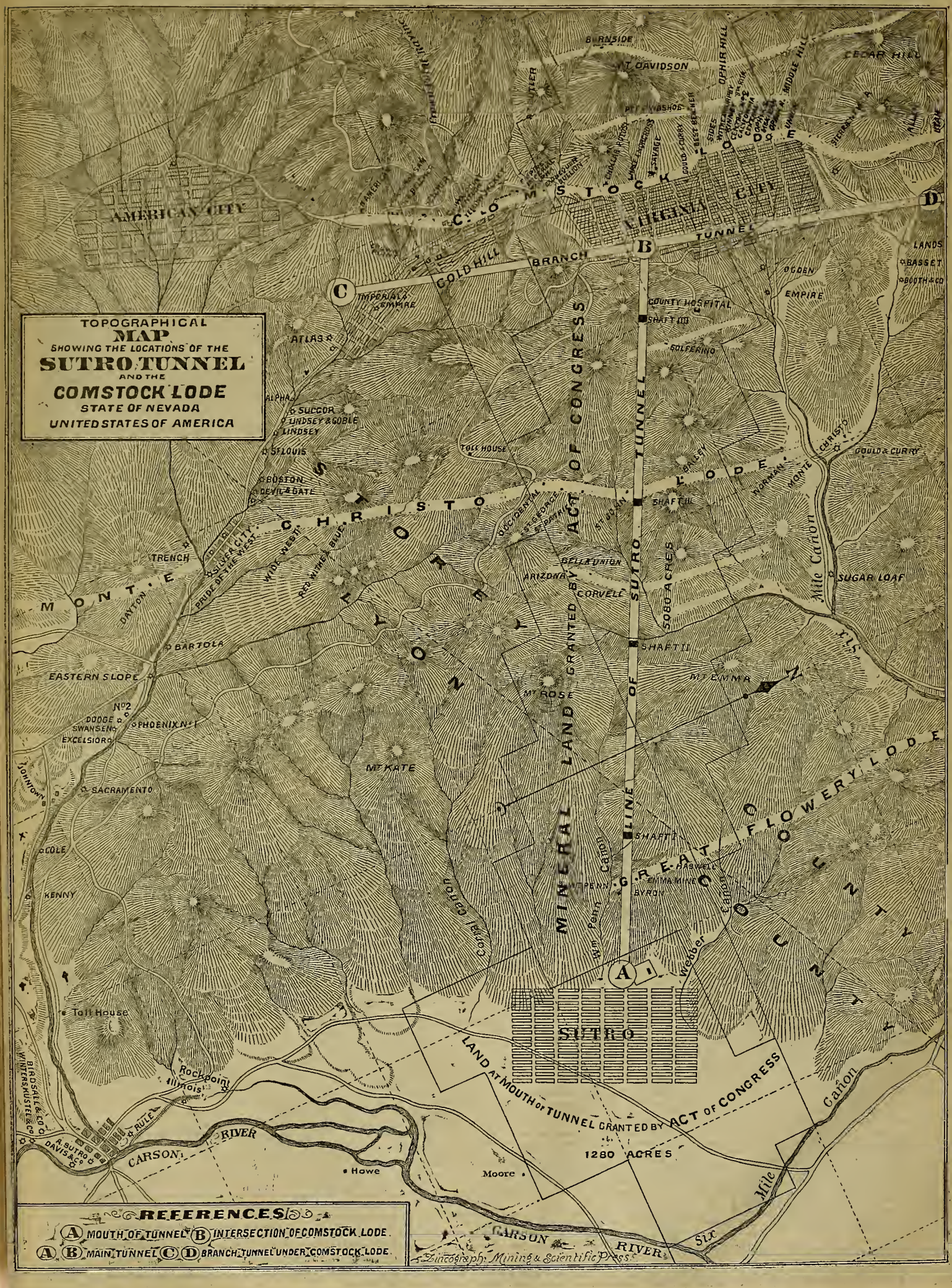
Shaft No. 4, July 14th, had attained a depth of 68 ft.; Feb. 18th do 100 ft.; and at the present is down about 400 ft,

The latter is the deeper shaft and the nearest to Virginia City; it will strike the tunnel line at about 1,400 feet below the surface. There is a tunnel or adit being run through the side hill to strike this shaft 100 ft. below the surface for the purpose of drainage and ventilation while the shaft is in course of construction.

Machinery Used.

Up to the present time the work of hoisting at all the shafts has been carried on by Hoadley Portable Engines, but now new machinery is being put up at each place with suitable hoisting works. The requisite machinery and works when complete will cost about $500,000 and will consist in a large hoisting engine at each shaft, several large steam pumps of Allison & Brannan's make, such as are used in the mines in Pennsylvania, capable of discharging 800 gallons per minute in lifts of 250 feet each. Diamond drills and Burleigh drills will also be brought into requisition. Large

[Continued on page 284.]


TOPOGRAPHICAL
MAP
SHOWING THE LOCATIONS OF THE
SUTRO TUNNEL
AND THE
COMSTOCK LODE
STATE OF NEVADA
UNITED STATES OF AMERICA
AMERICAN CITY
VIRGINIA CITY
COMSTOCK LODE
COLD HILL BRANCH
SUTRO TUNNEL
GOLD HILL
B'RNSIDE
T. DAVIDSON
OPHIR HILL
CEDAR HILL
MIDDLE HILL
IMPERIAL
EMPIRE
COUNTY HOSPITAL
SHAFT III
GOLFERINO
ATLAS
ALPHA
SUCCOR
LINDSEY & GOBLE
LINDSEY
ST LOUIS
BOSTON
DEVIL'S GATE
TOLL HOUSE
OCCIDENTAL
ST. LOUIS
ST. PATRICK
ST. AUGUSTIN
SHAFT III
GALENA
NORMAN
MONTE CRISTO
GOULD & CURRY
OGDEN
LANDS
BASSET
BOOTH & CO
EMPIRE
TRENCH
SILVER CITY
PRIDE OF THE WEST
WIDE WEST
RED METAL & BLUE
DAYTON
BELL & UNION
ARIZONA
CORVELL
5080 ACRES
SUGAR LOAF
Mille Canion
BARTOLA
EASTERN SLOPE
No 2
DODGE
SWANSEN
EXCELSIOR
PHOENIX No 1
Mt ROSE
Mt EMMA
SHAFT II
Mt KATE
SACRAMENTO
JOHNTOWN
COLE
KENNY
SHAFT I
GREAT FLOWERY LODE
HASKELL
EMMA MINE
BYRON
PENN
Gold Run Canon
Webber Canon
Toll House
SUTRO
LAND AT MOUTH OF TUNNEL GRANTED BY ACT OF CONGRESS
1280 ACRES
Rock Point
Illinois
BIRDSALL & CO
WINTERS HUSTED & CO
RULE
A. SUTRO
DAVIS & CO
CARSON RIVER
Howe
Moore
Canon
Mile
Six
CARSON RIVER
REFERENCES
A MOUTH OF TUNNEL B INTERSECTION OF COMSTOCK LODE
A B MAIN TUNNEL C D BRANCH TUNNEL UNDER COMSTOCK LODE
Lithograph Mining & Scientific Press

Miscellaneous.

A Model Manufacturing Village.

B. G. Northrup gives the following interesting particulars concerning the Fairbank's scale works, in a recent letter from St. Johnebury, Vt., to the *Christian Union:*

Here is a great manufactory of scales, by far the largest establishment of the kind in the world, employing about eix hundred men and nearly four hundred in branch departments elsewhere, and manufacturing over 50,000 scalee aunually. They are of all sorts end sizes—over three hundred varieties—from the most delicate etandard of the druggist or banker, to the ponderous hay, railroad car, or canal boat ecales, weighiug 500 tons at a time. They are adapted to the standards of all nations, and marked with the signs of each. This week a large invoice was sent to Japan, and for a long time they have been sold in China, Australia, India, Persia, Turkey, Arabia, (where they have been carried on mules' or camels' backs,) in the Barbary States, Cape Colony, Saudwich Islands, Iele of France, all the South American States, and still more largely in the great commercial natione of the earth. The yearly sales amount to about $2,000,000, and the demand is rapidly increasing. The business was never so prosperous as during the present season.

It has long been a marvel how such a concern could be made a permanent success for nearly fifty years in this remote corner of the State, so far from tide water, and with heavy and expensive freightage.

Now, what is the explanation of this marvelous prosperity? What is the condition of the workmen? These points I came here to investigate. For this purpose I inspected the works (covering ten acres), examined the processes, talked freely with the hands as well as with the owners and with the citizens of St. Johnsbury not connected with the factory. To observe the home life of the operatives, I entered their houses and conversed with their families.

This company maintains the highest reputation for integrity. Many names honored abroad are tarnished at home. Only the strictest honesty and fair dealing can stand the test of daily bnsiness intercourse with hundreds of hands for nearly half a century. "They do everything on the square" was, in substance, the answer of many citizens and workmeu to my inqniries on this point. The company has fairly earned and gained the confidence of their men and of this entire community, and a good name at home naturally follows them everywhere. The workmen say that they are never permited to do any sham work, even for the most distant market. To quote the pithy phrases of the men, "no shoddy here," "no veneering," "no puttying." The "test room" illustrates the thoroughness of their work. To avoid jar of machinery or movement of the air, all the scales are subjected to the nicest tests before being "sealed." The minutest films of metal are used for the more delicate trials. Masses of iron weighing hnndreds of pounds, are placed alternately on different corners of the railroad scale platform, and if the difference in position changes the "record," the scale is condemned. The thoronghness of the work and this severity of the test is the explanatiou of the world-wide reputation of the Fairbanks scales for accuracy.

There is a superior class of workmen in this establishment. All are males. Their work is proof of ekill. Their looks and conversation indicate intelligence. They are mostly Americans, and come from the surrounding towns. More than half of them are married, and settled here as permanent residents, intereeted in the schools and in all that relates to the prosperity of the place. Many of them own their honses, with spacious grounds for yard and garden, and often a barn for the poultry and cow. These houses are pleasing in their exterior, neatly furnished, and many of them are supplied with piano and tapestry carpets. The tenement houses, also, are inviting and comfortable, and surrounded with unusually large grounds. The town is mauaged on temperance principles, and drunkenness, disorder and strite among the hands are almost nuknown.

I examined the pay roll and fouud the wages very liberal. The workmen seem well satisfied on that score. Wherever it ie possible, the work ie paid for by the piece. The work itself is largely doue by machinery, and that *sui generis*, invented here and for the special aud peculiar results here reached. The meu are eucouraged to expedite their processes by new inventione, and they share largely in the benefite of all snch improvements. Paying by the piece has worked well here. This plan stimulates indnstry, promotes skill, and fosters inventivenese. It apportions rewards to the quality and quantity of work done; but more than all, this plan is recognized by the men as juet and satisfactory. With the time left practically to their own choice, there is no eight-hour movemeut here. No labor league or uuion hae ever existed—no etrike ever been euggested. This would be a poor place for the "iuternationals" to preach the gospel of idleness or agrarianism.

There has evideutly been mutual sympathy and interest between employer and employed. Governor Fairbanks, one of the fonndere, used to say to the men: "Yon should always come to me as to a father." He maintained relatione of kindness with them, visiting the sick, helping the needy, counseling the erring, encouraging their thrift, enjoining habite of econoiny. He taught them that it wae their interest and duty to "lay up" something every month, and that the best way to rise in the eocial scale wae to unite economy with increasing wagee. The fact that so many of his workmen are "forehanded," besides owning their homesteads, is due to his teaching and example. The worth and dignity of work, he illuetrated in theory and practice. The notion that labor was menial, or that the tools of trade or farm were badges of servility, he deepised. His sons worked in the shops and thoroughly learned the trade. The brothers of the Governor were in full eympathy with him, and the same spirit characterizes the eons and surviving brother who now manage the concern. There is still the fulleet and happiest conciliation between labor and capital. It is not strange that workmen "hold on." Their permanency is a striking fact. Many have been here from twenty to forty years. I conversed with one man over seventy years of age—a foreman—who has worked here "from the start," forty-three years.

Years ago the men were aided in forming and sustaining a lyceum, and liberal prizes were offered for the best essaye read. Recently, Horace Fairbank has founded a library and opened a large reading room, free to all. The Athenæum containing the library, reading room and also a epacious lecture hall, is an elegant structure, 94x45 feet two stories high. The books, now numbering 8,300, are choice and costly. Having visted nearly every town of Massachusetts and Connecticut, and traveled widely in this conutry, I have nowhere found in a village of thie size an Athenæum so costly, a reading room so inviting, and a library so choice and excellent as this. These various provisions for the improvement, happiness and prosperity of this people, coupled with liberality and fairness in daily intercourse, explain the absence of discontent and the uniform sympathy, good feeling and harmony which prevail. I have nowhere seeu a better practical solution of the labor question.

Mineral Hill Silver Mines of Nevada.

A late number of the London *Mining World*, contains an interesting report upon the history and condition of an Englieh company owuing extensive mines at Mineral Hill, Nevada. Former great productiveness having been most unexpectedly cnt off, after the property had been sold through the old and eminent firm of Messrs. John Taylor & Sons, London, and a general panic having arisen amongst the *debenture-holders*, who had been induced to invest upon authentic reports made by this firm—1st, That the gross yield of silver ore from the mines had for three months averaged $75,000 per month, and that all expenses incident thereto had not exceeded 30 per cent.; 2d, That there was ore "in sight" to the value of $1,000,000 at the least, a committee of inquiry was appointed to make thorough examination as to the "honest, conscientious and bona fide character of these statements which accompanied the prospectue of the company. As these mines are in a etratification similar to that of many mines in Utah, and English companies operatiug there may sometimes encounter fluctuatione like those of the Mineral Hill Company, the following eynopsis will be read with interest:

The history of the enterprise is plainly set forth. Four Nevada men were owners of the mines. They eold the property to a mining company of California, of which Messrs. Ralston and Lent appear as promoters. From this company the mines and a mill, together with profits from February 20, 1871, were purchased for £245,000 by an English company called the "California Mining Company, (limited)." Subsequently this California company limited sold all the property, (comprising about thirty-uine mines, mill, mill-eite and wood ranchee) to another English company—"The Mineral Hill Silver Mines Company (limited)"—for £255,000 in cash, and £240,000 in shares full paid in said company.

The public were not invited to take any shares of the capital stock. This large amount of money was raised by sale of "debenture-bonds," being of the nature of First Mortgage Bonds npon the property of the company. All the ehares appear to have beeu retained by the California company, aud by the gentlemen who negotiated the sale, or who guaranteed the purchase money, if the public did not fully take the debentures.

Mr. John Taylor, Jr., of the distinguished firm referred to, came out to Nevada, personally examiued the mines and reported favorably upon their richuess and "ore in sight." The details of ore reduced by a fifteen-stamp mill, during thirty-five days running time, was shown to be 814¾ tons, yielding at 92 per cent. of assay value, $152,141 88. Debenture bonds were readily taken hy the English public, and in a short time no less than £230,000 sterling, on account of purchase money, was remitted to Mr. Raleton of the Bank of California.

In thie large amonnt of value, little or no working capital or reserve fnnd appeare to have been provided against "a rainy day." Mines eo rich as these were expected to run themselves. When intelligence of the sudden failure of productivenese in the miues reached England, a demand arose amongst the debenture-holdere for the rigid examination referred to, and a petition was circulated for winding up the concern. Mr. Taylor, Jr., visited Nevada, and a full expose of the transactions for sale of the mines and debentures was made.

In their report the committee etate:

"The appearance of the mines wae ench as to induce him (Mr. Taylor, Jr) to become a director of the company, and to iuvest £500 in the debenture bouds when issued, which bonds he still holds. He explained the way in which he made his calculations of the quantity and value of the ore stated by him to be opened to view, and which calculations were those ordinarily used hy mining engineers; he further ehowed that it was owing to the ore ground being most unexpectedly cut off at various points hy beds of unproductive limestone, that his calculations had proved erroneous."

Mr. John Taylor, een., explained his connection with the organization of the company, etating that "euch reliance did he place in his eon'e judgment, and in the accuracy of his report, that he had not the eightest hesitation, when requested to do eo, in becoming a director of the company. He well knew, in doing eo, that many of his old, intimate, and valued connections would make investments in au undertaking that bore hie name, and no better proof can be addnced of the *bona fides* of his opinion of the sonndness of the adventure, than the fact of his having taken, and still holding for himself and his children, £1,600 worth of the debenture bonds, in addition to the £500 taken by his son."

In reply to questions pnt to him by members of the committee, he said "he had in the course of his experience known mines qnite as rich in appearance as the Mineral Hill mines, become much poorer in appearance and much more unprofitable, and then again become largely productive, and ultimately richer than they ever had been. He would uot take upon himself to say whether the use of the diamond drill was the best mode to adopt, but it would certainly show the different characters of the beds of limestone passed through, and how its various changes, if any, would be favorable or otherwise to mineral bearing."

The company strongly recommend that further explorations of the company's property be carried on, advising the directors "to engage the services of Mr. Henry Sewell, (who is now in Utah) a gentleman of great experience in Mexican and Chilian miuing, (in both of which countries, yonr committee are informed, the stratification of silver mines is similar to that of Nevada), to make an inspection of the mines and to recommend where, in his judgment, explorations should be made."

"While yonr committee, in common with their fellow sufferers, deplore the present collapse of the mines, they deem it but common fairuess to state as their unanimous opinion, that they have been nnable to discover an act of any individual deserving of ceusure on any grounds of fraud or misrepresentation."

After suggesting a manner for raising funds to prosecute the work the report concludes,

"Your committee earnestly solicit the aid and co-operation of the debenture-holdere, nrging them not to be disheartened becanse the speculation in which they have made an advance has become nnproductive. Such are the fluctuations of miniug, that the property of which the debenture holders are the mortgagee may, eventnally, prove to be as valuable ae they anticipated, instead of retaining its present impoverished aspect."

Shad-Hatching in 1872.

So far as we know, the only rivers in which shad are hatched are the Connecticut, the Hndson, and the Merrimac, and this is the sixth season of the use of Seth Green's hatching-boxes—a discovery that is likely to do for the food supply of the nation what Whitney's cotton-gin did for its clothing. About 8,000,000, of shad-spawn were hatched in the Hudson last year, and we learn, nnofficially, that the number is considerably exceeded this year. Of the number hatched, 220,000 were put into the river above the Troy dam, 80,000 into Lake Champlain, 20,000 in Lake Owasco, 50,000 in the Genesee River, 30,000 in the Alleghany River at Salamanca, and 25,000 in the Miseiesippi River, two miles below St. Paul. The remainder were turned into the river below Castleton. The operations began May 18th ended Jnly 2d.

The ova hatched in the Conuecticut last year were over sixty millions. This year operations did not begin until the 24th of June, and ended on the 18th of July—less than four weeks. The fish were larger and finer than ever before, and the hatch of spawn was ninety-two million sixty-five thonsand, a third more than was taken last year. The hot weather of the early part of July had snch an effect npon the females, that the average number of ova from each one was greatly increased. Of this number 2,000,000 were sent to the Alleghany, White, and Platte Rivers, a half-million were distributed in Rhode Island waters, a half-million were sent to the Sangatuck, and about the same nnmber to Great Brook, in Groton, Ct. All the rest were turned into the Conuecticnt, jnst below Hadley Falls. This enormous addition to the finny tribes was made at an expense to the State of Connecticnt of about five hundred dollars. If the improvement of only two of our shad streams for five years has resulted in the reduction of the wholesale price of shad in New York to $3.50 per hnndred, what may be expected when all the States turn their attentiou to this business, and Seth Green'e hatching boxes are in use npon every shad stream in the country? Is not cheap food for the coming millione a problem already solved?—*Am. Agriculturist.*

International Exhibition in Philadelphia in 1876.

The following has been placed in our hands for publication:

Office U. S. Centennial Commission.
Philadelphia, Pa., Oct., 1872.

I. N. Hoag, Secretary State Agricultural Society, Sacramento, Cal.: The Anniversary of the Independence of the United States in the year 1876, is to be celebrated by an exhibition of the products, arts and industriee of the country, and of the world. This ie in accordance with an act of Congrese approved March 3d, 1871. By this act the taek of preparing and superintending the exhibition was imposed upon the United States Centennial Commission, coneisting of two members from each of the States and Territories. The Commiesioners have twice met in general session, a permanent organization has been effected, and the chief outlinee of the plan for the exhibition have been agreed upon.

This exhibition ie to be international and nniversal—interuational inasmuch as all nations will be invited to participate in it; and universal, because it will include a representation of all natural and artificial products, all arts, industries and manufactures, and all the varie results of human skill, thonght and imaginaation.

The outlines of a simple yet comprehensive claesification have been adopted. There will be ten departments, each subdivided in ten groups, and these agsin into classes. The details of this classification are now being elaborated and will be published in due season, together with such rules and regulations as may be fouud necessary for the proper conduct and management of the exhibition.

It is intended that ample space shall be assigned to each State, Territory and foreign country for a just and proper display of their products. It is believed that not less than fifty square acres of floor space under roof, will be required for this purpose. A site combining the advantsges of a sufficient extent of level ground, with picturesque and cultivated surroundings, easy of access by rail, water and by ordinary roads, has been assigned for the buildings and grounds at Fairmount Park in the city of Philadelphia. The exhibition will open in April and close in October.

Each State of the Union will be expected to send its peculiar producte, illustrating its resources, both developed and undeveloped. A complete exhibition of this kind by all the States will afford the meaus of comparing their iudustrial condition and capabilities. The producte of mining and agriculture will occupy a large portion of the space allotted to each State, and will receive their just ehare of attention in this universal display.

An undertaking so patriotic in its conception, so vaet in its proportions and so useful in its results, commende itself to the hearty sympathy and support of intelligent people. Patriotism, as well as an appreciation of the industrial-educational and moral influences of well organized exhibitions, should impel all citizens to lend a helping hand. It is the duty of the Commission to prepare the way and open the doors, but the people, in their sovereign right and strength, must make the exhibition. By their aid alone can it be made a just and comprehensive display of the industrial, intellectual and moral development of the nation during the first century of its existence.

The Commission not only relies with confidence upon the aid of the people in general, but it hopes to receive the co-operation of the many State societies and organizations which for eo many years have aided in directing and realizing the popular demand for agricultural and industrial exhibitions. The desire to secure at an early date your efficient co-operation has led to this communication, which is made at the request of the Executive Committee of the Commission.

Permit me to suggest that the facts herein stated might with great advantage to the exhibition be communicated as publicly as possible to your members and exhibitore, and that, if agreeable, they should be incorporated in your printed reports. A committee of your members might be appointed to consider and snggest such meaenres as may appear most desirable to promote the success of the object for which the Centennial Commission is appointed. A general plan for the organization of Co-operative Centennial Associations in the several States and Territories is now under consideration, and when perfected will be published for distribution.

Please acknowledge the reception of this communication. Very respectfully, your obedient servant,

Wm. Phipps Blake,
Executive Commiesioner.

Mining affairs in Clear Creek county are growing into greater importance every week. Reliable information of new and rich discoveries greets our ears almost daily. We are inclined to the belief that prospecting has not reached even the margin of the rich silver deposits of thie remarkable region. The large deposits of remarkable rich ore lately etruck in many of our mines, are almost bewildering. The ore blockade is increasing in such proportions, that the market ie glutted and the mille overstocked with more ore than they can treat. There is a wide and profitable field for capital to invest in the building of silver mille in thia county, at the present time. Who will come to the rescne of our mining industry, and reap a rich harvest of profits?—*Colorado Union.*

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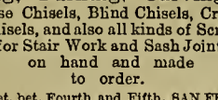
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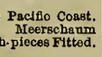
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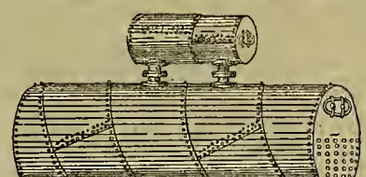
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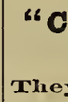
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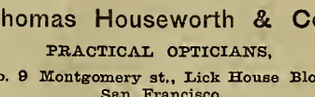
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Wholesale and for export by the Proprietors, Worcester; Crosse & Blackwell, London, &c., &c., and by Grocers and Oilmen universally. 15v24-tf

Agents Wanted for Zell's Encyclopedia.
Z.E. is a Dictionary of Language. It contains every word in the English language with its derivation and definition.
Z.E. is a Biographical Dictionary. It has a sketch of every noted person of all ages, many of them with portraits.
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FRANCIS DEWING & CO.,
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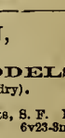
SHEET IRON PIPE.
THE
Risdon Iron and Locomotive Works
Corner Howard and Beale Streets,
Are prepared to make SHEET IRON AND ASPHALTUM PIPE, of any size and for any pressure, and contract to lay the same where wanted, guarantceing a perfect working pipe with the least amount of material.
Standard sizes of railroad Car Wheels, with special patterns for Mining Cars. These small wheels are made of the best Car Wheel Iron, properly chilled, and can be fitted up with the improved axle and box—introduced by this company, and guaranteed to outlast any other wheels made in this State.
☞ All kinds of Machinery made and repaired.
24v22-3m JOSEPH MOORE, Superintendent.

NELSON & DOBLE,
AGENTS FOR
Thomas Firth & Sons' Cast Steel.

MANUFACTURERS OF
Sledges, Hammers, Stone Cutters', Blacksmiths' and Horse-Shoers' Tools.

13 and 15 Fremont street, near Market, San Francisco
10v14or

SAN FRANCISCO
SCREW BOLT WORKS,
PHELPS BROTHERS, Proprietors,
MANUFACTURERS OF ALL KINDS OF
Machine Bolts, Bridgs Bolts, and Ship or Band Bolts.
13 and 15 Drumm Street, San Francisco. 4v24ly

J. M. STOCKMAN,
Manufacturer of
PATTERNS AND MODELS,
(Over W. T. Garratt's Brass Foundry).
N. W. corner Natoma and Fremont streets, S. F. Entrance on Natoma street. 6v23-3m

McAFEE, SPIERS & CO.,
BOILER MAKERS
AND GENERAL MACHINISTS,
Howard st., between Fremont and Beale, San Francisco

[Continued from page 280.]

Root blowers will be used for supplying air to the mine at each shaft.

At the Mouth of the Tunnel

Things present a lively appearance and great improvements are being made. The priucipal buildings of the company here are the office building, the machine shop and the carpenter shop. The Company's office huilding is second to none in this State, and will cost about $50,000 when completed. It is located in a splendid position, commanding a view of the whole Carson Valley and town of Sutro. The machine shop and carpenter shop is over 200 ft. long and 36 ft. wide. The machinery is run hy a fine 50 horse-power engine and the machine shop is furnished at present with 10 lathes, 1 planer, 1 drill press, 1 holt cutter.

Shops and Houses.

Iu the blacksmith shop there are 3 forges in constant operation. Connected with the machine shop is a tin and coppersmith shop fitted out with all the requisite tools for doing all kinds of work.

In the carpenter's shop there is a circular saw, a jig saw and a large wood lathe. More machinery for the machine shop is expected from the East.

A large store house is to be built at the mouth of the tunnel where the necessary supplies for the whole line will he kept on hand, and from it all the material will be forwarded to the different shafts as required.

At the present time there is nearly $40,000 worth of material on hand for the store house at Sutro. A railroad is to be built from the mouth of the tunnel to the Carson River for the purpose of hauling wood to the tunnel. The wood is floated down the river and corded on its banks ready for transportation.

The Town

Is splendidly located on a gentle grade toward the Carson River. The streets are laid out at right angles to one another and are wider than any streets in the United States.

Boarding houses, stores and livery stables are going up and lots are selling at $500 each, and corner lots are held at $1,000, and when a ledge is struck in the tunnel the lots will double in value immediately.

There are over 200 men employed in the precinct of Sutro, and there is every inducement for people to start in business in the new town, which is destined to be one of the largest in Nevada at no distant period, as it is certain now that the tunnel will go through. Consequeutly there will he mills and smelting works and manufactories of all descriptions located at its mouth, making the town a large business center.

The Shafts on the Tunnel Line.

About half a mile from the mouth of the tunnel is the air shaft, which is used for supplying air to the miners in the header, for which purpose there is a hoisting engine that, in addition to hoisting the rock, runs a No. 2 Root hlower.

Shaft No. 1 is about one mile from the mouth of the tunnel. Here there is in course of construction a new hoistiug works and a new Risdon hoisting engine, 14x27 cylinder, heing put up to take the place of the old one. There are two common steam pumps in the shaft and a Hoadley portable engine on top. There are two 54 boilers and one 48 boiler, making in all ahout 150 horse-power.

At shaft No. 2 new hoisting works are going up, and there is a new Booth hoisting engine, 16x27. There will he five large hoilera at this shaft, and several steam pumps will he used in the shaft.

At shaft No. 3 there is a similar building and a Booth engine 18x27, with three cylindrical boilers, and one 100 horse-power Babcock & Wilcox sectional hoilers, and several steam pumps.

At shaft No. 4 the hoisting worka are also being built, and a new Risdon hoisting engine, 20x27 cylinder, in running order. In addition to thia machinery there is a portahle engine, three ateam pumps, three cylindrical hoilera, and one 100 horse-power Root sectional boiler.

Two diamond drilla are now in operation at the mouth of the tunnel, and others will he supplied to the ahaft as fast as they arrive from the East. The Allison & Brannan steam pump and Burleigh drilla will also be used at the different shafts. The steam pumps will be the largeat in use on this side of the Rocky Mouutains; their steam cylinders will he 72x30, and they will discharge 700 to 800 gallons per minute to a vertical hight of 250 feet.

The Officers, Engineers and Foremen,

Are uumerous, as will he seen hy the following; but a large and important company like this, with a capital stock of $12,000,000, divided iuto 1,200,000 shares of $10 each, must necessarily be efficiently and numerously officered. Joseph Aron is President; C. W. Brush, Vice President; P. W. Ames, Secretary; Adolph Sutro, General Superintendent (general office, No. 321 California street, in this city); John Anderson in charge of steam engineering department; G. Haist, Civil Engineer; G. A. Taylor, Master Carpenter; Foreman of Machine Shop at Tunnel Mouth, John Pritchard; Foreman at Mouth of Tunnel, Thomas Ford; Foreman of Shaft No. 1, John Brew; Foreman at Shaft No. 2, John Blewett; Foreman at Shaft No. 3, Wm. Trevathan; Foreman at Shaft No. 4, Joseph Harvey; Chief Engineer at Shaft No. 1, N. Myers; Chief Engineer at Shaft No. 2, T. Street; Chief Eugineer at Shaft No. 3, John Kinney; Chief Engineer at Shaft No. 4, A. J. Keegan.

From the description we have given, and the cuts accompanying this, with that which appeared in our issue of Octoher 19th, the importance of this tunnel will he evident even to the eye of those unacquainted with mining operations. It has attracted the attention of engineers and scientific men all over the world, and its ultimate completion is looked for with auxiety. We would say much more on this important undertaking, hut want of space forhids, and what is given above, in connection with the accompanying cuts, will itself show the magnitude, progress and ultimate benefits of the Sutro Tunnel.

Mechanics' Arts College — Polytechnic Lectures.

It is proposed that under the regulations applying to "Students at Large," or the "Fifth Class," tutorships be authorized under the auspices of the University, in connection with the Mechanic'e Arts College or "Polytechnic Department of the State University"—on euch specialties, scientific and practical, as (*a*) are worthy of heing fostered; (*b*) in which at the same time puhlic instruction is demanded; and (c) in which specialists exist in our midst who have huilt up more or less reputation of a suhstantial character.

That from two to six, or even ten lectures on such suhjects, to he delivered to such classes as the names of such lectnrers or specialists may have the influence to draw, he advertised by and under the auspices of the University. The University can afford, perhaps, to furnish the class lecture rooms and lights, and some of the necessary apparatus and epecimens of duplicates. The lecturer to be paid for his lahors hy some system of moderate fees, such as is provided for under the regulations of the 5th class, (and as may induce students at large to "suhscrihe" for three to eight courses or topics, at so much per topic, amounting in the aggregate to considerable). Considerations of reputation, or of interest in their own specialty, on the part of the lecturers, will secure, on the ahove moderate terms, some of the best qualified men in this State.

In this manner it is believed that tutorships or lectureships conld he successfully and very creditably established, on most of the following branches of knowledge, calculated to enlarge the individual's capacities:

Sciences.

A. In the Organic World.

I. Geology. — 1. Geological Formations of the State and Coast; 2. Geological Reconaissance; Methods of making accurately rough surveys and of Recording Observations on Prospecting Trips and the like, through regiona unexplored or undeveloped as to reaources; to be put in the form of maps and reports, by means of which the commnnity at large may benefit hy such special knowledge, and the region as well; 3. Coals and Coal Formationa of the Coast; 4. Gold, Distribution, Ores, Deposits and Mining; 5. Silver; 6. Fossils; Determination of; Localities of.

II. Mineralogy.—1. Determination of Minerala and Ores hy rongh methoda available in the field or while traveling: Hardnesa, Streak, Crystallization and Special Character, etc., with Drawera of Minerals; 2. Testing and Analysis of Mineral Suhstancea with the Blowpipe, qualitative and quantitative; 3. Assaying; 4. Earths (useful), Soils and their adaptations, with specimens.

III. Chemistry.—1. The simple arts of Qualitative Chemistry,

B. In the Vegetable World.

I. Botany. — Determination of Treea and Grasses, etc.; Distribution of Foreata, Woods, economical.

II. — Agriculture. — 1. See Earths, under Mineralogy; 2. Grasses for Grazing, Distribution of (See B. 1.); 3. Horticulture, or Tree Planting and its Profits; 4. Irrigation (under Civil Engineering); 5. Agricultural Engiueering—Steam Cultivation, etc.; 6. Insect Foes of Agriculture.

C. In the Animal World.

1. Zoology.—1. Determination of Classes and Species; Stuffing, etc.

II. Economically Considered.—1. Game and Fish; Geography, Resorts, Numhers, Habits; 2. Domestic Animals, etc., and Products.

D. Physical Geography, ("Earth and Man;") 1. Relief of Continent, Scenic, Recent and Surface Geology; 2. Meteorology, Climates, Rains, etc.; 3. See Reconnaissance and Mapping under Geology and Civil Engineering.

E. Microscopy.

The Professions:

I. Engineering, Civil.—1. Railroad Surveying and Building, railroads in general; 2. Reclamation; 3. Irigation; 4. Topographical Representation and Mapping.

II. Engineering, Mining.—1. See under Minerology and Mapping, under Geology and Civil Eugineering; 2. Methods Practiced in Placer and Hydraulic Mining; 3. Milling of Ores by Amalgamation in Pans, etc; 4. Smeltiug of Ores; 5. Roasting of Ores; 6. Stamp Mills and Concentration, their cost and Adaptation; 7. On Examining and Reporting upon Mines and Properties. See Re-Reconnoissance 8. See Geology of Gold, Silver and Coal, under Geology.

III. Learned Professions.—1. Law; (Justice) 2. Medicine and Hygiene, [Man]; 3. Theology, (God.)

IV. Literature and Literary Arts.—1. Newspaper and Book Making; 2. Shorthand.

The Arts:

I. Liberal Arts.—1. Drawing and Painting, 2. Photography; 3. Music.

II. Mechanic Arts.—1. The Trades: how to proceed to learn each; Studies and Facilities for; 2. Manufacturing Industries.

Society and the General Public Welfare.

I. Commerce.—1. Stocks and Financial Arts, and Figuring; 2. Bueiness and Executiveness, Methods of.

II. Politics and Public Affairs.—Government (or "Ring" Science?): Influence to Control, etc; 2. Public Works.

III. Political Economy.

New Incorporations.

Occident G. and S. M. Co.—Oct. 24. Location: Kern District, White Pine county, Nevada. Capital, $800,000 in 30,000 shares. Trustees—H. Allen Mayhew, John J. Marks, Geo. W. Stewart, Cbas. H. Brickwedel and Freeman Trask.

Table Bluff G. M. Co.—Oct. 25. Location: Humboldt county, State of California. Capital, $500,000. Trustees—Charles E. Hascltine, J. Jewett and William J. Woodley.

Rye Patch M. and M. Co.—Oct. 25. Location: Humboldt county, State of Nevada. Capital, $2,000,000. Trustees:—J. D. Fry, Geo. D. Roberts, John F. Boyd, John W. Gashwiler and A. N. Towne.

Tyler G. M. Co.—Oct. 26. Location: El Dorado county, Cal. Capital, $100,000, in 1 000 shares. Trustees—Tyler Curtis, Tbomas Nelson, Robert Ewing, Frank Mahan, William Corcoran, John Parnell and Edward Menan.

Marks & Darrow M. Co. — Location: Tuolumne county. Capital stock, $3,000,000. Trustees—Bernhard Marks, George A. Darrow, George H. Darrow, Wm. Darrow, Seigas Solomons, Frederick MacCrellish, W. L. Ustick, A. Noel and Daniel McLeod.

Heath Manufacturing Co.—Oct. 30. Objects: To buy and sell patents or interests therein; to maoufacture and dispose of patented articles; to deal in lahor-saving machinery; to buy, lease, improve and hold any kind of estate; to originate, improve, invent, caveat patents and dispose of whatever may be discovered by the Company; to borrow and loan money and all that may he lawful to make it a successful manufacturing company. Capital stock, $100,000, in shsres of $100 each. Trustees—Elander Heath, Henry F. Williams and A. M. Winn.

Yellow Pine Copper and Galena M. Co.—Oct. 30. Location: Yellow Pine District, Lincoln county, Nevada. Capital stock, $5,000,000, in 50,000 shares. Trustees—O. H. Frank, Thomas B. Moore, Joseph F. Atwell, John W. Bucklin and W. O. Wilcox.

A Revolution in Gas.—The new portable safety gas light is the neatest thing we have seen, and is calculated to cause an entire revolution in the present system of lighting for domestic purposes. It generates its own gas which is consumed as soon as generated, thus rendering explosions impossihle. It is certainly a desideratum long called for, and will he gladly welcomed hy those who have lived in daily and hourly dread of injury from explosion of the various dangeroua inflammahle oils now in use.

Mining Sale.—We learn from the Calaveras *Chronicle* that the well-known Gwin mine, in Lower Rich Gulch, in that county, has heen sold to English capitalists for the round sum of $1,000,000. The *Chronicle* citea thia aa an example of what well directed energy and peraeverance hae wrought, and thinka the great development and anccessful working of the Gwin mine muat certainly exert a wholesome influence on the quartz interesta of the county by atimulating and encouraging operations in the future.

Mining Accidents.—Thomas Drumm, a miner in the Kentuck mine, Washoe, was killed on the 22d ult. hy falling down the shaft.

Thomas Hill was caved upon by a hank and killed in the Fox and Elliott claim on Brown's Flat, Tonlumne county, on the 19th ult.

Robert Hutt was killed on the Yolo mine, Ely District, on the 21st hy following down the shaft.

Willam Rogers was so badly hurt in the Empire mine, Grass Valley, on the 24th ult. hy a rock falling upon him, that he is not expected to recover.

Patents & Inventions.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[From Official Reports to Dewey & Co., U. S. and Foreign Patent Agents, and Publishers of the Mining and Scientific Press.]

For Week Ending October 1st, 1872.*

Steam-Condenser.—Washington R. Pitts and George K. Gluyas, S. F., Cal.

Friction-Clutch.—Timothy Stebins, S. F., Cal.

Rotary Pump.—Samuel A. West, S. F., Cal., and Louis Goodwin, Virginia City, Nevada.

Car-Coupling.—James Pearson, Sacramento, Cal.

Tuyere-Tester.—Robert A. Fisher, Eureka, Cal.

Slag-Spout for Smelting-Furnaces.—Rohert A. Fisher, Eureka, Nev.

Slag-Pot for Use in Smelting-Furnaces.—Robert A. Fisher, Eureka, Nevada.

Roasting Ores.—Guido Kustel, S. F., Cal., and Friend W. Smith, Ellsworth, Nevada.

Journal-Box. — Jonathan S. McClure, Gold Hill, Nev.

Billiard-Cushion. — John George Hermanu Meyer, S. F., Cal.

Apparatus for the Manufacture of Cube Sugar.—August F. W. Partz, Oaklaud, Cal.

Manufacture of Cube Sugar.—August F. W. Partz, Oakland, Cal.

Manufacture of Harn Sugar.—August F. W. Partz, Oakland, Cal.

Invalid Benstead.—Benjamin Pollard, Dutch Flat, Cal.

Cultivator.—Andrew T. Sherwood, Amador, Cal.

Apparatus for Enameling Photographic Pictures.—Nathaniel Weston, S. F., Cal., Patent No. 72, 138, dated December 10, 1867.

———*The patents are not ready for delivery hy tbs Patent Office until some days afterward.

Note.—Copies of U. S. and Foreign Patents furnisbed by Dewey & Co., in the sbortest time possible (by telegraph or otherwise) at the lowest rates. All patent husiness for Pacific coast inventors transacted witb greater security and in mucb less time than by any other agency.

San Francisco Metal Market.

Prices for Invoices.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

Thursday, Oct. 31, 1872.

Iron.—			
Scotch Pig Iron, ₱ ton	$60 00	@	62 50
White Pig, ₱ ton	65 00	@	70 00
Refined Bar, bad asecrtment, ₱ lb	— 04½@	—	5
Refined Bar, good asecrtment, ₱ lb	— 05	@ —	5½
Boiler, No. 1 to 4	— 05½@	—	06
Plate, No. 5 to 9	— 06½@	—	07
Sheet, No. 10 to 13	— 07½@	—	00
Sheet, No. 14 to 20	— 07½@	—	—
Sheet, No. 24 to 27	— 08	@ —	—
Horse Shoes	8 00	@	
Nail Rod	10		
Norway Iron	8		
Rolled Iron	5		
Other Irone for Blackemithe, Miners, etc.	5½@		6½
Copper.—			
Sheathing, ₱ lb	— —	@ —	45
Sheathing, Yellow	— 28	@ —	30
Sheathing, Old Yellow	— —	@ —	13
Composition Naile	— 28		30
Composition Bolts	— 28		— 34
Tin Plates.—			
Platee, Charcoal, IX ₱ box	18 00	@ —	—
Platee, I C Charcoal	14 00		— —
Roofing Plates	18 50		— —
Banca Tin, Slabs, ₱ lb	— 50		— —
Steel.—Englieh Cast, ₱ lb	— 19		— —
Drill	19		— —
Flat Bar	19		— —
Plough Points	3 75		4 00
Russia (for mould boards)	12½		15
Quicksilver.—₱ lb	— 85		— 87½
Lead.—Pig, ₱ lb	— 5¾		— 6
Sheet	— 10		— —
Pipe	— 9		— 10
Bar	— 6½		— 7
Zinc.—Sheets, ₱ lb	— 11		— 11½
Borax.—Refined	— 28		— 30
Borax, crude	— 5		— —

Leather Market Report.

San Francisco, Thursday, Oct. 31, 1872.

City Tanned Leather, ₱ lb			26@29
Santa Cruz Leather, ₱ lb			26@29
Country Leather, ₱ lb			25@28
Stockton Leather, ₱ lb			26@29
French ekins continue firm. All California ekins are scarce and bring full prices.			
Jodot, 3 Kil., per doz	$60 00@		
Jodot, 11 to 19 Kil., per doz	66 00@	85	00
Jodot, second choice, 11 to 15 Kil. ₱ doz	56 00@	75	00
Lemoine, 16 to 18 Kil., ₱ doz	75 00@	77	50
Levin, 12 and 13 Kil., per doz	68 00@	70	00
Cornellian, 16 to 19 Kil., per doz	63 00@	65	00
Cornellian, 12 to 14 Kil., per doz	56 00@	60	00
Ogerau Calf, ₱ doz	54 00@		
Simon, 18 Kil., ₱ doz	60 00		
Simon, 20 Kil. ₱ doz	65 00		
Simon, 24 Kil. ₱ doz	72 00		
Robert Calf, 7 and 8 Kil	35 00@	40	00
French Kips, ₱ lb	1 10@	1	30
California Kip, ₱ doz	55 00 to	70	00
French Sheep, all colors, ₱ doz	8 00@	15	00
Eastern Calf for Backs, ₱ lb	1 15@	1	25
Sheep Roans for Topping, all colors, ₱ doz	9 00@	13	00
Sheep Roans for Linings, ₱ doz	8 50@	10	50
California Rnsett Sheep Linings	1 75@	5	50
Beet Jodot Calf Boot Legs, ₱ pair	5 25		
Good French Calf Boot Legs, ₱ pair	4 50@	5	00
French Calf Boot Legs, ₱ pair	4 00		
Harness Leather, ₱ lb	30@	37½	
Fair Bridle Leather, ₱ doz	48 00@	72	00
Skirting Leather, ₱ lb	34@	37½	
Welt Leather, ₱ doz	30 00@	50	00
Buff Leather, ₱ foot	18@	21	
Wax Side Leather, ₱ foot	20@	22	
Eastern Wax Leather	26		

Office of the Chicago Silver Smelting and Refining Company.

Chicago, July 16, 1872.

L. P. Dodge, Esq.—Dear Sir:—Yours of 13th inst. at hand and contents noted. The 24-inch Whelpley & Storer Pulverizer, you set up at our Works, is running to our entire satisfactlon, and realizes fully all you claimed for it. We are pulverizing Colorado Ores, reducing them to a powder, at the rate of about 2,000 lbs. per hour, requiring about 12 horse power. Machine is simple, easily operated and hut very slight expense for wearing parts. We cordially commend them to parties interested in mining machinery.

J. E. M'Neill, Secretary.
J. W. Bell, Superintendent.

N. B.—See illustrated adv. in another column.

Continental Life Insurance Co., No. 302 Montgomery street, corner of Pine.

Mining and Other Companies.

Owing to the time necessary to mail the present large edition of the M. & S. Press we are obliged to go to press on Thursday evening—which is the very latest hour we can receive advertisements.

Altona Gravel Mining Company—Location

of works, Grass Valley, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 3d day of October, 1872, an assessment of ten cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary, at No. 23 Merchants' Exchange, San Francisco, California.

Any stock upon which said assessment shall remain unpaid on the 26 day of November, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 25th day of November, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

DAVID WILDER, Secretary.

Office—23 Merchants' Exchange, San Francisco, Cal.

oct5-3t

Amazon Silver Mining Company—Location

of works, Ely District, Lincoln County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the Twenty-second day of October, 1872, an assessment of ten cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary pro tem., at his office, No. 609 Sacramento street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the second day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the Twenty-third day of December, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

M. J. McMANUS, Secretary *pro tem.*

Office, 609 Sacramento street, San Francisco, Cal. no2

Excelsior Silver Mining Company—Location

of works, Yellow Pine District, Lincoln County, Nevada.

At a meeting of the Trustees of the above named company, held October 28th, 1872, at the office, No. 640 Washington street, San Francisco, it was, on motion, ordered that the following resolution, which was unanimously passed at a meeting of the Stockholders, held October 25th, 1872, be advertised for one month in the Mining and Scientific Press, and a personal notice served on each member:

Resolved—That we, the Stockholders representing in our individual names 4,480 shares of the Excelsior Silver Mining Company, do hereby mutually agree to return our individual certificate or certificates of stock now held by us and standing in our names, agreeing that upon a pro rata division of the entire stock between the stockholder, that we will individually pay a monthly assessment of ten dollars ($10) per month for one year, unless sooner rescinded by the Trustees of said mine.

Also, that said monthly assessment shall be paid on or before the tenth day of each month, commencing November 10th, 1872. By order of Trustees.

no2-1m W. A. KOLLMYER, Secretary.

Indus Gold and Silver Mining Company—

Location of works, Virginia City, Storey County, Nevada.

Notice is hereby given that at a meeting of the Board of Trustees of said Company, held on the 19th day of October, 1872, an assessment of fifty cents per share was levied upon the capital stock of said company, payable immediately, in gold coin of the United States, to the Secretary, at No. 24 Merchants' Exchange, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 25th day of November, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 16th day of December, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

DAVID WILDER, Secretary.

Office, 24 Merchants' Exchange, California street, San Francisco, Cal oc26-4t

Kincaid Flat Mining Company—Location

of works, Tuolumne County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said company, held on the 18th day of October, 1872, an assessment of three dollars per share was levied upon the capital stock of said company, payable immediately, in United States gold coin, to the Secretary, at his office, No. 220 Clay street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the 21st day of November, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the tenth day of December, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. H. CORNELL, Secretary.

Office—No. 220 Clay street, San Francisco, Cal. oct9-4t

Louise Mining Company---Location of

Works, Ely Mining District, Pioche, Lincoln County, Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment, No. 3, levied on the 14th day of September, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Allen, C R, Trustee	336	50	$25 00
Allen, O R, Trustee	357	50	25 00
Allen, O R, Trustee	370	50	25 00
Baur, Otto	164	50	25 00
Baur, Otto	165	50	25 00
Baur, Otto	166	40	20 00
Baur, Otto	167	40	20 00
Burke, John	211	50	25 00
Burke, John	214	50	25 00
Burke, John	216	50	25 00
Burke, John	217	100	50 00
Burke, John	218	200	100 00
Burke, John	224	100	50 00
Baker, Henry, Trustee	275	5	2 50
Buttler, Jessie H	498	100	50 00
Coburn, S A	86	100	50 00
Coburn, S A	87	100	50 00
Coburn, S A	90	100	50 00
Coburn, S A	95	100	50 00
Coburn, S A	321	150	75 00
Chase, A K, Trustee	110	25	12 50
Chase, A K, Trustee	113	50	25 00
Chase, A K, Trustee	120	50	25 00
Chase, A K, Trustee	361	36	18 00
Cook, Chas. W, Trustee	249	200	100 00
Cook, Chas. W, Trustee	251	100	50 00
Cook, Chas. W, Trustee	252	200	100 00
Cook, Chas. W, Trustee	253	200	100 00
Cook, Chas. W, Trustee	254	100	50 00
Cook, Chas, W, Trustee	255	50	25 00
Cook, Chas. W, Trustee	256	100	50 00
Cook, Chas. W, Trustee	257	100	50 00
Cook, Chas. W, Trustee	258	200	100 00
Childs, Geo. E	174	100	50 00
Cavallier, J P, Trustee	399	500	250 00
Cavallier, J P, Trustee	400	200	100 00
Cavallier, J P, Trustee	401	300	150 00
Cavallier, J P, Trustee	441	50	25 00
Clark, L N	404	100	50 00
Cook and Page, Trustees	487	200	100 00
Dore, B, Trustee	139	100	50 00
Duval, W S, Trustee	391	50	25 00
Dixon, S, Trustee	397	50	25 00
Fawcett, S, Trustee	499	50	25 00
Gibbons, Henry, Jr	193	100	50 00
Gibbons, Henry, Jr	196	100	50 00
Gibbons, Henry, Jr	197	100	50 00
Geleich, V	156	50	25 00
Geleich, V	157	50	25 00
Geleich, V	158	50	25 00
Geleich, V	159	50	25 00
Grattan, O M	227	50	25 00
Grattan, C M	228	100	50 00
Grattan, O M	229	100	50 00
Golding, J	504		2 50
Golding, J	505		2 50
Golding, J	508		2 00
Golding, J	507	5	2 50
Golly, Leon, Trustee	430	100	50 00
Golly, Leon, Trustee	431	100	50 00
Golly, Leon, Trustee	433	300	150 00
Hatch, A D, Trustee	317	70	35 00
Herringhl, B	299	50	25 00
Hayward, Mary J	376	25	12 50
Hayward, Mary J	377	25	12 50
Hayward, Mary J	378	25	12 50
Hayward, Mary J	379	25	12 50
Hayward, Mary J	380	25	12 50
Hayward, Mary J	381	25	12 50
Hayward, Mary J	382	25	12 50
Haywood, Mary J	383	25	12 50
Hayward, Mary J	384	25	12 50
Hayward, Mary J	385	25	12 50
Hayward, Mary J	386	25	12 50
Hayes, Thos R	387	25	12 50
Hawkins, James, Trustee	394	50	25 00
Hussey, J L, Trustee	435	100	50 00
Hussey, J L, Trustee	449	200	100 00
Hussey, J L, Trustee	450	100	50 00
Herzberg, J, Trustee	457	100	50 00
Herzberg, J, Trustee	539	50	25 00
Hubbard, A O	520	1	50
Hewett, Georgiana Mrs	390	10	5 00
Ingerson, A W	244	50	25 00
Ingerson, A W	248	100	50 00
Ingerson, A W	508	36	18 00
Kenney, O A, Trustee	345	50	25 00
Lee, D	201	20	10 00
Lissak, L S, Trustee	336	100	50 00
Lissak, L S, Trustee	375	50	25 00
Lincoln and Howard, Trs	347	100	50 00
Lacour, L, Trustee	436	100	50 00
Lazare, L J, Trustee	524	50	25 00
Mages, John E	207	100	50 00
Maurice, W R, Trustee	388	50	25 00
Maurice, W R, Trustee	389	50	25 00
McGregor, Jos	497	100	50 00
Morganstine, S	519	15	7 50
Radlop, L	202	20	10 00
Raymond, S A	125	100	50 00
Raymond, S A	128	100	50 00
Raymond, S A	129	100	50 00
Raymond, S A	131	100	50 00
Raymond, S A	132	100	50 00
Raymond, S A	133	100	50 00
Raymond, S A	134	100	50 00
Raymond, S A	140	100	50 00
Raymond, S A	509	76	38 00
Richardson, E A, Trustee	302	50	25 00
Richardson, E A, Trustee	323	50	25 00
Richardson, E A, Trustee	324	50	25 00
Richardson, E A, Trustee	328	100	50 00
Richardson, E A, Trustee	350	150	75 00
Richardson, E A, Trustee	365	200	100 00
Richardson, E A, Trustee	405	100	50 00
Richardson, E A, Trustee	408	100	50 00
Richardson, E A, Trustee	410	50	25 00
Richardson, E A, Trustee	461	300	150 00
Richardson, E A, Trustee	463	100	50 00
Richardson, E A, Trustee	467	30	15 00
Richardson, E A, Trustee	470	100	50 00
Richardson, E A, Trustee	494	10	5 00
Richardson, E A, Trustee	496	200	100 00
Richardson, E A, Trustee	518	100	50 00
Richardson, E A, Trustee	525	200	100 00
Richardson, E A, Trustee	526	100	50 00
Richardson, E A, Trustee	529	100	50 00
Richardson, E A, Trustee	531	100	50 00
Richardson, E A, Trustee	533	200	100 00
Richardson, E A, Trustee	535	50	25 00
Richardson, W J	141	100	50 00
Richardson, W J	142	10	5 00
Richardson, W J	143	10	5 00
Richardson, W J	144	10	5 00
Richardson, W J	145	10	5 00
Richardson, W J	145	10	5 00
Rose, L S, Trustee	474	100	50 00
Sleeper, Geo, Trustee	341	100	50 00
Sanborn, T C, Trustee	438	50	25 00
Sanborn, T C, Trustee	450	100	50 00
Sanborn, T C, Trustee	453	50	25 00
Sanborn, T C, Trustee	475	100	50 00
Sanborn, T C, Trustee	479	100	50 00
Sanborn, T C, Trustee	482	100	50 00
Sanborn, T C, Trustee	486	50	25 00
Sanborn, T C, Trustee	545	100	50 00
Sherwood, B F & Co, Trustee	513	100	50 00
Sherwood, B F & Co, Trustee	515	100	50 00
Sherwood, B F & Co, Trustee	516	100	50 00
Sherwood, B F & Co, Trustee	517	100	50 00
Winter, T P	511	5	2 50
Watson, W H, Trustee	343	50	25 00
Watson, W H, Trustee	344	150	75 00
Watson, W H, Trustee	412	100	50 00
Watson, W H, Trustee	414	100	50 00
Watson, W H, Trustee	417	100	50 00
Watson, W H, Trustee	418	100	50 00
Watson, W H, Trustee	419	100	50 00
Watson, W H, Trustee	420	100	50 00
Watson, W H, Trustee	423	100	50 00
Watson, W H, Trustee	425	200	100 00
Watson, W H, Trustee	427	200	100 00
Watson, W E, Trustee	489	50	25 00
Wilson, Wm M	304	50	25 00
Wilson, Wm M	307	100	50 00
Wilson, Wm M	308	100	50 00
Wilson, Wm M	313	25	12 50
Wilson, Wm M	314	25	12 50
Wilson, Wm M	315	25	12 50
Wilson, Wm M	316	25	12 50
Wessling, Wm, Trustee	486	100	50 00
White, U, Trustee	492	30	15 00

And in accordance with law, and an order of the Board of Trustees, made on the fourteenth day of September, A. n. 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, room 5 and 6, No. 302 Montgomery street, San Francisco, California, on Saturday, the ninth day of November, A. D. 1872, at the hour of two o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

WM. H. WATSON, Secrtsry.

Office, Room 5 and 6, No. 302 Montgomery street, San Francisco, California. oc26-3w

Noonday Silver Mining Company---Location

of works, White Pine District, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 11th day of October, 1872, an assessment (No. 12) of twenty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 26 Hayward's Building, California street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 15th day of November, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the 4th day of December, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

CHAS. M. FISH, Secretary.

Office—Room No. 26, Hayward's Building, No. 419 California street, San Francisco, California. oc19

Ohio Consolidated Gold Mining Company

—Location of works, West Point, Calaveras County, Cal.

Notice.—There are delinquent upon the following describ d stock, on account of assessment levied on the 24th day of September, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Geo O Ecker	13	100	$10 00
Geo O Ecker	14	100	10 00
Geo O Ecker	15	100	10 00
Geo O Ecker	17	100	10 00
Geo O Ecker	71	50	5 00
Geo O Ecker	184	500	50 00
I K Carlton	12	500	50 00
D E Spencer	23	100	10 00
D E Spencer	24	100	10 00
D E Spencer	25	100	10 00
D E Spencer	26	100	10 00
D E Spencer	27	100	10 00
D E Spencer	28	50	5 00
D E Spencer	29	50	5 00
D E Spencer	30	50	5 00
D E Spencer	31	50	5 00
D E Spencer	32	50	5 00
D E Spencer	33	50	5 00
D E Spencer	34	50	5 00
D E Spencer	35	50	5 00
D E Spencer	36	50	5 00
D E Spencer	37	50	5 00
Joseph Fulton	210	550	55 00
E A Richardson, Trustee	50	490	49 00
E A Richardson, Trustee	68	100	10 00
E A Richardson, Trustee	70	100	10 00
E A Richardson, Trustee	62	500	50 00
E A Richardson, Trustee	64	500	50 00
E A Richardson, Trustee	65	500	50 00
Chas E Fairbanks	52	500	50 00
Chas E Fairbanks	53	400	40 00
Chas E Fairbanks	54	300	30 00
Chas E Fairbanks	55	200	20 00
Chas E Fairbanks	56	200	20 00
Emma Hinck	57	100	10 00
Emma Hinck	58	100	10 00
Emma Hinck	59	100	10 00
Emma Hinck	60	100	10 00
Emma Hinck	61	100	10 00
Wm T Reynolds	234	250	25 00
W A Knapp, Trustee	76	50	5 00
W A Knapp, Trustee	77	50	5 00
W A Knapp, Trustee	80	100	10 00
W A Knapp, Trustee, unlisued		850	85 00
A M Daley	82	50	5 00
A M Daley	83	50	5 00
Y Raphsel	87	50	5 00
Y Raphesl	215	25	2 50
Y Raphsel	216	25	2 50
Geo H Willsrd	88	100	10 00
D M Hosmer	89	500	50 00
D M Hosmer	168	100	10 00
D M Hosmer	169	100	10 00
D M Hosmer	170	100	10 00
D M Hosmer	171	100	10 00
D M Hosmer	172	100	10 00
A H Hubbard	94	100	10 00
P Macdonald	98	50	5 00
D Macdonald	99	50	5 00
D Macdonald	100	50	5 00
D Macdonald	104	50	5 00
D Macdonald	108	100	10 00
D Macdonald	109	100	10 00
D MacDonald	110	100	10 00
D Macdonald	111	100	10 00
D Macdonald	113	100	10 00
D Macdonald	114	100	10 00
D Macdonald	118	25	2 50
D Macdonald	119	25	2 50
D Macdonald	121	25	2 50
D Macdonald	122	25	2 50
D Macdonald	123	25	2 50
D Macdonald	124	25	2 50
D Macdonald	125	25	2 50
D Macdonald	126	25	2 50
J M Thompson	143	25	2 50
A Bateman, unissued		10	1 00
R P Franklin	186	50	5 00
R P Ranklin	187	50	5 00
Jno F Taylor	188	200	20 00
J M Thompson	143	100	10 00
A Bateman, unissued		10	1 00
R P Franklin	186	50	5 00
R P Franklin	187	50	5 00
Jno F Taylor	188	200	20 00
B Dors	8	100	10 00
B Dors	161	50	5 00
B Dors	162	100	10 00
B Dors	189	100	10 00
B Dors	190	100	10 00
B Dors	191	100	10 00
B Dors	192	50	5 00
B Dore	193	50	5 00
Geo W Stewart	205	1500	150 00
Jno H Wood, Trustee	208	100	10 00
Jno H Wood, Trustee	211	100	10 00
Jno H Wood, Trustee	212	100	10 00
Jno H Wood, Trustee	213	100	10 00
Jno H Wood, Trustee	225	100	10 00
Jno H Wood, Trustee	227	300	30 00
Jno H Wood, Trustee	231	100	10 00
Jno H Wood, Trustee	232	200	20 00
W F Leon	228	500	50 00
W F Leon	229	250	25 00
W F Leon	230	250	25 00
Jas F Ward	217	500	50 00
Jas F Ward	218	100	10 00
Jas F Ward	219	100	10 00
Jas F Ward	220	100	10 00
Jas F Ward	221	50	5 00
Jas F Ward	222	50	5 00
Jas F Ward	223	50	5 00
Jas F Ward	224	50	5 00
H P Osgood	233	250	25 00

And in accordance with law, and an order of the Board of Trustees, made on the 24th day of September, 1872, so many shares of each parcel of said Stock as may be necessary, will be sold at public auction, at the office of the Company, room No. 1, 432 Montgomery street, San Francisco, Cal., on Saturday, the 23d day of November, 1872, at the hour of 1 o'clock P. M. of said day, to pay said delinquent Assessment thereon, together with costs of advertising and expenses of sale.

W. A KNAPP, Secretary.

Office, 432 Montgomery street, over Donohue & Kelly's Bank. no2-3t.

Pocahontas Gold Mining Company—Location

of works, Mud Springs, El Dorado County, Cal.

Notice.—There are delinquent upon the following described stock, on account of assessment (No. 5) levied on the 17th day of September, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Mott, E B, Jr	37	200	100 00
Mott, E B, Jr	38	100	50 00
Mott, E B, Jr	39	50	25 00
Mott, E B, Jr	40	50	25 00
Mott, E B, Jr	56	28	14 00

And in accordance with law, and an order of the Board of Trustees, made on the 17th day of September, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the company, room No. 4, No. 401 California street, San Francisco, California, on Monday, the 18th day of November, 1872, at the hour of one o'clock, P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

DAVID A. JENNINGS, Secretary.

Office, Room No. 4, No. 401 California street, San Francisco, Cal. no2-3t

Silver Sprout Mining Company—Location

of works and mines, Kearsarge District, Inyo County, State of California.

Notice.—There are delinquent upon the following described stock, on account of assessment levied on the 25th day of August, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
E. B. Mott, Jr	44	200	$100 00

And in accordance with law, and an order of the Board of Trustees, made on the 25th day of August, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public anction, at the salesroom of Maurice Dore & Co, No. 327 Montgomery street, S. F., on the 8th day of November, 1872, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale. T. B. WINGARD, Secretary.

Office, Room No. 1, Second floor, No. 318 California street, San Francisco. oc12-4t

Silver Wave Mining Company—Location

of works, White Pine Mining District, Nevada.

Notice.—There are delinquent upon the following described stock, on account of assessment (No. 9) levied on the 21st day of September, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Name.	No. Certificate.	No. Shares.	Amount.
Balcom, C F, Trustee	522	50	$50 00
Balcom, C F, Trustee	523	50	50 00
Barton, W H, Trustee	352	200	200 00
Barton, W H, Trustee	376	10	10 00
Barton, W H, Trustee	490	50	50 00
Breed, H L, Trustee	516	20	20 00
Crocker, J H, Trustee	489	50	50 00
Crocker, J H, Trustee	491	20	20 00
Crocker, J H, Trustee	492	100	100 00
Crocker, J H, Trustee	493	50	50 00
Croxall, J D	449	100	100 00
Eyre, E E, Trustee	507	50	50 00
Fogle, L C, Trustee	483	100	100 00
Fogle, L C, Trustee	484	100	100 00
Fogle, L O, Trustee	485	100	100 00
Holmes, H J	511	447	447 00
Hopkins, T R	521	90	90 00
Loveland, L F, Trustee	247	50	60 00
Martin, M S, Trustee	199	100	100 00
Martin, M S, Trustee	439	20	20 00
Perkins, J E	464	098	698 00
Perkins, J E, Trustee	337	500	500 00
Richardson, E A, Trustee	476	100	100 00
Richardson, E A, Trustee	480	80	80 00
Richardson, E A, Trustee	494	2000	2000 00
Richardson, E A, Trustee	496	50	50 00
Richardson, E A, Trustee	497	50	50 00
Richardson, E A, Trustee	498	95	95 00
Richardson, E A, Trustee	499	100	100 00
Richardson, E A, Trustee	504	75	75 00
Richardson, E A, Trustee	520	100	100 00
Richardson, E A, Trustee	524	300	300 00
Richardson, E A, Trustee	525	86	86 00
Robertson, Thos B, Trustee	519	300	300 00
Tibbey, E S, Trustee	512	100	100 00
Tibbey, E S, Trustee	513	100	100 00
Tibbey, E S, Trustee	514	100	100 00
Tibbey, E S, Trustee	515	100	100 00
White, Jas T	399	12	12 00

And in accordance with law, and an order of the Board of Trustees, made on the 21st day of September, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the company, on Monday, the 25th day of November, 1872, at the hour of two o'clock, P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. W. CLARK, Secretary.

Office, 418 California street, San Francisco. no2-3t

State of Maine Mill and Mining Company

—Location of mine, Amador County, California.

Notice is hereby given that at a meeting of the Board of Trustees of said Company, held on the 17th day of October, 1872, an assessment of five cents per share was levied upon the capital stock of said company, payable immediately, in United States gold coin, to the Secretary, at the office of the company, No. 305 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 26th day of November, 1872, shall be deemed delinquent, and will be duly advertised for sale at public anction, and unless payment shall be made before, will be sold on Monday, the 16th day of December, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

oc26-4t H. B. CONGDON, Secretary.

Office, No. 305 Montgomery street, San Francisco, Cal.

Caution---Victoria and Imperial Tunnel

and Mining Company—Location of works, Little Cottonwood, Utah Territory.

Notice is hereby given that the following named shares, designated by the number of their respective Certificates, in the capital stock of the Victoria and Imperial Tunnel and Mining Company, were duly advertised, and sold at public anction by John Middleton & Son, Auctioneers, on Saturday, the 12th day of October, 1872, for delinquent assessments and accruing costs of advertising and sale, and will not be transferred by said company.

Name.	No. Cert.	No. Shs.	Amt. due.	Shs. sold.
Thomas Tilden	52	200	$2400	25
Thomas Tilden	53	200	2400	25
Thomas Tilden	54	200	2400	25
Thomas Tilden	55	200	2400	30
Thomas Tilden	56	200	2400	40
Thomas Tilden	57	200	2400	25
Thomas Tilden	58	200	2400	20
Thomas Tildsn	59	200	2400	20
Thomas Tilden	60	200	2400	25
Thomas Tilden	61	200	2400	25

WM. H. WATSON, Secretsry.

Office, Room 5, No. 302 Montgomery street, San Francisco, California. oc19-3t

The First Annual Meeting of the Stock-

holders of the Ruby Hill Mill and Mining Company, location of works, White Pine County, State of Nevada, for the election of Trustees for the ensuing year, and the transaction of such other business as may come before such meeting, will be held at the office of the Company, No. 304 California street, on Thursday, October 31st, 1872, at 3 o'clock, P. M. P. W. VAN WINKLE, Secretary.

San Francisco, Oct. 23, 1872.

If You Write and Mail a Letter as Follows:

Messrs. HOWARD & CO., No. 865 Broadway, N. Y.:

Please send me your Price-List of Waltham Watches for 1872, as per advertisement in Mining and Scientific Press.

(Sign Name and Address in full.)

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AND MACHINERY MADE OF EVERY DESCRIPTION.

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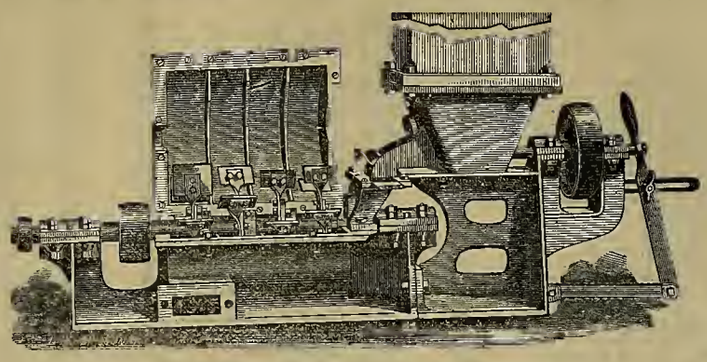

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OFFICE OF SWANSEA MELTING AND REFINING COMPANY OF CHICAGO.
CHICAGO, July 15, 1872.

L. P. DODGE, Esq., Agent for Messrs. WHELPLEY & STORER—Dear Sir: Your communication of the 10th instant is at hand. In reply would say that we have been running a Whelpley & Storer Pulverizer for the last six months, grinding ores of different kinds, some of them exceedingly hard The operation of the Pulverizer has been, in every respect, a complete success, grinding very fine, with but little power required to drive it, and but slight expense for wearing parts. We cordially recommend them to all parties requiring a Pulverizer for mining or other operations. Respectfully J. W. JONES, Superintendent, etc.

May be seen in practical operation on Main street, between Howard and Folsom, San Francisco.

This Machinery has been adopted hy nearly all the Eastern reduction works for reducing ores.

Parties purchasing machinery will find it for their interest to examine this before purchasing elsewhere.

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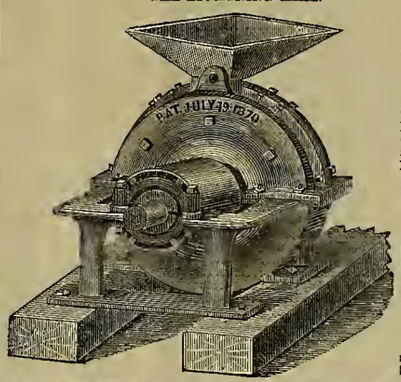

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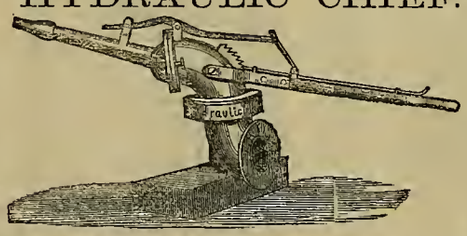

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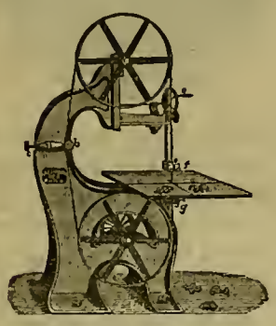

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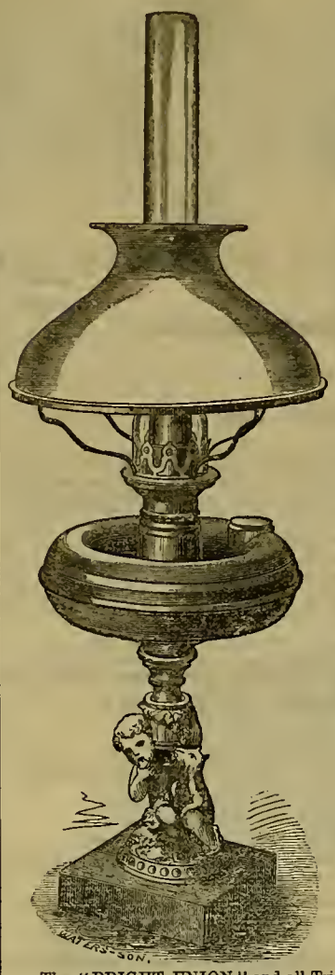
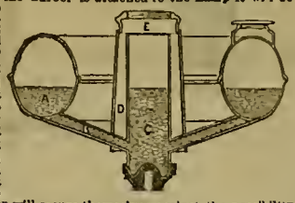


Patented May 30, 1871. Is the Best and Safest Lamp ever put in the market, for the following reasons:

1st.—The Lamp is constructed with two tubes, as will be seen in cut, the outside one (D) intended only for the attachment of the burner, and the inside one (C) to contain oil and receive the wick. As there is no connection between these tubes, it will be evident that there is no possibility of communicating any heat to the oil; and as long as the oil in a Lamp can be kept perfectly cool, there is, of course, no chance for an explosion.

This Lamp is the only one ever invented in which this result has been secured.

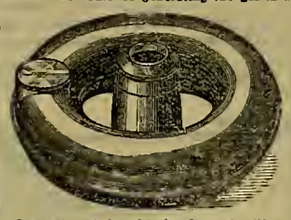
2d.—When the burner is attached to the Lamp it will be seen that there is no opportunity for the oil to escape should the Lamp be overturned, and in case any accident should occur the worst consequences that could ensue would be the breaking of a chimney or shade. From these facts it will be evident that those who adopt this Lamp will secure themselves against the possibility of fire or explosion arising from the use of kerosene oil.



3d.—The Lamp is strongly and well made, attractive in appearance, and something entirely new and novel. It will burn kerosene adopted to any burner. With all of these advantages it combines cheapness, and from present indications it is destined to become very popular.

4th.—The tube to which the burner is attached (D) is free from the tube of the oil (C), and a space for air, passing from the lower end, between the tube of the burner and the tube of the oil, keeps it always cool.

5th.—The burner is the cause of generating the gas in a Lamp. It cannot do it in this Lamp, as the burner is set on a tube which contains no oil, consequently it cannot make any gas.



6th.—In case of accident, the Lamp falling or thrown over, by which many explosions occur, is the cause of the oil rushing to the flame. In this Lamp it is not so; it can be thrown over and cannot send the oil to the flame; it will run from it, so there is no danger of catching fire.

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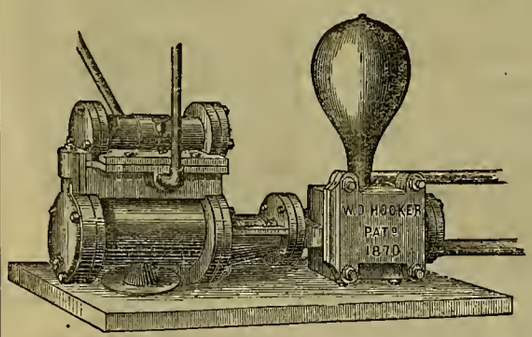

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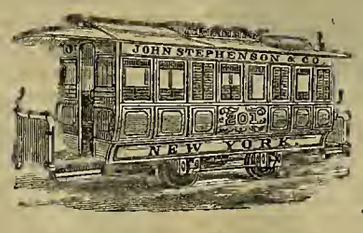

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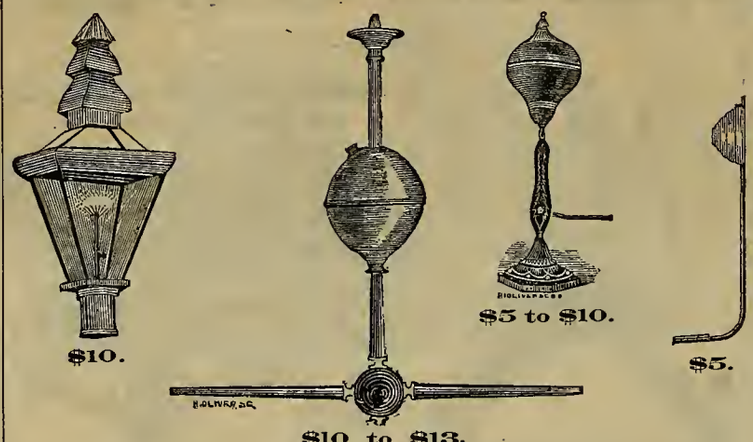

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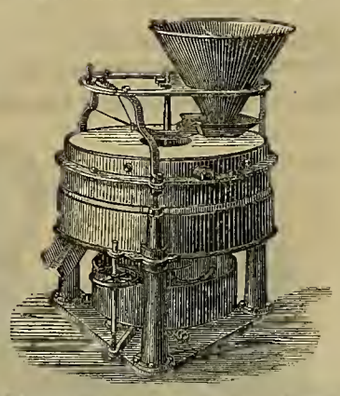

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COMMENCING
Monday, October 7th, 1872.
And until further notice, Trains and Boats will
LEAVE SAN FRANCISCO.

7.00 A. M. (Daily). Atlantic Express Train (via Oakland) for Sacramento, Marysville, Redding, and Portland, O. Colfax, Reno, Ogden and Omaha.

7.15 A. M. (Daily). Cal. P. R. R. Steamer (from Broadway Wharf)—Connecting at Vallejo with Trains for Calistoga, Knight's Landing and Sacramento; making close connection at Napa with stages for Sonoma.

2.00 P. M. (Sundays excepted). S. F. & N. P. R. R. Steamer (from Broadway Wharf), connecting at Donahue with Trains for Cloverdale. Making close connection at Lakeville with stages for Sonoma.

2.00 P. M. (Sundays excepted). Stockton Steamer (from Broadway Wharf), touching at Vallejo, Benicia, and Landings on the San Joaquin river.

3.00 P. M. (Daily). San Jose Passenger Train (via Oakland), stopping at all way Stations.

4.00 P. M. (Sundays excepted). Passenger Train (via Oakland) for Lathrop, Merced, Visalia, Tipton, and Los Angeles, Stockton and Sacramento.

4.00 P. M. (Sundays excepted). Cal. P. R. R. Steamer (from Broadway Wharf) connecting at Vallejo with Trains for Calistoga, Knight's Landing and Sacramento.

4.00 P. M. (Sundays excepted). Sacramento Steamer (from Broadway Wharf), touching at Benicia, and Landings on the Sacramento river.

6.30 P. M. (Daily). Overland Emigrant Train (via Oakland)—Through Freight and Accommodation.

OAKLAND BRANCH.—LEAVE SAN FRANCISCO, 7 00, 8 10, 9 24, 10 10 and 11 20 a. m., 12 10, 1 50, 3 00, 4 00, 5 15, 6 30, 8 15 9 20 and *11 30 p. m. (9 20, 11 20 and 3 00 to Oakland only).
LEAVE BROOKLYN (for San Francisco), *5 30, 6 40, 7 50, 9 00 and 11 00 a. m., 1 30, 2 40, 4 55, 6 10, 7.55 and 10 10 p. m.
LEAVE OAKLAND, *5 40, 6 50, 8 00, 9 10, 10 00, and 11 10 a. m., 12 00, 1 40, 2 50, 3 50, 5 05, 6 20, 8.05 and 10 20 p. m.
ALAMEDA BRANCH.—LEAVE SAN FRANCISCO, 7 20, 9 00, and 11 15 a. m., 1 30, 4 00, 5 30, and 7 00 p. m. (7 20, 11 15, and 5 30 to Fruit Vale only).
LEAVE HAYWARDS (for San Francisco), *3 45, 7 00 and 10 45 a. m., and 3 30 p. m.
LEAVE FRUIT VALE, *4 40, 7 35, 9 00 and 11 20 a. m., 1 30, 4 05 and 5 30 p. m. *Except Sundays.

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SAN FRANCISCO, SATURDAY, NOVEMBER 9, 1872.

VOLUME XXV. Number 19.

D. C. Gilman, President of University of California.

We present herewith a portrait of the gentleman who was inaugurated, on Thursday last, as President of the University of California. The engraving was drawn from a photograph kindly furnished us by an Oakland lady, and has been executed on wood by our own artist, especially for the columns of the SCIENTIFIC and RURAL PRESS. The photograph, we judge by the maker's imprint, was taken in England, and probably within two or three years past. The engraving will be remarked as a very correct likeness by those who know him.

President Gilman was born in Norwich, Conn., in 1831, and in his boyhood removed with his father's family to the city of New York, where he was fitted for college. He graduated at Yale in 1852, and after a year of past graduate study, partly in New Haven and partly in Cambridge, he went to Europe as an attaché of the American legation at St. Petersburgh. He spent a winter in study at the University of Berlin, and was afterwards Secretary of the Commissioners to the Paris Exhibition of 1855. His time in traveling was largely devoted to the study of educational and charitable institutions. On his return to New Haven he became interested with others in the establishment and development of the scientific department of Yale College, which has now become the Sheffield School of Science. He was librarian of the college from 1856 to 1865, and Professor of Physical Geography and History in the Sheffield School from 1863 to 1872. For several years he was also Superintendent of the City Schools of New Haven, and subsequently State Superintendent of Instruction in Connecticut. He has written for the *North American Review*, the *New Englander*, the *Journal of Science*, and other periodicals, and has printed several public addresses, but has published no volume.

In addition to his other duties Professor Gilman held the office of Secretary of the Sheffield School of Science, a position attended with much labor, but at the same time one giving rare opportunities for becoming familiar with the working and wants of such an institution. He comes among us young in years, but ripe in scholary attainments, and especially familiar with what is useful in building up a great institution of learning, such as we are now endeavoring to make the State University at Oakland. We have no doubt but his inauguration to the Presidency of that institution will prove an important era in its history. We bespeak for him a hearty welcome, and earnest support from all who are interested in the great cause of education.

SHORT WATER SEASON.—Notwithstanding the large fall of rain and snow in our mountains last winter, affording a flush supply of water everywhere in the spring, the flow seemed to stop suddenly at an early date. Many miners are puzzled to account for this. We think it is owing partly to two reasons. To the excessive dryness of the earth, extending to an unusual depth in place, owing to repeated dry seasons, and to the fact that the time was short during which the large body of rain fell last winter, causing a large proportion to run off at once, and not giving time for soaking deep into the ground. The hills adjoining Oakland and Brooklyn, in Alameda County, we observe have been dryer this year than in what have been termed our dryest seasons, more springs and wells having completely dried up.

Variations of the Needle.

The subject of electricity is as yet but imperfectly understood, and we have much to learn in regard to the laws controlling it. At the last meeting of the California Academy of Sciences, C. D. Gibbes, Civil Engineer, made some interesting remarks on the subject of variations of the needle, and said his attention had been called to this particular subject from having been recently engaged in sub-dividing several thousands of acres of swamp lands on the San Joaquin River; a place where one would least expect to find any local attraction to disturb the needle. Nevertheless he had experienced great difficulty in connecting with old surveys, and had found the needle to vary more than one degree on the same line, one mile apart. Both observations were taken on the same tall flag, and the line established by fore and back sites with a transit, one station being on dry land, and the other in a dense body of tules, dry and green together, with water one foot deep, and wind from the west. A difference also frequently occurs between open grass land and heavy tules, more than would be occasioned by the diurnal variation.

Now will the wind, by agitating the tules producing friction of the dry piths of the dead tules, create electricity so far as to effect the needle? This is a question that should be investigated thoroughly. Mr. Gibbes suggested that the Academy request all civil engineers to give the results of their experience, with regard to local attractions or disturbances of the needle in different parts of the State; and the facts thus collected may throw some light on the subject. In a previous communication on the subject Mr. Gibbes stated that his needle had been twice affected by a dry northwest wind, causing it to adhere to the glass. The same thing had occurred to Mr. Hunt, County Surveyor of Contra Costa.

DANIEL C. GILMAN, PRESIDENT OF THE UNIVERSITY OF CALIFORNIA.

Professor Geo. Davidson, in reply to Mr. Gibbes, said he was convinced that the variation was from no other cause than the effect of iron deposits in the earth, and it could be obviated by elevating the needle in the same manner as the compass on an iron ship.

STEAM UNDERGROUND.—In some of the English mines, steam generated at the surface is conveyed in pipes to engines below, and in one example the steam passes through 4-inch pipes, 2,338 feet, losing only half a pound pressure per square inch.

GOLD quartz is said to have been discovered in Westchester County, New York.

Academy of Sciences.

At the regular meeting of the California Academy of Sciences, held Nov. 4th, the following new members were elected: Rev. A. J. Nelson, James G. Steele, Rev. Dr. Wythe, Rev. Otis Gibson, John S. Bngbee, James F. Bowman, G. D. Wyman, B. Howard Coit, Lieutenant Commander Henry Glass, U. S. N; Richard S. Floyd and Peder Sather.

Donations to the Cabinets.

A nnmber of contributions to the cabinets were received as follows: nest of marsh wren (*Trogolodytes Palustris*) composed of different grasses ingeniously woven together, from Mr. Gibbes; frogs from the swamp lands, of the the family *Hylidae*; plants from swamp lands by Mr. Gibbes. Among them were the tule potato, so called from being found in swamp lands amongst the tnles. The bulb is about the size of a hickory nnt, and it is fine food for swine, The Chinese collect large quantities of the bulbs for food, and it may be that it might be improved by cultivation. A vegotable called the wild artichoke, but in reality not belonging to that family. It is eaten by swine. A small rush, which may eventually become nseful for the manufacture of hats. The wild hollyhock, supposed to be of the same family, found generally on the banks of rivers in grass lands. It bears a white flower with crimson centre.

The first lobster found in the waters of the Pacific was presented by S. R. Throckmorton. It was about one third the size of those found on the Atlantic coast, but the fore claws were proportionally larger.

California Chestnuts.

Dr. Kellogg said he had jnst returned from under the shadow of the finest evergreens ever grown. He hoped the Secretary would record the fact that there were in California true Chestnut trees *(castana chrysophylla)* from 100 to 200 feet high, 4 to 6 feet in diameter, and with a clean trunk of 50 to 70 feet. This fact had hitherto been doubted, although he had stated it before the Academy several times. He had on the trip also met with *rhus aromatica*. A new plant, described by him was an *hibiscus* or kind of wild hollyhock, having a strong fibre similar to the ramie; the first ever collected in this State. It was found by Mr. Gibbes. *Hibiscus Californicus* —Kellogg, is from 4 to 6 feet high.

The Tule Potato.

Mr. Bloomer read a paper on the plant presented by Mr. Gibbes describing it as a *Sagittaria*. It is indigenous to California and the bulbs or roots are edible. The Pacific Railroad reports say it is eaten by the Indians, who term it Wapatoo. Dr. Kellog said it was also consumed by the Chinese in large quantities. Mr. Bloomer also said that the plant known to settlers along the San Joaquin as the wild artichoke was *Lycopus Europaeus*, commonly termed "water horehound." It was widely separated from the Jerusalem artichoke.

California Glaciers, Etc.

Professor Carr read some interesting extracts from letters from a student who is traveling in Yosemite, describing living glaciers in that locality. Professor Davidson said if this were the case that it was the lowest latitude in which we find the living glacier. This one is, however, small.

Dr. Dall read a report of recent explorations in Alaska, describing some pre-historic remains. We will give this paper in full in our next issue.

The paper read by Dr. Stout on the horse disease will be found in another column.

NEW ROUTE OF TRADE.—Part of the bullion product of the Cerro Gordo and Owen's River mining districts is now sent by the San Joaquin Valley Railroad to this city, and by the first of December all the trade with these sections will be carried on by this route *via* Tehachapi Pass and Bakersfield to the terminus at Tipton, instead of *via* Los Angeles as formerly. The opening of the new route was inaugurated on the 2d inst., by the arrival of three large mule teams with 30,000 pounds of bullion, at Bakersfield, Kern County. Large numbers of teams will be kept running.

Commercial Reporting.

This is the newspaper age—the era of reporters. And truly wonderful is the proficiency that the latter have attained in their art—for successful reporting is an art. They are, in fact, to the outside world what the schoolmaster is to the child; they are foremost amongst the educators of the day. They have in their day overcome much prejudice, and succeeded in making themselves recognized in perhaps the greater part of their peculiar domain. There yet remains for them reportorial worlds to conquer. Commercial reporting, for instance, may as yet be said to be only in its infancy. This, however, rather on account of an unreasoning prejudice amongst those who are applied to for information, than any lack of skill on the part of the professional. It will be some time yet before this prejudice is removed, and before business men will see the propriety of giving such information to respectable journals as shall enable the commercial newspaper to give an accurate

Photograph of the Business World.

That such a picture is not now obtainable is self-evident.—in fact the business man has to depend largely on his own knowledge of movements in the business world for the information that is indispensable to him. So that when he sees it in the newspaper there is nothing that is new to him, and the former but serves as a commercial record to which he can refer to refresh his memory as to what was thoroughly well known to himself in the past. But, after all, what is this record? It merely contains such information as to arrivals and departures of ships, imports and exports, sales and prices as the magnates on 'change wish to make known, and it is frequently inaccurate, often designedly so. It does not contain full reports, even on all these subjects. There are, for instance, no reliable statistics of imports, save those on which duty is paid, and of which a record is kept at the Custom House. The sales quoted are only a few of those effected every day, and often do not at all represent the state of the market. Frequently enough the prices are not given, and even when they are they are rumored to be not always those offered or accepted. It is seldom that the stock on hand of any article can be ascertained, the stock to arrive, or

The Needs of the Market.

Figures given, when they are given, are merely approximations. And it is only once in a hundred times that the true state of the harvest, say in coffee, sugar, etc., is ascertained. And all this in regard to the transactions that may be observed on the surface of the commercial world, for after all were all these items ascertainable in a correct form, that is all they would represent. Sales would often be found to be made in response to the demands of the customers not other agents, but through a merely speculative spirit, and prices would be found to rise and fall through similar influences. The real

Demands of the Market,

From day to day, and year to year, can only be ascertained by finding out the correct amount of sales made by retailers, the real stock in their hands, the real requirements, and the state and demands of the population to whose wants they minister. The state of the crop can only be ascertained by having trustworthy agents in the localities where it is grown, and the quantity of it available for any particular market, can only be known when the surplus is known and the prospective demands of the various countries which form the particular source are supplied. How few of these items of information are ever known thoroughly or accurately, but they should be known in the interests alike of the producer, the buyer, the seller and the consumer. Such information as this can be collected only by

Bureaus of Commercial Statistics

Continually receiving reports from all classes of tradesmen, wholesale, jobbing and retail, having special agents in foreign countries to make crop and market reports, and special agents in local markets to ascertain that information which prejudiced parties would be unwilling to give. The value of the reports obtained by such agency is self-evident. They would keep everyone interested, thoroughly posted all the time on the most minute details of the wholesale and retail markets, on sales, prices, stocks, wants, etc. They would save to many thousands of dollars yearly, would save many from irretrievable ruin, and would check more, if not altogether abolish, the spirit of speculation and reckless trading. They would, in fact, really fill the position now imperfectly filled by Merchants' and Produce Exchanges. Such institutions are naturally those that should undertake this business. They have a thousand opportunities for obtaining special information which those outside could never have, and they already fill the position to a certain extent. The way lies unobstructedly before them, and by following it up they will be enabled to satisfy to-day what is one of most pressing wants of the mercantile world.

Large Casting.—Preparations are making at Woolwich Arsenal for a casting which is said to be the largest ever attempted, being intended for the anvil-block of the 30-ton Nasmyth hammer, which is to be erected in the new workshop of the Royal Gun Factories. It will weigh more than 100 tons.

Advance in the Price of Metals.

The prices of metals have advanced so largely within the past few months that we presume a few words upon the present remarkable features of the market and the cause of the advance in prices, may not be altogether uninteresting to many of our readers.

Iron.

The condition of the iron market at the present time is in many respects without precedent in the history of the trade. With every furnace in blast, and importation as large as the very limited surplus of foreign production will permit, there is still a great scarcity of manufactured iron. Since January 1st American Pig No. 1 has advanced from $36@$37 to $56@$57 per ton. The chief cause of the rise in this article is doubtless the enormous impetus given to railroad building since the closing of the Franco-German war unlocked European funds. The substitution of iron for wood in the construction of steamers and sailing ships of late years has greatly increased the consumption of iron, but the remarkable spread of railroads, not only in the United States, but recently throughout the entire world, may be called the principal reason for the great demand for iron, and the wonderful increase in the consumption of this important metal. In England, Scotland, Prussia and Russia—especially in the latter—railroads are building with marvelous activity. The exports from England of railroad iron, hoops, sheets and plates, have increased this year to Germany, Holland, Sweden, Spain, Austria, Egypt, Brazil, Peru, Australia, British America, and United States. Apparently this is only the begiuing of a revival in trade, as after a run of several years of depression business generally became suepended, many undertakings had to be abandoned or neglected until a more propitious season should present itself. Consequently the amount of work now in hand, to some great extent, belongs to previous years, and the present time is only making good what would in the ordiuary course of events have been done long ago. The spirit of enterprise, however, is now not only redeeming the past, but straining to keep pace with the requirements of the age. The anticipations of the future have yet to be realized, but as supplies still continue to be inadequate to meet the present wants, it is difficult to conjecture, with any degree of certainty, how long present prices may continue. It is but natural to suppose that the high rates which ores command would stimulate production, and that with increased production there would be a proportionate fall in the value of iron; but hitherto the supply has been insufficient to meet the ever growing demand; and if generally received information may be relied upon, contracts have been accepted for fulfillment next year, on such a scale as shall result in the maintainance of high prices for some time to come.

The scarcity and high price of coal in England is another cause for the advance in iron. One reason for the extreme prices of coal is without doubt the greatly diminished production, for as the men have got greatly advanced wages the quantity of coal they turn out is reduced, and thus a scarcity is induced which was never before known. There is considerable difficulty in getting manufacturing coal. Numerous manufacturing companies in various parts of England are absolutely closed for want of coal, and may continue so for some time.

Tin Plates

Have advanced to prices unprecedently high, the prime cause of which is the late enormous advance in pig iron and fuel. Almost all the factories where coal is used in large quantities are suffering from its short supply. Many of the tin plate manufacturers are actually without fuel to commence the next day's work. They are behindhand in the delivery of their orders, which has had the effect of rendering stocks very small, and the price of tin plates, which was originally affected by increased cost of material, is now being further advanced from inability of many manufacturers to deliver orders. Whether tin plates will be much higher within the next few months will depend greatly on the supply and demand, although it may be many years ere we shall have the extremely low rates that once ruled for so long a time.

Inventions Needed.—The *American Artisan* asks inventors to turn attention to the following much-needed machines: A ditcher that will cut a narrow ditch for the reception of drain-tile; an apparatus to be drawn by horse-power and capable of laying the tiles in the ditch when formed; a mole plow which shall make a subterranean drain that will not choke up in a year or two; an efficient potato-harvester; a stone-gathering machine capable of clearing a field of stone and piling the same in winnows; the stone for walls, the field for smooth-rolled meadows fit for easy mowing with a machine; a sowing apparatus that will sow beans and peas as effectually as the common grains are sowed; a small machine for pulling flax; a small power-accumulating wind-mill, not to exceed in cost to ner more than $15 or $50, for churning and similar purposes; and an automatic sheaf-binder for harvesters.

Diamonds in New York.

This country is rapidly advancing in all that tends to promote its general prosperity, and promises soon to surpass foreign nations in the prosecution of those arts which they have always deemed their specialties. Until a very recent date, Amsterdam has held the monopoly of the business of cutting and polishing diamonds, and by the experience of hundreds of years, during which period generation after generation has been born to and educated in the art, that city has attained an almost world-wide renown. Some years ago, however, a firm in Boston became engaged in the pursuit and has met with well-deserved success; but their attention was chiefly directed toward the repairing of diamonds, involving the reforming of the stones, and, of course, the repolishing. It was reserved for New York to go into the business thoroughly, and, much to the satisfaction of the leading jewelers of the country, the venture has proved more than successful.

Not long since several gentlemen of this city determined to organize a company having for its object the formation of a diamond market here. This was no small task. It required a large outlay of capital. It was necessary that the most experienced workmen in Amsterdam should be induced to come to this country to give us the benefit of their experience. Machinery had to be invented which should, if possible, surpass in efficiency that used in Amsterdam. These difficulties were overcome; the capital was obtained. Hollanders of long practice signified their willingness to embark in an enterprise which commended itself to their common sense. Machinery was invented which fulfills the requirements of the business, and just a year ago the "New York Diamond Company" began operations, having for President Mr. Isaac Hermann. The process of preparing diamonds for use is of singular interest. The business is divided into three distinct branches, and such is the proficiency necessary in each branch that it is extremely seldom that a workman can be found who is master of all three.

The rough diamond is first handed to the "cleaver." He is expected to see in an instant where any flaw in the stone is situated; he must be able to tell what parts must be split off in order to get rid of any flaw, and at the same time retain as much weight as possible, with the greatest brilliancy. He calculates how much the clippings will be worth, whether they will make small brilliants or rose diamonds, and having reached his decision he fastens the stone in the end of a wooden stick, securing it by a cement made of rosin and brick dust. Another diamond, already split and having a very sharp edge, is served in like manner, and with this he cuts a notch in the diamond he is about to split. This operation is performed over a small box containing a sieve which catches the diamond dust. The notch being made, the cleaver takes a small steel rule, which he places on the line in the direction of which the cleavage should be made. Having, apparently, taken his aim, he places the ruler in the notch, and with one or two quick taps with a steel rod the stone is split. Heating the cement, the workman removes the diamond; it has been so split that the flaw has been entirely removed. The diamond may be worth hundreds, perhaps thousands of dollars, and any ignorance or error on the part of the cleaver might destroy for his employer more than they could recover in weeks.

From the cleaver the stone is passed to the "cutter," and secured in exactly the same way. The diamond to be shaped is held in the left hand, which is protected by a heavy leathern glove. In the right hand is the stone which is to be used in grinding down the facets of the diamond which is under treatment. The process is very slow, and when the stone leaves the hands of the cutter it has lost whatever brilliancy it may have had, and looks more like a common pebble. But now comes a great transformation.

Visiting the polishing-room the attention is first attracted by what seem to be round steel tables. Upon closer examination these are seen to be the disks, which are used in polishing the diamonds. They are making 2,000 revolutions per minute, and are covered with a compound of oil and diamond dust. The first process is to solder the stone into a sort of brass cup, leaving visible only that portion of the diamond which is to be polished. Taking into consideration the fact that every stone has sixty-four different surfaces to be polished, it will be immediately seen how difficult the work of this operator is, and how exact he must be. Taking the stone he places it in the solder, now in almost a liquid state, and with his fingers shapes the metal around the diamond. This is then plunged into water, and as the steam arises from the molten mass, one naturally turns to see if the workman is provided with hands of iron. But no—practice has made him invulnerable.

The polisher now takes the diamond, touches the point with the oil and diamond dust, clamps the cup containing the precious stone in a wooden rest so that the diamond shall just touch the polishing disk. By weights he regulates the pressure. Experts will have three diamonds undergoing this process at the same time, and yet they seem to pay but little attention to their work—so little, in fact, that one might well wonder whether they are taking any interest at all in what they are doing. But little does the observer realize the years of patient toil that has enabled the operator to attain his great proficiency. At times a stone may be so hard that months are required to give it the proper brilliancy; but, sooner or later, the lustre appears, and what has been the object of so much solicitude and labor, finally comes out a perfect gem."—*New York Tribune.*

From the San Feliciano Mines.

A day or two ago, says the Los Angeles *News* Judge Joel Turner, formerly Mayor of this city, returned from the San Feliciano mining region, situated on the Temescal grant, at about fifty miles from this city. The San Feliciano mines are supposed to be the oldest placer mines in California. The banks containing the auriferous deposits are from seventy to eighty feet in depth, from surface to bed rock, and are of a cement nature, the gold being well disseminated throughout. A scarcity of water existing in that vicinity, the mines have been unproductive. At present, what work is being carried on is done with the water collected into a reservoir from a spring, enough water being thus collected to do one-half hour's washing out of the twenty-four. The gold obtained is of a coarse and heavy character. There is but one claim there which is worked by Americans, and a few native Californians are engaged here and there in the district mining for gold, and making from one to one and a-half dollars per day.

The Temescal grant, upon which the mines are located, was granted to Deda Questa, and by him sold to Harpending, Hydenfelt & Co., who now hold it.

Judge Turner brought with him some iron-stone pebbles, found in the clay indicating the presence of a vein of that mineral somewhere in the vicinity. He also brought with him some petrified bones, evidently the remains of a horse, found at a depth of between seventy and eighty feet from the surface. The enamel of the teeth has been converted into rock resembling quartz. We learn that the bones of animals have been found in these deposits at various times before, which leads us to believe that the region must have undergone a sudden and entire change at a comparatively recent period, as the process of petrifaction is as yet incomplete in some of the remains found.

Hayden's Yellowstone Expedition.—A correspondent of the Helena *Herald*, writing from Bozeman, Montana, October 14th, says: "Recent advices from Mr. Stevenson, Director of the Snake River Division of the U. S. Geological Survey, announces the arrival of the entire party at Fort Hall, on the 11th inst., crowned with success. The entire Snake River Basin has been carefully explored by them. The party reached the Geyser Basin the last of July; obtained supplies from Virginia City, via Madison valley. They followed the Madison river to its source in a small lake, and crossed the divide to Madison lake. They found that Madison lake had no connection with Madison river. It had an outlet about 100 feet wide, flowing in an opposite direction from the one given on the maps, which they followed to its entrance into another lake about five miles wide; this proved to be the real source of Snake River. They found a Geyser basin near the sources of Snake River, with about two hundred springs, of all sizes, some of which spouted eighty to one hundred feet in hight. The division, under the direction of Professor Hayden, reached Bozeman to-day, having completed the season's labors. Every step has been a success, and the amount of valuable material of scientific and practical value exceeds that of any previous year. The entire party proceed at once to Washington, to prepare the report to be presented to Congress for publication at an early date.

Extent of American Peat Fields.—Mr. W. S. Tisdale contributes to the *Coal and Iron Record* an interesting record on the extent of the peat fields of this country. According to his estimate, our supply of this fuel will exceed that of Ireland one hundred and fifty times. In Orange and Rockland counties, N. Y., the peat beds contain, at a low estimate, 225,000,000 tons. Beds are also known to exist in over 100 different towns of Massachusetts. The Dismal Swamp of Virginia will yield 500,000,000 tons of peat. There are 4,000 acres in one body in New Jersey, and there are similar bogs in all parts of the State. There is a peat bed in Westchester county, N. Y, which will yield 900,000 tons. Long Island has millions of tons. Along both sides of the Kankakee river, Indiana, extending from South Bend to the Illinois line, is a peat bed more than 60 miles in length, with a width of three miles. In some places it is over 40 feet deep; but even though it average only half or even one-quarter of this depth, the aggregate amount of fuel it contains is beyond comprehension. This, Mr. Tisdale states, does not include one fiftieth part of the peat bogs of the country.

Chemical Laboratories in Japan.—There are at this time four chemical laboratories in Japan, where the science is taught, three of them being presided over by Germans and the fourth by an American. The chief one is at Osaka, where there are nearly one hundred students. The rest are at Kaga, Shidzoka and Fuwuki. A fifth will soon be opened at Jeddo. The students are said to be fairly intelligent, but their minds are at present encumbered with astrology and other kinds of spurious philosophy.

MECHANICAL PROGRESS.

Imperfect Constructive Materials.

Much haa been eaid of late about the imperfect character of a large portion of the constructive materials now in nse, and the large advance required for that which is enperior in character. There is also a growing tendency, especially on this continent, towards imposing upon euch materials all the strain they will bear. The question of safety is qnite too little considered, economy and lightness being the ends mainly kept in view. Our civil engineers continue to plan larger and bolder bridge structures, snd more extensivo and complicated deeigns for warehouses, etc., while our mechanical engineers are building largor engines, increasiug their stoam pressures and tbe speed of their working machinery without making due allowances for the increased pressure thereby imposed upon the various parts of snch structurcs and macbinery.

Engineering, in allnding to tbo above facts, aSks:—"In what direction aro we to look for improved constructivo materials, and how can the discovery and commercial manufacture of such materials be bost promoted?" In reply to the latter portion of the qnery the editor of the paper qnoted calls attention to a very important mstter in connection with the production of constructive materials in the following words:—

"If an engineer now-s-days is called npon to construct a bridge of nnusually large epan, or if a mechanical engineer hss to mske an nnusually light boiler capable of etanding a high pressnre, he is not content with employing the constructive materisls ordinarily found in the market, but specifies for steel or iron capable of resisting satisfactorily high-test etrains. Under these circnmstancee he may obtain a matorial having a constructive value eome 20 or even 30 per cent. grester than the average of that ordinarily manufactured, bnt he will, of course, hsve to pay for tbie advantage a considerably increased price.

Now, althongh this increased price is partly no:essitated by increased cost of production, it is in very many cases due to no unimportant extent merely to tbe fact that the demsnd for very high-class material is an exceptional one. Tbe furnishing of snch material, in fact, necessitates the manufscturers departing from his nsual routine of business, and hence expenses are incurred whicb would vanish if the demand for the very best materials was constant instead of intermittent. In other words, we believe that nsere of iron and eteel could obtsin a considerably bettor average qnslity of msterial at a very moderste increase of price if they would simply take tbo trouble to sscertain systematicslly the qnality of the msterials they employ.

What is wanted is s more general abandonment of the brute strength system of construction, snd a more rigid epecifying of good materials combined with careful testing, to insnre that such materials are supplied. With a more general demand for high-class products, there would be an increased development of the manufacture of snch products, and mnch of the energy and skill now devoted to producing materials which are exceedingly cheap would he more profitably turned to account in manufscturing products which should be exceptionally good.

An Invention Wanted.

Engineering, in an article on Constructive Materials, says there is a great need of an alloy of steel which will retain the strength of the preeent caet-steel, and at the same time poseees a lower melting point and increased fluidity. Ae eteel is now made, the excessive high temperature at which it is necessary to run the steel, and consequently the great ehrinkage which takes place during the cooling, is a difficnlty in the way of producing castinge of a complex form, or having parts of very limited thicknese; while the greater or lese poroeity of many of the csstings renders them inapplicable in numerons instances where tbeir great strength would otherwise render them specially valuable.

That such an alloy, or its equivalent, will ultimately be discovered, *Engineering* thinks there ie no great reasonable doubt, and adds:

"The whole subject of alloys is one of vast importance, and one which has never yet received the full attention it deserves. * * * An important inetance of the effect exercised on the properties of a metal by the admixture of foreign eubstances is afforded in the

'Phosphor-Bronze'

Of Livi and Kunzel, and as this alloy promieee to become one of the 'materale of the future,' we may eepecially advert to it here. From particulars of careful experiments with this material, now before ne, we find that the addition of a very small percentage of phoephorue to gun-metal containing ten per cent. of tin, increased the elaetic limit about 35 per cent., and the breaking-etrain per sqnare in. of the original section 80 per cent; while one sample of phosphor-bronze, containing 6.2 per cent. of tin had n breaking strain of over 51,000 lbs. per sqnare in. of original section, and elongated 10 per cent. before fracture.

"Judging from the samples wa havo ecen, also, the phosphor-bronze appears to be capable of making very close and dense castings, while the property it possesses of casting well in metal moulds is one of very great value in many instances."

New Process of Combining Iron and Steel.

A process for combining iron and steel bas recently been invented by Mr. E. Wheeler, of Philadelphia, for wbich some novel and nseful features sre claimed. Tho principle of this inventiou consists in bringing the two metals to a woldiug heat in one "pile," and then eubjecting them to a rotary motion. Tho chief difficulty hitherto experienced in effecting the union has been that, when the steel is subjected to the welding heat of iron, it is injuriously affected by the temperature, and assumes that appearance technically known as "burnt." While the use of proper fluxes may reduce, or even obviate this tendency, their employment is objectionable on eeveral accounts. In Mr. Wheeler's process the combination ie effected, and tbe steel protected from oxidation by being enclosed in an iron case, made as nearly air-tight as possiblo. The following applicatione of this invention are proposed: First, the reduction of eteel into an iron-coated steel elab, plate, or bar, in whicb eteel predominates; second, the production of steel-centered iron, in wbich iron is the principsl metal used; and third, a combination proper, in which the steel is so proportioned nnd placed as to endure wesr and support strain.

This process has already received high enconiums from technical journals, and has given good results in practice. Its simplicity is one great recommendation, and commends it to the attention of manufscturers. Alluding to some of its applications, the inventor says: "In the rspid aud economical manipulation of scrap steel of any kind by this procese, the advantage over the old methods is so great as to leave no question of competition. Cast-steel ecrap, when encased in iron as described above, csn he rolled into finished bar at one operation, and even Bessemer steel scrap, wbich has hitherto defied every attempt to weld it up into a sound mass, is by this process reworked from sny size of "pile" into any desired shape of rail, bsr, or plate, as sound and homogeneous as from the original ingot. The great importance of thie festure of tbe inventiou to the railrosd interests of tbe country will be obvious to all those managers who have adopted eteel rails, or who have contemplated eo doing, and have felt that eooner or later they must meet tbe question—'What shall we do with Bessemer scrap?'"

Barron's Process for the Manufacture of Steel Tools,

Or rather, for the conversion of iron tools into eteel—is now in operstion in Lonisville, Ky., where it has attracted no little attention, and hss met with very encouraging snccees. Tools which are to be prepared by this procees are first msde of cast-iron, sfter which they are introduced into a revolving drum, where the roughness and adhering sand from the moulds are worn off by attrition. The emooth irons are then packed in layere in iron boxes, where they are closely embedded in clay, and subjected to the action of oxide of iron and certsin chemicals, by which the iron ie decarburized. There eeems to be a secret connected with this part of the process. In these boxes the iron tools are subjected to sn annealing heat, which ie maintained from three to six days. They are subsequently plsced in a retort capable of containing about a ton of the tools, into which the vapor of gasoline and other carbonaceous mar iale are passed. In a few minutee the iron is traneformed into steel, when they are ready to he tempered, and ground and polished for the market. The explanations of this procees are not ae clear ae they might be, bnt of the quality of the eteel tbus produced there is very little queetion. Prof. J. S. Newberry, of the School of Mines, Columbia College, New York, referring to thie subject, saye: "With tailor'e shears cast in shape, made malleable, and then converted by the Barron procese, I have cut Florence silk so nicely ae to prove the edge perfect; then, with the eame ehcars, have cut up eheets of tin and untempered steel; returning to to the silk have fouud the edge wholly unimpared, and thie after a repetition of more than twenty times." By whatever process steel of thie description is made, ite exceeding valne mnst create for it a wide demand, and soon render the method by which it is made widely celebrated.

MARBLEIZING SLATE.—The following is the new process employed for making slate assume the appearance of marble, for decorating interiors: After being properly cut and trimmed, it is ecoured with pumice etone, then rubbed with powdered pumice etone, and polished with felt. It ie now ready to be transformed into marble. The elabe, having been painted with the gronndwork color, are ready to dip. A vat containing water mixed with ox gall, on which the colors are floated, ie at hand. A hrueh is dipped in the colore and eprinkled on the eurface; then the water ie fanned with a palm leaf and the brush drawn throngh several times. The mixed paint spreads on the surface of the water like veining in marble, and the slab is then lowered until it touches the surface, when tbe floating color adberes to it; it is then put to dry. After the application of colors sundry bakings and polishings finish the work. Tbis marbleised slate is quite elegant, possessing sixteen times the strength of marble and scarcely distingnishable from it.

SCIENTIFIC PROGRESS.

Zoellner's Theory of Terrestrial Magnetism.

Zoellner proposes a new tbeory in regard to the origin of terrestrial magnetism. He adopts the idea of drift currente upon the liquid surface of the sun, by means of which he tries to explain tho movemente of tho sun-spots. These drift-currents originate, according to bis conception, from the current of best continually ascending from tbe interior, and from the rotation of the sun. Such currents, Professor Zoellner maintains, exist in all rotating cosmical bodies, even after tbe surface, cooled by radiation, has become rigid to a certain extent. Tbis is the case with the earth, and the continuous regular currents of the interior liquid mass produce different effects upon the outer shell, mechanical, thermal, and also magnetical, the latter as a necessary consequence of the electricity originated by the currents. Zoellner further maintains that by thie hypothesis the general phenomena of terrestrial magnetism msy be satisfactorily explained, and thst they are related to the currents of the inner liquid mass, and whatever effects theee currents, as, for instance, volcanoes, reacts immediately upon the magnetism of the earth. Whenever n cosmical body becomes entirely solid, no induced magnetism can exist; so our moon, which appears entirely solidified, and in which all volcanic action has ceased long ago, has no influence on the terrestrial compase-needle.

That terrestrial magnetism is caused by electric currents runniug from east to west under its surface, and which compel the compass-needle to place itself at right angles with the current, thus in a north and south direction, according to tbe law discovered by Oerstedt, in 1819, wse already suggested hy Ampere forty years ago; but to apply this idea to cosmical bodies in general, and even to the eun, where a temperature prevails excluding sll magnetic action, according to our preeent experience, ie an idea entirely orignal with Zoellner, and if it were not supported by eo eminent a nsme as Zoellner's, we would not take any notice of this theory.—*Exchange.*

Phenomena of the Spheroidal State of Liquids.

At the recent meeting of the British Aesociation Mr. W. F. Barrett read an interesting paper upon the conditione affecting the spheroidal etate of liquids and their possible relstionship to eteam boiler explosions. It appesrs, in brief, that he has found that tbe preeence of alkalies or soape in water quite perceptibly aids in the production of the phenomenon of the spheroidsl state. He relatce as oue experiment, which first drew his attention to the subject, that having occseion once to cool a red-hot copper ball, he plunged it into some water in which he hsd just washed his hands. He etatee that, to his surpriss, the ball entered tbe water without hissing, snd without visible evolution of steam, snd on being removed was appsrently as hot ae before.

This sccidental obscrvation led to experimente, with a view of ascertaining the causes of this curious pheuomena, since it appeared impossible that the epheroidal etate could be maintained with water by a body at so low a temperature. Fresh water wae tried, hut with a different result. The hall, upon immersion, evolved a lond hissing sound and gave off a copione discharge of steam. By adding s little eoap to the water, he was enabled to reproduce the phenomenon at first observed, the ball entering the liquid quietly. Albumen, glycerine, and organic eubetances generally produced the eame results.

The bcst method of reproducing the phenomenou, the autbor eays, is to make use of a eoap solution mixed with water, and to plunge into this a white-hot copper ball about two pounds in weight. The ball enters the liquid smoothly and quietly, and glowe white-hot at a depth of a foot or more beneath the surface. Even against so great an hydrostatic pressure, tbe ball will he surrounded with a ehell of vapor perhaps an inch in thickness. The total reflection of the light from the bounding surfacee of the vapor hubble eurrounding the glowing ball, gives to the envelope the appearance of burniebed silver, making the experiment quite an interesting one. As the ball gradually cools, the bounding envelope becomes thinner, and finally collapees altogether, followed by a loud report and the evolution of large volumee of steam. From the facts elucidated hy his experimente, the author makee the euggeetion that the tracee of oil, or other organic matters which find their way into a steam boiler, may similarly produce a eudden generation of steam sufficient to account for certain problematical explosione.

The Constitution of Matter—Matter and Force but a Single Entity.

Matter, ae we conceive it, is inert, that ie to say, is unable to change of its own accord its condition of motion or of rest. Thst which ia capable of communicating a movement ie known as force.

There are several forcee of which wa hava knowledge—heat, light, electricity, magnetism, attraction of gravitation, life. For many centuries theee various forces were considered sa eo many distinct entities, but in our age it is understood that they are merely different manifestations of a single force. In fact, these forme are converted one into another with the greatest facility. When we heat an iron bar, it lengthens, mechanical action ie produced, heat is absorbed. If we could reduce the bar to its original size by compression, the me hanical work produced by the heat wontd be destroyed, but the hest sbsorbed would be set free. When we pass an electric curr nt of certain intensity through a fine copper wire, the wire becomee hot; and at the time the intensity of the current diminishes, electricity is converted into heat. The identity of light and radiating heat has, moreover, been distinctly demonstrated, as well as that of electricity and magnetism. It may be considered certain, tben that but a single force exists, msnifesting itself to us under different aepects according to circumstances.

At the time when the different manifestatione of force were thought to be so many distinct entities, the disappesrance of heat, of light, and of electricity could only be accounted for by assuming a total snuihilation of these agenciea. On the other hand, eiuce hest, light, and electricity are slwaye everywhere found in Nature, besides their possible annihilation, some were led to conjecture the possibility of their creation and to seek for perpetusl motion. We have passed this period of errors; mathematical calculation as well as experiment demonstrates that force can neither be created nor destroyed. A constant ever-living force exists in the universe, manifesting itself sometimes in oue way, sometimes in snother, but the sum of which is absolutely invariable.

Should we then preserve these two entities, force and matter, se having a distinct exietence? I think not. Force and matter: these are abstract ideae serving to assist our comprehension of that which exists nnder a two-fold aspect. Accordingly, then, we should admit hut one thing, matter endowed with motion.

All these forces with which we are acquainted are but the resultant of the motions of matter, and differ from one another only in the nature of this motion.

Finally, then, minnte indivisible particles or ultimates grouped in atoms, molecules, and tangible bodies, each endowed with motion capsble of being communicated from one to another without the possibility ot the quantity of matter or motion being increaeed or diminished—such we hold is the grandest conception of the universe.—*Naguet, in the American Chemist.*

FILIFORM SILVER ARTIFICIALLY PRODUCED.—Native silver occurs frequnently as metallic threads or wires twisted in every direction, and often bent at sharp angles. Specimens of this filiform silver were exhibited, from Kongsberg, in Norway, associated with calc spar, and from Chili, associated with greenstone, and it wss shown that the metal was tough and non-crystalline. Precisely eimilar threads of silver were produced under the microscope by decompoeing a solution of nitrate of eilver with suboxide of copper. The white filamente shoot forth in every direction, and twist about or double back in their course; while the cuprous oxide becomes black, splitting up, in fact, into cuprio oxide and cupric nitrate. Most of these threads are so fine that their dismeter is only one-twenty-five thousandth of an inch, snd a gramme of such silver wire would stretch from London to Brighton, and many are much finer still. Sometimes these filaments will end in crystalline knobs, or crystals of silver will form upon them, as is not unfrequently the case in mineralogical specimens. Attempts to prepare them by means of other snbetances than suboxide of copper had not proved successful; but, as that substance is by no means a rare mineral, it wae thought that their formation might result generally from its action on silver salts in solution.—*Dr. J. H. Gladstone.*

DISCOVERY IN MAGNETISM.—Paget'e recent discovery of new forms of permanent magnete is a matter of much interest to electriciane. It is well known that it is impoesible to magnetize a plate except in the direction of ite greatest length, and that a equare cannot be made to show the magnetic action at all. This new discovery, however, ehowe thst by cutting slits nearly up to the middle of a eteel plate, a square plate in one piece can, with euch slits, he regularly magnetized. By this means even an oblong square can be regularly magnitized, and with as many poles as may be required, in a direction transverse to ite greatest length.

PREVENTION OF EXPLOSION OF FULMINATES.—In the working of fulminate of mercury in the manufacture of peroussion caps, dangeroue explosions frequently take place. These may he to a great extent prevented, by granulating and mixing the fulminate in vacuo. A mixture of cyanide of copper and chlorate of potash may be eubstituted for fulminate of mercury.—*Ph. Neumann.*

Stock Sales for Week Ending Nov. 7—S. F. Stock & Ex. Board.

NAMES OF COMPANIES.	Feet.	Shs. in ft.	FRIDAY. Shs	Prices.	SATURDAY. Shs	Prices.	MONDAY. Shs	Prices.	TUESDAY. Shs	Prices.	WEDNESD'Y Shs	Prices.	THURSDAY. Shs	Prices.	Tot'l Sh's Sold.	Advnc	Declin
Adama Hill.....¶			100	1¾											100		
Alpha.....*	300	20	180	50 @52½	210	53 @55½	87	54 @56			95	55 @57			532		
Alps.....*	800	37½	150	51¼	100	51½@ 53	200	51½@ 53			155	51½			605		
American Flag..§	2600	11½	415	13½@14	510	14 @14½	200	13¾@14			195	13⅞@14	500	13½@14⅜	1820	⅜	
Amador Tun§					500	8 @ 9	100	8 @ 8½							600		
Arkansas.....§			30	2½							230	3			260		
Arizona & Utah.*	1500	15½	1150	3½ @ 3¾	750	3¼ @ 3¾	740	3¼ @ 3¾			200	3			2840		
Belcher.....*	1010	10	385	110 @115	227	112 @ 115	275	112 @115			165	113 @ 116	325	110 @ 114	1457		1
Baltimore Con*.			870	2¾@ 3	650	2⅞	250	2¾							1772		
Bowery.....§	1000	30	100	2⅝	180	2					200	2			480		
Bacon.....*											10	65			10		
Buckeye.....*			150	1⅝@ 1¾	25	1¾	150	1¾@ 1⅞			25	2	200	2 @ 2¼	875	1¾	½
Best & Belcher..	224	100	50	6	100	6½	430	7 @ 7⅝			720	7¾@ 8¼	250	7⅞@ 7⅞	1550	1⅞	
Bellevue.....§	9000	2½	50	3			20	3			50	2¾	100	2¾	220		½
Belmont.....*			550	4¾@ 4¾	860	4½@ 5	150	4¾@ 4⅞			600	4½@ 4¾	1200	4 @ 4¼	3360		½
Chollar.....*	2800	10	235	6⅝@6⅞	100	6⅝@6⅞	415	6⅝ @6⅞			340	6⅞ @7	150	7@ 7⅛	1850	8	3
Caledonia.....*	5000	4	615	33¾@35	340	34¼@35½	410	35 @36½			765	32 @35	375	30½@32	2540		3
Cons. Virginia..*	1160	20⅜	200	75 @81	480	83 @ 85	310	85 @82½			105	82 @85	133	81½@82	1230	1	
Confidence.....*	130	192	980	12¾@14	260	13 @13½	190	13 @13⅝			180	13½@14	150	12⅞@13	1770		1
Crown Point....*	600	166⅔	135	123 @ 129	290	128 @ 132	200	125 @130			405	125 @ 129	160	124 @ 128	1190		1
Central .....*	70	357			100	4											
Calaveras.....§	3200	6¾															
Condor.....§													200	1¾@ 1¾	200		
Columbia.....*																	
Chapman.....§	700	40	25	1½													
Chief of the Hill	1000	30	250	7⅞			200	7			350	1⅞	100	1¾	1200		
Chief East Ex..§											855	5¾@ 6	2150	5½@ 6¼	3850		⅜
Cederburg.....†	1200	20	100	6¾											100		
Daney.....*	2000	12			50	1½	60	1¾			180	1½			290		
Eureka Cons...†	1000	30	620	21¾@22½	230	21 @21¾	1085	20¾@21¾			885	22 @22¾		23¼@24½	4795	2	
Eureka.....*	1600	132			55	15 @16	55	15			40	16		16	4660		3
Exchequer.....*	400	20	100	18½@19			45	20 @20½						20	165	1	
Eclipae.....*	70	357	160	11							30	11½		11½	245	½	
Empire Mill....*	75	16	130	9½@ 9¾	510	9½@ 9¾	125	9½			240	8⅞@ 9¼	70	8¾@ 8¾	1075		1
Excelsior.....§	4500	2⅝															
Gould & Curry.*	1200		57	197 @200	34	197 @ 200	98	220 @240			162	240 @ 250	82	220 @ 235	433		35
Golden Chariot.†	750	14½			10	11	110	13 @12¾			120	13 @14			240		
Globe.....*	1600	12½			110	2 @ 2½	100	2			90	1⅞	290	1¾	590		
Con.Gold Hill G		40					50	5			20	6 @ 6¼	10	6	80		
Hale & Norcross*	400	4	45	83 @85			1585	86			115	88 @89			2254	4	
Hunn & Hunt..§	3600	8½	1655	6 @ 6¼	500	6⅜@ 6¼	1050	6¼@ 6⅝			260	5⅝@ 6	1235	4¾@ 5	4700		1½
Hermes.....§					58	9½	50	9½			60	10			168		
Ida Elmore.....‡	1300	17½	60	8 @ 8¼							50	8	50	8¼	150		
Imperial.....*	184	543⅜	685	11½@12¼	750	11¾@12	555	11¾@12			1750	11 @11¾	1135	11 @11¼	5185		⅜
Imperial S.....§	1000	40	5	12½	50	13⅜	600	13½@ 13¾			625	13½@ 13¾	450	13¼@ 13⅞	1730	⅜	
Independent....‡	1800	14															
Ivanhoe.....§	600	5	130	2 @ 2¼	700	2	300	1⅞							1130		
Julia.....*	2000	15	675	5¾@ 5⅞	1795	5¾@ 5¾	360	5¾@ 5½			1255	4¾@ 5¼	515	4¾@ 4¾	4600		⅞
Justice.....*	3000	7	415	7 @ 7¼	250	8⅝@ 9	200	8¼@ 9			85	8¼	60	8¾	1008		¼
Kentuck.....*	95	21															
Kentucky.....§		20															
Knickerbocker.*	1200	20	180	5⅛@ 5¾	180	5¼@ 5½					100	4½@ 4¾	200	5½@ 5⅞	660	⅜	
Mammoth.....*	1800	42½															
Meadow Valley..		112½	1000	25¼@27½	2610	26¾@27½	2000	25 @26			2030	24 @25	6375	23½@25	14015		2¼
Mahogany.....‡	720		40	87½@ 9	50	9					1000	9½@ 9¾	155	10	1245		¼
Mocking Bird....																	
McMahon.....*		40															
Newark.....§	800	12	450	5¼@ 5½	355	5 @ 5¼	325	5 @ 5⅛			310	4¾@ 5			1420		
Ophir.....*	1400	26⅔	355	69½@63½	155	60 @61	20	59			245	59¾@61½	150	58 @59	955		4½
O. H. Treasure..‡	800	10					255	4 @ 4¼			25	4 @ 4⅜	610	3 @ 3¼	900		
Overman.....*	12	0 12½	75	76 @78	55	76 @78½	20	79 @80					45	79 @81	195	3	
Occidental.....*	800	20			700	1½	490	1⅛@ 1⅜			1200	1⅛@ 1¾	420	2	2810		
Pioche.....§	1000	16⅔	150	16 @17			185	16½@17			175	15 @16	330	13½@14	850		3
Pioche West....§		30															
Page & Panaca..§	240		320	2½@ 2¼	230	2 @ 2⅜	700	2 @ 2½			325	2	25	2	1600		¾
Pea Vine.....§	1000		400	55c	200	60c					200	65 @70c	410	75c	1210	20	
Phœnix.....*		2¾	550	2¾@ 2⅞	295	2¾	850	2¾@ 2⅞			734	2¾	100	2⅝@ 2¾	3129		½
Raymond & Ely.*	4000	20	240	140 @145	725	141 @ 147	160	141 @145			295	138 @ 141	330	131 @ 135	1729		12
Savage.....*	800	40	270	103 @108	310	105 @ 109	640	105 @110			380	101 @ 107	130	96 @ 100	1730		8
Seg. Belcher...*	160	7½	10	85			50	85					10	86	70		1
Sierra Nevada..*	3000	3	184	16½@17	80	16½@16¾	50	16¾@17			240	16¾@16½	390	15½@16½	944		½
Senator.....*			180	1 @ 1¼			100	1			500	75c @1 00	300	90c @1 00	1080		¼
Succor.....*	7600	12½	25	4¾			30	4¾			10	4¾			125		
Silver Bill.....*		430½	410	8¾@ 9	1535	8¾@ 9¼	1035	9 @ 9¾			380	8⅞@ 9¼	225	8 @ 8½	3585		½
South Chariot..‡	660																
Trench.....*		20	250														
Wash. & Oreole.§	200	150	100	4											100		
Woodville.....*	1400	20	2180	6 @ 7	1440	7¼@ 7¼	1420	7¼@ 7½			735	7¾@ 7¾	1125	7½@ 7¾	6860	¾	
War Eagle.....‡	1000	10			300	4½									300		
Utah.....*	1000	20															
Yellow Jacket..*	1200	25	400	112 @115	210	115 @ 118	40	117 @121			125	120 @ 125	198	120 @ 124	971	9	
Yule Gravel....*	400	25	100	11½							100	12			200		

NOTE.—†—California. *—Washoe. ‡White Pine. §—Ely District. ¶Eureka District. ‖—Idaho. ‖—Nearly.?—Over.

S. F. Stock and Exchange Board.

THURSDAY, November 7th, 1872.

The sales at the San Francisco Stock Board for the week ending Wednesday, October 30th, amounted to $2,361,000. Business in Mining Stocks hae begun to improve again, after a depression which has lasted eeveral weeks. Work hae beeu temporarily suspended on some of the Waehoe minee and mills, on account of a scarcity of wood aud timber, caused by the interruption of traffic on the Virginia & Truckee Railroad by the tunnel fire. This will soon be remedied and everything will go on as usual. The Raymoud & Ely mine has declared a dividend of $7 per share for this month, amounting to $210,000, but we have not heard from any of the Washoe mines as yet in this respect, although it is high time if promises are to be depended on. Against this dividend there are already nine asseements, viz: Alamo, Washoe, 25 cents; Schell Creek M. Co., Schell Creek, 10 cents; St. Patrick, Placer Co., Cal., $2; War Eagle, Idaho, $2; Star Consolidated, Eureka District, 25 cents; New York Consolidated, Washoe, 25 cents; Julia, Washoe, $2.50; Arkansas, Ely District, 50 cents; and Pioche, Ely District, $1.

On Friday the market was rather quiet, but Crown Point rose $3; Belcher, $4; Jacket, $3; Empire Mill fell $1; Caledonia, $2; Confidence, $1; Chollar, $5; Ophir, $3.

Saturday stocks were firmer, most kinds showing a elight improvement. From the highest ratee on Friday morning, Consolidated Virginia advanced $8; Alpha and Yellow Jacket each $4; Crown Point, $3; Chollar-Potosi, $2.50; Belcher and Hale & Norcross, each $2; Savage and Woodville each $1; Golden Chariot declined $2; Eureka, $1.50; Eureka Consolidated and Ophir each $1.

Monday Virginia Stocks were lively, the riee in Gould & Curry in particular being the feature; it sold $40 higher than on Saturday.

Tuesday being election day there was no session of the Board.

Wednesday the market was rather active, bnt pricee were irregular as compared with Monday; Belcher wae $1 higher; Chollar, $2; Ophir, $1; Yellow Jacket, $4; Gould & Curry, $3; Caledonia was $4 lower; Con. Virginia, $1; Empire and Imperial, each 50 cents; Savage, $4; Raymond & Ely fell $5; Pioche, $2; Meadow Valley, $1.

To-day, stocks were generally weak and pricee irregular. The pricee of the different deecriptione as compared with last week'e ealee will be seen by reference to onr Stock Tables.

Below are items of interest from prominent mines later than that in our "Mining Summary."

Crown Point.—The developments on the 1300-ft. level are excellent.

Chollar-Potosi.—Still prospecting with no new developments ae yet.

Belcher.—They have again commenced to ship ore to the river mills. The usual amount of ore is coming out and about 900 tons are on the dumps in addition to what has accumulated at the different mills. The assays run very high.

Hale & Norcross.—During week euding Nov. 2, 297 tons of ore were extracted; 379 tons sent to mills, and 1,456 remain on the dumps.

Raymond & Ely.—The total bullion shipments for October amounted to $344,411, equal to $11,110.03 per day. On November account $34,847 have been sent down, equivalent to $11,615.60 per day. The mines are looking well as usual, with a slight improvement in the west end of the Panaca.

Eureka.—A letter of the 2d inst. saye the clean-up, for the last eix day's run of 15 stamps, is 1,000 ounces of amalgam.

A good body of ore ie expected to be developed in the Buckeye shortly. From the Amador Tunnel some very rich ore is coming out. The vein in the second level of the Adams Hill is better than ever. Four of the Eureka Consolidated Company's furnaces are running. Splendid ore is coming out of the east stope of the American Flag; 200 tons of ore on dump. The Superintendent of the Huhn & Hunt sent down $8,269 in bullion on the 2d inst.

Mining Suit.—Charles F. McDermot has inetituted suit against the Raymond & Ely Mining Company and allegee that he is a tenant in common with the defendant aud owns 800 feet of 1,350 feet of the Raymoud & Ely Mine, and that the defendant hae excluded him and appropriated all the proceede of the mine amounting to upwards of $1,500,000. He aeke that an injunction be iesued to reetrain the Company from paying out dividende of its stock.

OUR MINING SHAREHOLDERS' DIRECTORY.

ASSESSMENTS.

Name of Co.	Location.	Secretary.	S.F.Office.	Assm't.	Levied.	Deling't.	Sale.
Alamo G. & S. M. Co.	Washoe.	G. W. R. King.	21 Nov. 2		Dec. 5		Dec. 26
AMAZON S. M. CO.	Ely District.	M. J. McManus.	609 Sacramento St.	50	Oct. 27	Dec. 2	Dec. 23*
Alpine G. M. & M. Co.	Amador Co.	W. L. Usick.	438 California St.	1.50	Oct. 16	Nov. 16	Nov. 30
ALTONA G. M. CO.	Grasa Valley, Cal.	David Wilder.	28 Merchants' Ex.	10	Oct. 3	Nov. 2	Nov. 25*
Arkansas M. Co.	Ely District.	J. H. Applegate.	729 Montg'ry St.	50	Nov. 6	Dec. 16	Jan. 10
AUBURN G. M. CO.	Placer Co., Cal.	Geo. W. Dixon.	corner Mont. & Cal.	25	Sept. 13	Oct. 14	Nov. 6
Bellevue M. Co.	Placer Co., Cal.	T. F. Cronise.	438 California St.	75	Oct. 12	Nov. 13	Nov. 30
Bowery Cons. M. & M. Co.	Ely Dist.	C. E. Elliott.	419 California St.	1 00	Sept. 17	Oct. 24	Nov. 10
Buckeye M. Co.	Washoe.	Chas. H. Fish.	419 California St.	2 00	Oct. 28	Dec. 2	Dec. 23
Cederburg, 1st S. Extension.		J. N. Webster,	506 Montgomery St.	4	Sept. 11	Oct. 12	Nov. 12
Chapman M. and M. Co.	Ely Dist.	E. Swift.	415 Montg'ry St.	50	Sept. 16	Oct. 24	Nov. 15
Condor M. Co.	Ely District.	H. C. Kibbe.	419 California St.	1 00	Sept. 12	Oct. 23	Nov. 13
Consolidated Virginia.	Washoe.	D. T. Baley.	401 California St.	3 00	Sept. 26	Nov. 1	Nov. 21
El Dorado M. Co.	Amador Co., Cal.	E. McFadden.	Express building.	50	Oct. 4	Nov. 10	Nov. 25
Eliza. & M. Co.	Siskiyou Co., Cal.	T. F. Cronise.	438 California St.	1 00	Oct. 11	Nov. 12	Nov. 28
Emerald Hill M. Co.	Utah.	F. Madge.	Merchants' Exchange.	50	Oct. 17	Nov. 20	Dec. 17
Empire M. Co.	Idaho.	C. F Baicom.	426 Montgomery St.	50	Aug. 5	Sept. 6	Sept. 30
Empire M. & M. Co.	Washoe.	W. E. Dean.	419 Cal. St.	1 00	Oct. 8	Nov. 10	Dec. 2
EXCELSIOR S. M. CO.	Nye Co., Nev.	W. A. Kollmyer.	640 Washington St.	10	Sept. 26	Oct. 29	Nov. 22
Gen. Lee S. M. Co.	White Pine.	C. F. Schultz.	426 Montg'ry St.	10	Oct. 29	Dec. 3	Dec. 27
GOLDEN RULE M.Co.	Tuolumne Co.	J. B. Russell.	432 Montg'ry St.	50	Nov. 2	Dec. 3	Jan. 4*
Granite Tunnel M. Co.	El Dorado Co.	W. G. Holmes.	443 California St.	6	Oct. 1	Nov. 5	Nov. 18
Greenville M. Co.	Plumas Co., Cal.	H. C. Kibbe.	419 Cal. St.	50	Oct. 1	Nov. 5	Nov. 26
Hale & Norcross M. Co.	Washoe.	J. F. Lightner.	438California St.	5 00	Oct. 18	Nov. 21	Dec. 11
Howard Hill G. M. Co.	Nevada Co.	J. L. King.	411 California St.	1 00	Oct. 22	Nov. 21	Dec. 16
Ida Elmore M. Co.	Idaho.	Wm. Willis.	419 California St.	2 50	Oct. 25	Nov. 30	Dec. 21
Imperial M Co.	Washoe.	W. E. Dean.	419 California St.	1 00	Oct. 1	Nov. 6	Nov. 29
Independent G. M. Co.	Butte Co., Cal.	G. T. Grimes.	240 Montgomery St.	40	Oct. 15	Nov. 19	Dec. 10
INDIAN G. & S. M. Co.	Virginia City, Nev.	David Wilder.	28 Merchants' Ex.	50	Oct. 19	Nov. 23	Dec. 16*
Julia G. & S. M. Co.	Washoe.	A. Noel.	419 California St.	2 50	Nov. 6	Dec. 10	Dec. 28
Justice M. Co.	Washoe.	R. Wegener.	414 California St.	2 00	Oct. 2	Nov. 6	Nov. 27
Kentucky M. Co.	Ely District.	J. P. Cavallier.	509 Cal. St.	50	Oct. 4	Nov. 9	Nov. 13
KING OF FLAT M. CO.	Tuolumne Co.	R. Cornell.	220 Clay St.	3 00	Oct. 18	Nov. 21	Dec. 10*
Knickerbocker M. Co.	Storey Co., Nev.	Henry Boyle.	Stevenson's Build'g.	1 00	Oct. 7	Nov. 9	Nov 28
LADY FRANKLIN G. & S. M. CO.	Cal.	J. S. Luty.	507 Montgomery St.	50	Sept. 24	Oct. 26	Nov. 16
Lemon M. & M. Co.	Eureka District.	J. T. Milliken.	606 Merchant St	1 00	Oct. 26	Nov. 30	Dec. 20
LOUISE M. CO.	Lincoln Co., Nev.	David Wilder.	302 Montg'ry St.	50	Sept. 14	Oct. 18	Nov. 9
Mahogany M. Co.		W. Evans.	Express Building.	2 00	Sept. 25	Nov. 4	Nov. 20
National M. Co.	Nye Co, Nev.	B. B. Miner.	415½ California St.	50	Sept. 26	Oct. 28	Nov. 18
Newark S. M. Co.	Ely District.	D. T. Bagley.	401 Cal. St.	75	Sept. 24	Oct. 30	Nov. 23
NEVADA L. & M. CO.	Elko Co., Nev.	Wm. H. Watson.	302 Montg'ry. St.	8	Oct. 1	Nov. 10	Nov. 23*
New York Con. M. Co.	Washoe.	H. C. Kibbe.	419 Cal. St.	25	Nov. 6	Dec. 12	Dec. 30
NOONDAY S. M. CO.	White Pine.	Chas. H. Fish.	419 California St.	20	Oct. 11	Nov. 15	Dec. 4*
OHIO CONS. O. M. CO.	Calaveras Co.	W. A. Knapp.	432 Montg'ry St.	10	Sept. 24	Nov. 2	Nov. 25*
O. H. Treasure M. Co.	White Pine.	D. A. Jennings.	401 Cal. St.	1 50	Oct. 3	Nov. 15	Dec. 6
Ophir S. M. Co.	Washoe.	E. F. Stone.	Merchants' Exchange.	5 00	Oct. 23	Nov. 26	Dec. 13
Pacific Coal M. Co.,	Contra Costa Co.	A. Lachman.	First and Market.	10 00	Sept. 25	Nov. 13	Nov. 30
Panper M. Co.	Idaho.	J. L. King.	411 California St.	50	Oct. 1	Nov. 19	Dec. 16
Peavine S. M. Co.	Ely District, Nev.	C. F. Baicom.	426 Montgomery.	25	Oct. 11	Nov. 20	Dec. 16
Peter Walter, M. Co.	Placer Co., Cal.	T. J. Owens.	Express Building.	50	Oct. 21	Nov. 26	Dec. 17
Picton M. Co.	Washoe.	S. Phillips.	415 Montgomery St.	12½	Oct. 18	Nov. 18	Dec. 6
POCAHONTAS M. Co.	El Dorado Co.	T. J. Jennings.	401 Cal. St.	50	Sept. 17	Oct. 24	Nov. 18
Pioche S. M. Co.	Ely District.	C. E. Elliott.	419 Cal. St.	1 00	Nov. 6	Dec. 12	Jan. 6.
Rising Star M. Co.	Idaho.	Wm. Willis.	419 California St.	1 00	Oct. 28	Dec. 3	Dec. 23
Schell Creek M. Co.	Schell Creek, Nev.	P. W. Van Winkle.	301 Cal. St.	10	Nov. 1	Dec. 3	Dec. 23
Shipley M. & M. Co.	Placer Co., Cal.	W. L. Usick.	438 California St.	1 00	Oct. 16	Nov. 16	Nov. 30
Senator S. M. Co.	Washoe.	Henry Boyle.	Stevenson's Building.	50	Oct. 29	Dec. 2	Dec. 21
SILVER WAVE M. CO.	White Pine.	J. W. Clark.	418 Cal. St.	1 00	Sept. 21	Oct. 26	Nov. 25*
St. Patrick M. Co.	Placer Co., Cal.	D. A. Jennings.	401 Cal. St.	2 00	Oct. 21	Dec. 3	Dec. 24
STATE OF MAINE M. Co.	Amador Co.	H. B. Congdon.	306 Montgomery St.	5	Oct. 17	Nov. 26	Dec. 16*
Star Consolidated M. Co.	Eureka Dist.	G. R. Swinney.	320 Montg'ry St.	25	Nov. 1	Dec. 6	Dec. 27
Succor M. & M. Co.	Washoe.	W. H. Watson.	302 Montg'ry St.	1 00	Sept. 20	Oct. 11	Nov. 21
Tecumseh G.S & C.M.Co.	Calaveras Co.	F. J. Herrman.	634 Washington St.	25	Oct. 10	Nov. 16	Dec. 6
War Eagle M. Co.	Idaho.	C. F. Baicom.	426 Montg'ry St.	2 00	Nov. 4	Dec. 10	Jan. 6
Washington & Creole M. Co.	Ely Dist.	F. D. Cleary.	Merchant St.	50	Sept. 9	Oct. 19	Nov. 11
Yuba Gravel M. Co.	Nevada Co., Cal.	J. S. Gordon.	108 Battery St.	25	Sept. 17	Oct. 21	Nov. 11

MEETINGS TO BE HELD.

Name of Co.	Location.	Secretary.	Office in S. F.	An'l or Sp'l.	Date.
Consolidated Amador.		D. D. Colton, Trustee.	402 Montg'ry St.	Annual.	Nov. 16
Hayden Hill M. Co.		Wm. H. Knight.	331 Montg'ry St.	Annual.	Nov. 9
Heckerdom M. Co.		L. Leorne.	913 Jackeon St.	Special.	Oct. 26
Lemon M. & M Co.	Ely District.	J. T. Milliken.	606 Merchant St.	Special.	Nov. 26
Bacon M. & M. Co.	Washoe.		414 California St.	Special.	Nov. 19

LATEST DIVIDENDS—Within Three Months.

Name of Co.	Location.	Secretary.	Office in S. F.	Amount.	Payable.
Belcher M. Co.	Washoe.	H. C. Kibbe.	419 California St.	$3.00.	Sept. 10
Black Diamond Coal Co.	California.			½ per cent,	Oct. 1
Cederburg G. M. Co.	California.	D. M. Bokee.	420 Montgomery St.	50c	Oct. 31
Crown Point G. & S. M. Co.	Washoe.	C. E. Elliot.	419 California St.	$3 00	July 5.
Eastport Coos Bay Coal.	Oregon.	I. L. Pool.	Merchants' Ex.	$5 00	Oct. 12
Keystone Quartz M. Co.	California.	L. Veearia.		$0	July 10
Mahogany G. & S. M. Co.	Idaho.	T. J. Owens.	402 Mont'gry. St.	$1 50	Aug. 7
Meadow Valley M. Co.	Ely Dist. Nev.	T. W. Calburn.	419 California St.	$1 00	June 20
Raymond & Ely M. Co.	Ely Dist., Nev.	A. J. Moulder.	419 California St.	$7 00	Nov. 11
Pioche S. M. Co.	Ely Dist., Nev.	C. E. Elliot.	419 California St.	$1 00	Aug. 10

——* Advertised in this journal.

Mining Summary.

The following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

California.

ALPINE COUNTY.

Tarshish.—Alpine *Chronicle*, Oct. 26: Work has been resumed, and Mr. Hunter ie having the mine, mill, furnace, etc., examined by experts from Virginia.

Globe.—Work will be resumed on Monday next. A contract has beeu let for contiuuing the tunnel 100 ft. from its present face.

I. X. L.—The erection of the buildings for the hoieting works and carpeutere will be commenced on Monday.

AMADOR COUNTY.

Progressing.—Jackson *Ledger*, Nov. 2: The large new shaft on the Kennedy is progreesing fiuely. The workmen are down 20 odd ft. The Company intend running a tunnel iu to etrike the lead when they reach 100 ft. The mill is kept running day and night, and the ore is averaging about $22,000 per month.

CALAVERAS COUNTY.

Gwin Mine.—Calaveras *Chronicle*, Nov. 2: Last Saturday the regular, fortnightly, $10,000 clean-up was made.

INYO COUNTY.

Lida Valley.—Inyo *Independent*, Oct. 26: The Lida Belle shipped, during the past Summer, $43,000 in bullion—the proceeds of a 5 stamp mill, not in operation more than one fifth of the time. They have on the dumps at the mines $30,000 worth of secoud class ore, and have recently purchased the Washington Mill (au 8 stamper). Mr. Hickey calculates to have it in place by Dec. 1st.

To be Rebuilt.—Belshaw & Co. have a new engine and other machinery on theway to Cerro Gordo, to take the place of that in their furnace, a good portion of which is to be rebuilt and put in coudition for work.

KERN COUNTY.

Eclipse.—Havilah *Miner*, Oct. 26: This mine is turning out a large quautity of first quality rock. The mill is kept in constant operation; 22 miners are engaged.

Big Pump.—The big steam pump for the Joe Walker will arrive on the 10th of next month.

Big Blue Mine.—Rock of exceeding richness is being taken out in large quantitiee. The mills were etarted up last Wednesday and are doing their beet at a 150-ton dump of $45 rock.

Bacchus.—A run of $33 rock is being made at the mill of this mine; 50 tone of rock will be put through thie week.

Papoose.—The ledge has widened 2 ft. and now meaeures 5 ft. from wall to wall, with an immense body of rock in sight, valued at from $22 to $40 per ton.

NEVADA COUNTY.

The Situation.—G. V. *Union*, Nov. 3: The Iudependence tunnel is in 250 ft. The Dairy Hill shaft is down 280 ft. or 55 ft. below the second level. The shaft will be continued down 25 ft. further wheu the third level will be opened. Iu the bottom of the shaft the ledge is over a foot in thickness. In the north part of the second level there is a large ledge. In the south of the level the rock is very good, being capable of yielding by mill process about $60 per tou.

Reese Mine—On Randolph Flat is yielding well. The miue averagee about $50 to the pan.

The Idaho—Will etart up 35 etamps this week. There ie a great quautity of ore broken up iu the miue, ready to be sent to the surface.

In the Coe the shaft is to be put down to a much greater depth and thorough explorations are to be made.

The Sappho Co. have run a tnnnel from the Wolf creek side, into the hill 485 ft. The tuunel has cut a ledge which is over 3 ft. in thickness and which prospects well in free gold hy the use of a hand mortar.

Green Mountain—Will have its 5 stamp mill in operation this or next week.

The Knight of Malta—Is being prosecuted with energy. The ledge in the shaft is about 4 ft. wide and shows liberally in free gold and is heavy with sulphurets.

The Empire—Coutinues to send out rich ore. The batteriee and the plates at the mill indicates a good clean up.

The Eureka—Is being explored. A cross cut from the lowest part of the shaft has struck into a crevice of 3 ft. between walls and the crevice is filled with ledge matter.

Cunningham.—Nevada *Transcript*, Nov. 3: Tunnel completed 600 ft., aud ledge struck 80 ft. helow the old works. Since they struck the ledge they have taken out 17 tons of rock, which paid $25 per ton.

SAN DIEGO COUNTY.

Bullion.—San Diego *Union*, Oct 26: Bullion amounting to $3,000 was shipped on the steamer Pacific to S. F.

Owen's Mine.—Mr. DeFrees exhibited to us yesterday, 4 bars of bullion valued at $4,000, from Owen's rock.

TUOLUMNE COUNTY.

Putting up a Mill.—Sonora *Independent*, Nov. 2: The Vau Trump quartz claim, Fox Gulch, has been honded to a S. F. Co. for $6,000. A mill has been purchased and moved to the locality, near Summit Pass.

Excelsior.—Sonora *Democrat*, Nov. 2: Work on the adit tunnel is progressiug at the rate of 8 ft. per day, aud when completed will tap the old works at 210 ft. vertical depth and be 1,000 ft. long. The Co.'s new eteam mill will start up on Monday to crueh the ores taken ont in extending the adit level.

Nevada.

RAILROAD DIST.—Elko *Independent*, Oct. 26: The Last Chance looks well. Over 1,000 tons of good ors on dnmp.

The Ella is yieldiug 10 tons of 30 psr cent. copper ore per day.

The Shoo Fly Co. recently tapped their vein hy tunnel 130 ft. below the snrface. The ore is very rich and from 5 to 7 tons per day is being extracted.

The Bob Hnnter is being vigoronsly worked, and shows a fine hody of copper ore. The Hussey furnace fired np on Saturday to dry out.

EUREKA DISTRICT.

SILVER CONDOR.—Eureka *Sentinel*, Oct. 29: This shaft has hesn sunk 20 ft. and a very good hody of ors struck.

ELY DISTRICT.

REVIEW—BULLION.—Ely *Record*, Oct 27: The supply this week reaches $131,782.71.

MEADOW VALLEY.—Though the mill only commenced to run regularly on the 15th of this mouth, the product of hullion will reach $110,000 for Oct. At the Snmmit or No. 5 shaft sinking is progressing rapidly. From the workings connected with No. 3 shaft, much ore of a very high grade is being produced.

EXCELSIOR.—During the past week exceedingly rich ore has been takeu from a winze that is being sunk from the 150-ft. level in the easterly drift. The winze is down 80 ft. and reveals a strong, well-defined ledge, 3 ft. thick, all pay ore, with a streak of about 6 inches wide of decomposed chloride, which assays over $2,500. In the other parts of the mine stoping is going on in the upper and lower levels, and about 15 tone of ore are being raised and shipped daily. The returns of hullion from the Excelsior ore average about $12,000 weekly.

RAYMONN & ELY.—Connection has been made from the 523 ft.-level of the Lightner shaft with the vein. The shipments for the last 3 days of bullion reach $36,500.

HUHN & HUNT.—Two hundred tons of ore have heen eent to the Amorican Flag mill and 300 tons are on dump ready for shipment. At the mine a new shaft is being sunk and is 40 ft. deep from the level of the tuuuel. The ledge shows all the way down 2½ ft. in width with an oar streak of about 10 inches at the bottom. The upper etopes are open for about 200 ft. and show well. A winze haa heen sunk 123 ft. from the turn-table, from which drifting and stoping has boen commenced. Here the ore shows about 2 ft. in width, is rich and improving as depth is attained. One huudred ft. south of the turn-table a small ledge wae cut through last spriug, and at that time but very little was thought of it. A short time ago drifting was commenced. Twenty ft. was ruu and the ledge wideued. A winze was then sunk 5 ft. and the ledge opened 2 ft. in width, from which assays went as high as $525 to the ton.

NEWARK.—The main shaft is down 440 ft. A cut will be made to tap the ledge at the depth of 375 ft. The east drift in 40 ft., ehowe porphyry to the face where quartzite begine to show. The ledge matter shows at the opening of thia drift some 20 ft. in width. A drift has heen run 60 ft. in a westerly direction. A cut wae made in the south side of this drift, to connect with a winze that was started from the 225-ft. level. Fine ore shows where the winze cuts the main ledge. Some 15 tons have been extracted, and will be hoisted soon. In this westerly drift the pay ore varies from 4 to 12 inches. Stoping has been commenced at the opening of this drift.

ARKANSAS.—The incliue shaft hae reached 350 ft., with a strong vein of ore at the bottom. A station will be shortly opened at thie point, and levele commenced. In the 120-ft. and 250-ft. levels the veiu ie being etoped out. It is 3 ft. in width and will average large figures.

IVANHOE—The working shaft has reached a depth of 200 ft. Hoisting machinery for use in this shaft is on the way from S. F. In the old working a winze ie being eunk from the 300-ft. level of the incline, and shows a 3 ft. ledge.

PORTLAND.—The vein shows a large stratum of unusually rich ore.

PAGE & PANACA.—Sinking the main ehaft, which is down 470 ft. Laet week a ledge of soiue size wae passed through, but not bearing ore in any quantity. The 360-ft. level is 165 ft. from the shaft.

CHAPMAN.—A vertical shaft ie being sunk which ie 420 ft. deep. The 360-ft. level is looking favorably.

CHIEF OF THE HILL.—Laet week about $7,000 in bullion wae shipped making a total of $24,000 since crushing was commenced. The third level is in good ore at the face. The winzes being sunk from this level are developing ore of an excellent character.

SUNBEAM.—The hoistiug machinery ie working satisfactorily.

PORTLAND EAST EX.—The ehaft is down 40 ft., aud for the last 5 ft. has been in ledge matter, with flattering prospects.

AMADOR TUNNEL.—The winze is being ennk on the blind ledge cut by the tunnel. This hae attained a depth of about 50 ft., and shows ore throughout its depth. About 30 feet from the level of the tunnel, a station is being opened and a tunnel commenced.

HERMES.—The work of einking the vertical shaft is progressing rapidly. A depth of over 500 ft. has been attained.

PIOCHE PHENIX.—The newehaft has attained a depth of 125 ft., and is well and eecurely timbered in two compartments. Sinking is still progressing. In the old works the incline shaft ie 380 ft. deep and etill sinking.

CHIEF EAST.—A winze haa heen sunk from the drift which was run from the bottom of the inclins. This winze is 20 ft. deep, and at the bottom shows the ledge to be widening and carrying ors of su extremely high grade.

MAZEPPA.—Sinking on the incline, which frequently cnts ore seams. It is 90 ft. in depth. Hoisting works for this mine have been ordered at S. F.

THE PACIFIC TUNNEL has attained a total length of 1,020.

JOLLY TRAVELER.—The shaft is 120 ft. deep. At the bottom sevsral strata of ore are heing cnt.

MARION.—The drift from the bottom of the shaft is in ahout 75 ft. The shaft is 90 ft. in depth. The ledge shows well in the drift and the assays are improviug.

ORLEANS.—The incline is 180 ft. in depth, is bcing straightened and timbered.

REESE RIVER.

BELMONT. — Resse River *Reveille*, Oct. 26: COMBINATION has had reduesd 2 lots of fins ore from their Transylvania; first lot of 60 tons yielded $375 per ton, second of 18 tons yielded $450 per tou. Working 25 men.

BELMONT CO.— Continuing levels north and south, taking out some good ore from levels above water.

MONITOR CO. — After running lower level north 100 ft. from south incline cut across the vein towards foot-wall, drifted 15 ft. and cut through a 3-ft. veiu of very rich horn silver ore.

EL DORADO SOUTH CON. CO. — The large chimneys, hoth north and south, on the 340-ft. level looks better than ever. Same level ie being continued southerly through the ore hody. The new 400-ft. level is being pushed through spleudidly. In the Arizona a 2-ft. strata of chloride ore was cut into in the 2d level yesterday.

WASHOE.

LOCAL SUMMARY.—Gold Hill *News*, Nov. 2: IMPERIAL-EMPIRE.—A large force ie employed on the surface work for the new pumping machinery. The incline ie down 45 ft. below the 1700-ft. level, aud the einking makiug fair progress. The main south drift on the 1700-ft. level is making excellent headway, the face in soft porphyry. The maiu south drift on the 1600-ft. level is pushed steadily ahead, the face in a mixture of quartz and porphyry. The main drift on the 1500-ft. level is driven ahead, the face in porphyry and quartz.

HALE & NORCROSS. — Work is stopped for want of wood.

CON. VIRGINIA. — Surface work for the new machinery is almost suspended on account of a lack of timber, caused by the railroad blockade. The maiu west drift on the 1167-ft. level is pushed vigorously ahead, the face in porphyry. Prospecting the 500-ft. level is continued. Sinking the incline is making fair progress.

GOULD & CURRY.—The incline down 60 ft. below the 1600-ft. level is making good headway. The main east drift on the 1500-ft. level is in 353 ft., the face in porphyry. The east cross-cut from the eouth drift at the 10th station is in 60 feet, the face in porphyry and quartz. The main north drift at the 10th station is in 219 ft.

BUCKEYE.—A prospecting drift north from the first etation developed a new body of fine ore during tho week. The drift at the fourth etation is in 33 ft., and will have about 30 ft. more to run to reach the ledge. The mill was started up last Monday, working finely.

CALEDONIA.—The main west drift on the 400-ft. level of the new worke ie driven ahead, the face is a mixtnre of clay, quartz and porphyry. The uorth drift in the 400-ft. level ie pushed steadily. The prospecting drift eouth on the 300-ft. level of the old works is in 300 ft., the face in clay.

SAVAGE. — Daily yield 160 tons, worth $28 per ton. Sinking the incline ie making good headway. The ore-breasts on the 1500-ft. level are opening up finely, the ore gradually improving in quality. The chute at the 1600-ft. station is about complete, so that drifting ou that level can soon be prosecuted.

JULIA.—Sinking the ehaft is progreesing rapidly; it is down 200 ft. below the 800-ft. level. The main eaet drift is in 240 ft., being driven vigorously ahead. The machinery works splendidly.

SIERRA NEVADA.—The prospecting drifts on the 500-ft. level are pushed steadily ahead. The mill ie kept steadily ruuning on ore from the upper and middle portions of the old mine. The different ore-breaete are looking well.

WOODVILLE. — The fine body of ore shows better as further developed, and the yield of the mill ie satisfactory.

CROWN POINT.—The ore-breasts at the 1100 and 1200-ft. levels hold out wonderfully. The developmente at the 1300-ft. level are more promising than ever.

YELLOW JACKET. — As eoon as the water is drained out of the lower levels prospecting at that point will be resumed. Drifting and cross-cutting at the 1300-ft. level progresses.

SILVER HILL. — Both the north and south prospecting drifts at the first station are in ore, with a decided improvement in quality during the week.

CHOLLAR-POTOSI.—The main shaft ie repaired to the head of the incline. The surface work on the new machinery is completed. The daily yield has been iucreased to about 166 tone worth $29 per ton.

BELCHER.—Hoisting through the new incline and shaft progresses. The various ore stopee are looking and yielding finely.

OVERMAN.—The surface work for the new machinery ie completed.

INSURANCE.—The incline is down 20 ft., and the ledge gradually widening out, the full face of the incline ie in good ore.

OCCIDENTAL.—A new contract hes been let and the work of driving the main drift ahead to the northward, is being prosecnted with vigor.

KNICKERBOCKER. — Good progress is being made with the main west drift which is in 258 ft., cntting streaks of qnartz and clay.

UTAH.—All work is stopped for the present, it being impossibls to obtain the necessary snpply of wood.

CROWN POINT RAVINE.—Clsaning out and repairiug tho shaft is progressing finely.

WHITE PINE.

BULLION.—White Pine *News*, Oct. 26: The shipment dnring the past week, was $12,892.59.

TREASURE HILL MINES—EBERHARDT & AURORA MINES.—The Eberhardt and Blue Bell shafts connect with the Atwood shaft for ventilation, and are sinking to the depth for better ventilation in the Blue Bell shaft. In the Ridsdale and De Pass chambers the lower tunuel of the South Aurora is conuected with the North Ridsdale shaft, and are continuing ths drift to the North to connect the workings with the Lady's chamber at the North end of the North Aurora, and are still working in the sonth chamber from the Lady's chamber.

BEECHER CONS.—In the Beechsr works it is snpposed a hody of ore has heen struck.

O. H. TREASURE.—The various workinge are looking well. The Wheeler tunnel is being pushed ahead in spar and vein matter, which is dipping downward.

SUNBEAM.—Sinking in Moscow ehaft, and running a little to the south in quartz. The mine shows some improvement.

MAMMOTH.—The hottom of the shaft is looking well, and down about 55 ft. in good ore.

SILVER PLATE.—Running in tunnel, which ie over 50 ft. deep, in good ore.

NOONDAY.—Resumed work on the cross-cut in the lower tunnol.

EAST SHEBOYGAN.—Prospectiug and forming connection hetweeu the air shaft and South drift.

COPPER GLANCE.—A force is employed in getting out ore from the northwest drift and making connection with the north drift.

REVIEW.—Schell Creek *Prospect*, Oct. 26: The McMahon in the bottom of the shaft shows 6 ft. wide of ore which assays all the way from $100 to $1,400 to the ton.

Work ou the Tehama ie going ou lively, aud the mine is constantly improviug.

The mines in Ruby Hill, Centreville aud Queen Spriugs are looking as well as cau he expected.

Arizona.

MINES ANN MINING.—Prescott *Miner*, Oct. 9: At Lyux Creek the mines are doing well with workers.

AT ANTELOPE CREEK.—The parties ruuning arastras on the Marcus rock are getting, regularly, $100 to $110 per ton from quartz cruehed.

Mexicane are working the old Antelope placers, and several large chispas have been found recently; one weighing over 8 ouncee was taken out last week.

From the new diet., 30 miles south of Wallapai, we learn that the Gun-sight lode is creating a sensation.

Colorado.

BOULDER CO.—Colorado Springs *Out West*, Oct. 17: Logue & Burhage are working the Isabella, Carhon hill, with a 12-inch pay streak.

The Carbou tunnel is driven in over 200 ft., and 20 ft. ie made weekly.

Mr. Bottleson and others working the Sherman are down about 35 ft. and drifting each way.

The Carbon is turning out 20 tons of high grade ore every 24 hours.

CLEAR CREEK CO.—The proprietore of the Pelican have 900 tons of ore on hand awaiting treatment.

Iu the Cashier a 10-inch vein of mineral has been struck.

In the Ocean Wave, at the head of the tunnel which has been driven in 200 ft., a vein of mineral, seven inches wide, hae been etruck.

Idaho.

LOCAL RECORD.—*Owyhee Avalanche*, Oct. 19: EMPIRE.—The shaft ie now down for the 3d-level. They are waiting to get the drifte etarted in order to increase the yield of ore from 25 to 35 or 40 tone of ore per day. The 2d-level drifts are in ahout 140 feet each way.

FLINT.—Driving away on the Rising Star.

IDA ELLMORE.—The prospect of finding a rich deposit of ore from the 7th level np to perhaps the enrface is very encouragiug. The work of prospecting this ground ie being pushed ahead. The 8th level stopee are producing very rich ore, and in the winze now being sunk for the 9th level good ore ie also found.

MAHOGANY.—In the 5th level eouth, and also in the 6th level both north and south, the vein is from 14 inches to 2 ft. in width, and looks well throughout, especially in the 6th level. They have out over 200 tons, and will have 500 tons ready by the 25th inst., at which date they intend to commence crushing.

SOUTH CHARIOT—Has connected the shaft with the raise from the 6th level, and in a week or eo, the main shaft will be completed to the 6th level. Sinking will then be commenced for the 7th level.

SILVER CORD.—This mine is to be etarted up again.

PAUPER.—The new hoieting works are doing excellent work.

ILLINOIS CENTRAL.—The new ehaft is down 56 ft. at which depth they are running a level and etoping out the ore both north and eonth. The ledge is from 12 to 18 inches in width and richer than ever.

RED JACKET.—The adit levsl drift, is being pushed ahead rapidly, and shows a fine quality of ore.

GOLDEN CHARIOT.—The 5th level sonth is open for 200 ft. in length, and stopes ars being raised. Stoping is goiug on in the 8th and 9th levsls. The 9th level drift goiug sonth looks well.

RED MT.—Ars running the 100 ft. level north, where the ledge is from 1 to 2 ft. wide, with a prospect of paying well.

NOAFOLK.—Taking ont rich ore.

SOUTH MT.—Cor. same. The S. M. S. Co's furnace huildiug will be nearly completed this week.

The Independent is improving, being 5 ft. wide of good grade ore.

Montana.

CLEAN UP.—Deer Lodge *Independent*, Oct. 26:—Rodgers, Strickland & Collin's claim, Carpsnter gulch, cleaned up from 50 day's work for one man, with small head of watsr, $2,000 one day last week. The clean-up made 3 or 4 wseks ago amonnted to $4,000.

CARPENTER'S BAR.—The average run to the pipe has been about $100 per day.

TO BE REOPENED.—Helena *Herald*, Oct. 24:—The Helena Smelting Works will be put in operation on or abont Nov. 1et.

Utah.

BULLION —S. L. *Tribune*, Oct. 29:—Within the past few days 17 bars have been received from the Pioneer Mill, East Cañon. The bullion ie over 996 fine, some running as high as 999. The aggregate value of the 17 bars ie $33,511.

COTTONWOON SMELTERS.—The Germania Refining works are being rapidly pnehed to completiou. The Davenport Smeltere will be finished very soou. The Flagstaff Smelter is in full blast, aud turning out largo qnantities of bullion daily. The Saturn works at Sandy are buying a great amount of ore.

WINSOR CO.—This Co. is carrying on active operatione on property in Little Cottonwood, consisting of the Montezuma, Savage, Hiawatha and Last Chance Minee. The Savage from which ore is being taken yields from 9 to 11 tons of ore daily, aseaying from $100 to $300 per ton. A tunnel about 200 ft. in length is being ruu from the Savage to the Hiawatha and Last Chance and Montezuma mines. Another tunnel down the mountain haebeen commenced below the present Savage tnnnel, which will tap 4 lodes at a depth of about 600 ft.

DAY CANON.—The mine that attracte most attention here is the Mono. Incline ie down 260 ft., passing through ore the entire distance. There are 8 drifte run from the main incline, an equal number on either side, for a distance varying from 20 to 40 ft. The ore body variee from 2 to 6 ft. In the bottom of the incline there appeare to be from 5 to 6 ft. of solid mineral of a very high grade.

The Kearssge incline is down 360 ft. and there is an 8 ft. ledge commencing 150 ft. from the surface and running to the bottom of incline. There ie about 150 tons of ore on dnmp which will average $280 to the ton.

The Utah Queen incline is down 180 ft., ehowing a vein varying in size from 1 to 14 ft. The character of ore is Galena and Carbonate with an apparent showing of Chloride, and averages about $200 to the ton.

The Converee shows a very well formed vein averaging from 2½ to 3 ft. in thicknese.

The Wandering Jew incline is down 140 ft. The ore seeme to lie in pockete, the whole averaging perhape 20 inches. In the bottom of the incline there appears to be 1 ft. of mineral.

The Monntain Chief has an incline down 85 ft., and ehows a vein 4 ft. thick in placee, thongh considerably broken. In the bottom of the incline there is a good showing of mineral. This Co. have a tunnel run 45 ft.

The Tennessee Co. incline ie down 165 ft., and ehows a vein of mineral averaging about 16 inchee. The character of ore is galena, gray carbonate, chloride, and occasionally horn silver. The owners have taken out about 100 tons that averaged $300 to the ton.

OPHIR.—On the 4th of July there are 2 inclinee run, one to the depth of 230 ft., and the other about 300 ft. This Co. are working from 20 to 35 men.

The Chicago main incline ie down 200 ft. and well timbered. The vein which appears to be a fissure, varies from 2 to 6 ft. On the dump and in the ore house there are perhaps 500 tone of ore, which will average from 60 to 75 ounces of silver to the ton, and 60 per cent. lead.

The McCullom incline ehows mineral nearly the entire distance run—250 ft—thongh the vein appeare to be broken in placee.

The Velocipede Co. are talking abont putting up reduction works.

LITHOGRAPH. — We have received a very neat and handsome colored lithograph representing a 6-horse etage of the California and Oregon Stage Company, with a view of Monnt Shasta in the distance. The lithographieas well execnted a one ae we have ever seen, mnch reeembling a chromo, the figuree very life like and scenery magnificent.

MOAE RAIN.—We had a fine shower on Saturday, Oct. 26th, and another on Monday, Nov. 4th, snfficient to lay the dnst and clear the air beantifully; whilst they portend the usual November rains.

The Eureka (Grass Valley) Mine Report.

We have received the annual report of the Eureka Gold Mining Company for the fiscal year ending September 30th, 1872. From the Superintendent's report we condense the following summary: They have driven 881 feet of drifts, 644 feet of cross-cuts, sunk 223 feet of main shaft, and also sunk 105 feet of winze and run 363 feet of tunnel. The vertical depth of the main shaft is 961¼ feet, or 1,072 feet on the inclins. They have hoisted 9,925 tons of quartz, and crushed 9,730 tons in 293 running days, averaging 2.079 tons per day to each stamp. Of sulphurets 103 tons have been concentrated, 77 tons worked, and 30 tons remained on hand worth about $3,900. During the year 9,925 tons of quartz were extracted from the various levels of the mine. There were upwards of 4,000 tons of good pay ore in sight, that the Superintendent calculates will pay all ordinary expenses, for the further development of the mine for the next six months at least.

The expense of mining has been higher than usual, owing to quartz from the intermediate level, 2,839 tons, having to be handled twice, and also the stringers taken out on tribute. The milling has also been higher owing to the company not being able to keep more than 15 stamps running, requiring the same number of amalgamators and engineers as 30 stamps do. The Superintendent gives no decided opinion as to the future prospects of the mine.

The Secretary's Report shows the following items:

RECEIPTS.

Cash, Oct. 1, 1871	$ 25,867.90
Bullion	220,010.31
Construction	50.00
Sulphuret Reduction Works	4,872.24
Milling	150.00
Wood Ranch	1,068 00
Wood Account	6,072 13
Premium and Discounts	415.75
McDougal Works	771.13
Total	$259,277.46

DISBURSEMENTS.

Dividends	$ 20,000.00
Mining	101,864.91
Mining Account (Prospecting)	18,301.50
Milling	22,956.32
Sulphuret Reduction Works	4,663.24
Roumania Mine	8,617 50
Mobile Mine	3,274.16
Construction	8,885.00
Mine Purchase	6,008.50
Sulphuret Concentration	1,821.25
McDougal Works	612.00
Wood Ranch	1,018 25
General Expenses	5,705.69
Bullion Expenses	843.44
Discount	53.16
Cash Sept. 30, 1872	59,654.54
Total	$259,277.46

The assets are estimated at $150,599.31 of which the mill is calculated at $40,000, and the building and improvements at the mine, $30,000. There are no liabilities. The average value of the ore worked was $22.95 per ton, and the average yield of the sulphurets $127.22 per ton. Bullion from the mill was worth $17.56 per ounce, and that from the Chlorination works $19.74 per ounce. The cost of mining 9,175 tons was $101,184.07, or an average of $11.03 per ton. The cost of milling 9,730 tons was $22,856.32, or an average of $2.35 per ton. The cost of concentrating sulphurets was $17.68 per ton, and of reducing them $28.06 per ton. The net profits were $61,799.86 of which $20,000 was paid as dividends to stock holders; 8,835 for construction and 6,003.50 for the Mobile Mine.

From the formation of the Company, October 1st, 1865, to September 30th, 1872, the receipts were $3,606,265.91, of which $3,585,543.85 were from bullion taken out. Of the disbursements $1,714,000 was paid out as dividends; $1,381,614.79 for mining and milling expenses. $301,906.50 for titles to property etc., and $141,939.71 for construction. The net profits from Oct. 1st 1865, to Sept. 30th, 1872 were $2,224,651.12.

Efficiency of the Signal Corps.—The Signal Service Bureau predicted, several days before they occurred, the late frosts that have been so severe in the Northern States. The truth of the expression, "forewarned is forearmed," was verified in this instance, and those engaged in agricultural pursuits in the sections visited were prepared for the frost, and were materially benefitted by anticipating its approach. This is another proof of the benefits of scientific investigation applied to every day life. The "probabilities" proving correct much more frequently than the old rules and signs in the days when Virgil's Georgics were an authority. The farmers and merchants are principally interested in these investigations, but the results are none the less important to the general public.

Bidders for Our Smelting Ores.

The German smelting works are making offers for American ores and have established an agency in this country for that purpose, as will be seen by reference to our advertising columns. The works of these companies have combined those of Clausthal (Hartz), Freiberg (Saxony) and Eisleben (Mansfield), under the name of the Royal Smelting Works. The agent in New York, Mr. Henry Robertson, 149 Broadway, is authorized to receive and to realize on ores at these smelting works on owner's account, on every quality of ore. The actual contents, of silver, gold, lead or copper found by careful official assays, are paid for in conformity with the tariffs published by the works which, with the circulars, have been sent us. Cobalt, nickel, and zinc in the ore will be paid for according to special agreement. No commission is charged by the agent in New York, he being the official agent for the management of the business.

For silver they pay about as follows: 10 ounces to the ton 35 per cent. of its value; 20 ounces 62 per cent.; 30 ounces 75 per cent.; 100 ounces 90 per cent.; and for qualities over this a slightly increasing percentage. Of course no one would ship silver ore of less than 90 to 100 ounces, depending upon the presence or absence of lead, so that the offer is practically from 90 per cent. for 100 ounce ore up to 95 per cent. for 500 ounce ore; with an addition under usual circumstances of two per cent. for ores that contain more than one per cent. or 292 ounces. The payment for gold ranges from 80 per cent. for ores containing one-tenth ounce, to 92 per cent. for ores with 20 ounces. The tariff for lead and copper are based upon an average price of 5⅓ thalers for 100 German pounds, (about 3¼ cents on gold per English pound) for lead; and 25 thalers for 100 German pounds, (about 16¼ cents gold per English pound) for copper. In case the actual prices are higher the difference is paid extra.

These works possess excellent advantages for working ores, having borne a good reputation for many years, and although this is the first time that they have made any particular effort to obtain ores from this country they have always treated those sent to them in a satisfactory manner. Assays are made at the works by sworn and competent assayers free of cost. In case shipments are made from here or other ports shippers should forward shipping documents to the Agent in New York, and it is also desirable that a small sample of the ore should be sent to him in order to ascertain beforehand for which of the works the ore will be best suited for. The circular says that in most cases shipment by way of New York will prove the most practicable, especially as six or eight weeks from date of shipment from that port will be sufficient to get the returns there. We see no reason, however, why the ores could not be shipped from here as well as from New York if sent in any amount. This is a chance for owners of mines with smelting ores to have them satisfactorily worked with a certainty of correct returns.

Cotton Prospect.

The *Rural Alabamian*, for October, published at Mobile in the very midst of the cotton-growing districts, speaking of the present cotton prospect says: Whatever interested parties may say to the contrary, the cotton crop of the present season is destined to be a short one—far below the sanguine expectations of both producer and consumer two months ago. Prices, therefore, will in all probability, not only be maintained but materially advanced, as the evidences of greatly diminished supply manifest themselves. With this well-founded assurance before him, it behoves the provident planter to be fully up with his picking, and, further, to see that his crop is gathered in the very best condition. The difference in cost between carefully picking the crop and slovenly gathering it, as is getting to be too much the fashion, is comparatively little, while in the sale it makes all the difference between the highest price and the lowest. Every moment that cotton remains unpicked after it is fully open injures its commercial value by bleaching it and rendering its fibre more harsh and brittle. It also loses rapidly in weight, and thus entails a postive loss of income upon the purchaser. The crop once housed in good order, no great haste need be made in running it through the gin, for the longer cotton lies in bulk unginned and unbeated, the heavier, and richer in both look and feel, its fibre becomes. With the probabilities of a rising market before him, therefore, the planter, who is fortunate enough to own his crop after it is made, will do well to turn his chief attention to properly housing his crop first, and then, at a more leisure period, to the proper handling and marketing it.

Ice Works on Prosser Creek.

The new ice company on Prosser Creek, says the Truckee *Republican*, are progressing favorably with their enterprise and expect to be in complete readiness for storing ice by the first of December. Their works are located about 1200 feet above the mouth of Prosser creek. A splendid side track has been graded and laid from the railroad direct to the spot where they are erecting their ice house and all the timber, lumber and material used in its construction are freighted in on cars. We visited the locality yesterday, upon invitation of R. P. Moore, the general superintendent of the new ice company. We found a busy camp of over one hundred men employed in constructing the dam, the ice house and other buildings. The dam is being built of heavy timber, some 500 pieces from 25 to 50 feet long by 15 inches in diameter being required. When completed it will be 29 feet high and about 95 feet in length as it crosses the channel from bank to bank. The dam is built in a spot where the creek narrows into a cañon, and immediately above there is a broad flat. The water, when the pond is full, will flood a distance of 3,000 feet, and will overflow from twenty to twenty-five acres. In building the dam the ground is first excavated down to the bedrock and upon this the timbers are laid lengthwise. The flume to carry off the surplus water will be four feet square. A fish-way or ladder for the finny tribes will also be provided.

The main building has just been commenced. It is to be 450 feet long, 50 feet wide, and 24 feet high. Owing to the narrow cañon through which the creek runs all of the ground upon which the building is to stand, had to be excavated from the bank, and the building itself will be in the form of a semi-circle, conforming to the sinuosities of the stream. Besides the ice house, a boarding house 80 feet long by 20 feet wide is being erected. In the erection of the buildings, over 500,000 feet of lumber and 350,000 shingles will be used. The timbers for the ties and cross beams of the ice building are 55 feet in length, and 6 by 10 inches wide and are sawed and furnished by the Richardson Brothers, at Summit Valley.

The ice-house is built immediately below the dam, so that the ice when it is made, will slide directly from the pond into the building by its own gravity. This will obviate the expense of any hoisting machinery or extra handling of frozen liquid. The capacity of the building when finished is estimated at 10,000 tons, and they expect to be able to fill it from one freezing of the pond. Sixty white men and fifty Chinamen are now employed by the company, and they desire to procure about thirty more carpenters, in order to complete their improvements, if possible, within the next thirty days. It is claimed by those who have lived on Prosser creek, and kept a thermometer, that it is one of the coldest localities in the winter season in the Sierra Nevada mountains, and it is for this reason, as well as for its local advantages in being accessible to the railroad, that induced the company to engage in this enterprise. The foreman of the company in the erection of the dam is Seth Green. The principal owners, we understand, are W. E. Brown and B. B. Redding, of Sacramento. The ice business of Meadow Lake township, already large, will be increased fully one-third this coming winter over any previous year, and will probably aggregate not far from 25,000 tons. This is not only the great lumber-producing center for Nevada, Utah, and a portion of California, but it is the great ice-producing center for the Pacific Coast. And the demand for this article is not limited to this Coast only, but extends to the Sandwich Islands, and the principal towns and cities along the western coast of South America. This demand has but just begun, and is likely to increase for many years to come.

Eberhardt and Aurora. — The directors' and managers' reports and statement of accounts for the six months ending June, to be presented at the meeting on October 15, have just been issued to the shareholders. The profit realized at the mines amounted to £122 11d., and the general profit and loss account shows a credit balance to carry forward of £31,767 4d. The directors regret that, owing to the unprecedented severity of the winter, the strike of the miners, the time occupied in the conversion of the wet stamps, the defective wire-rope of the tramway, which greatly limited the quantity of rock conveyed to the International Mill, and the variable nature of the ore mined, the produce of bullion during this period has fallen short of their expectations. The sum standing as the total cost of the company's properties, including the White Pine Waterworks, amounts to £280,747 2d., as compared with £296,533 11s. 11d, in the previous balance-sheet—the difference—15,786 11s. 9d. being chiefly due to the terms of the settlement with the vendors, by which they surrendered 1,000 of the shares issued for the purchase of the White Pine Waterworks. The directors have confirmed the purchase for £1,600 of about four acres of mineral land, which it is believed will be a valuable acquisition to the company. Since the destruction of the International Mill, arrangements have been made for crushing the company's ore at the Big Smoky Mill, and the first week's return by telegram, received Sept. 30, reported that 130 tons had been crushed, averaging $56 per ton. The directors also anticipate being shortly able to communicate further arrangements with other mills in the district.—*London Mining Journal*, Oct. 5th.

Australian Tin.

Most encouraging accounts continue to be received from the various tin mines in the North. At Cope's Creek Maclean and party commenced sluicing two or three weeks ago, and the results are highly satisfactory; two bucketfuls of tin per day can be obtained by the labor of two men. Moses and party have now upwards of two tons of tin on hand; from 200 to 300 cwts of tin, it is stated, can be obtained by the labor of four men from top stuff; and from indications, they expect to meet with very rich deposits. At the Tyngarra Mine, in the same locality, six bucketfuls of tin of good quality were obtained on the 10th ult., by the labor of four men with one sluice. From nearly all the mines the reports received from day to day are of the most satisfactory character, and keep up the interest in mining speculations. In the New England district alone 17 Government surveyors are busily engaged in marking off land for tin mining companies. The Surveyor-General states that "a good deal of land has been taken up for tin and copper-mining (principally tin), extending over very large portions of country east and west of the main north road between Glen Innes and Tenterfield. The secretary of the Ellsmore Tin Company reports that the first crushing of the lode yielded 67 per cent. of tin, Mint assay. A very rich block of land on Vegetable Creek is being worked by Marshall and party, who hold a selection of 40 acres. The four men who are at work are able to raise 6 cwts. of tin per day, as the claim is very rich and close to a granite bar which stands below them, forming a catch where the creek narrows. Tin has become an important item of export both from Sydney and Brisbane. Most of the produce of our nothern mines finds its way to the latter port, where a portion is shipped direct to England, the balance to this market. Smelting works here on an extensive scale are projected, and a site has been obtained for the purpose close to the harbor. Last month's shipments to London were 479 ingots tin, 501 packages. Deposits of tin ore have been found at Barrow Creek in the Tumut district.—*Sydney Morning Herald, Aug.* 10.

Manufactures in the United States.

The ninth census furnishes interesting data showing the extent of manufacturers in the several States. There are 252,148 establishments, 40,090 steam-engines and 2,053,988 persons employed in manufacturing industries; the capital invested is set down at $2,118,247,069; wages paid annually $775,621,593. The value of manufactured product for the year ending June 1, 1870, was $4,232,625,892. The manufacturing interests are represented by the several States, as follows:

Alabama	$ 13,010,844	Missouri	$200,213,429
Arizona	185,410	Montana	2,494,511
Arkansas	4,629,234	Nebraska	5,738,512
California	66,594,556	Nevada	15,870,539
Colorado	2,852,820	New Hamps're.	71,038,249
Connecticut	161,085,474	New Jersey	169,237,722
Dakota	178,500	New Mexico	1,489,868
Delaware	18,791,382	New York	785,194,551
Dist. Columbia.	9,292,173	North Carolina.	1,921,327
Florida	4,685,403	Ohio	269,713,610
Georgia	331,196,116	Oregon	6,877,837
Idaho	1,047,625	Pennsylvania	712,178,941
Illinois	205,620,672	Rhode Island	111,418,354
Indiana	106,617,278	South Carolina.	983,498
Iowa	46,534,322	Tennessee	34,362,628
Kansas	11,775,823	Texas	11,517,302
Kentucky	54,625,809	Utah	2,343,019
Louisiana	24,161,905	Vermont	32,184,606
Maine	79,497,521	Virginia	38,354,322
Maryland	76,593,613	Washington T.	2,851,052
Massachusetts	553,912,568	West Virginia	24,118,051
Michigan	118,304,675	Wisconsin	77,214,326
Minnesota	23,110,700	Wyoming	755,424
Mississippi	8,154,758		

Experiments in Working Ores.—The Monitor *Miner* says that the experiments now being made both at the Tarshish and Monitor mills are of a highly interesting character, as calculated to set permanently at rest the question of raw amalgamation on our ores. The Tarshish folks have gone the right way to work, and will thoroughly test both plans before deciding on either. Mr. Huyck, the champion of roasting, has the inside track yet, and is very sure Mr. Hanson, Superintendent of the Yellow Jacket mill, and one of the best amalgamators by Washoe process in the State of Nevada, will find after a fair trial that his plan will not work on these ores. Mr. Hanson says our rich ores, like those coming out of the Silver Glance shaft now, should be roasted, but thinks the common grade can be worked up to 50 per cent. raw, and that it is the most profitable way. Mr. White, the foreman of the Monitor mill, pronounced first-class in raw amalgamation by Mr. Hanson, who has worked with him on Washoe ores, and also conversant practically with the amalgamation of roasted ores, is doubtful of Mr. Hanson's success, but anxious to see it tested, and willing to aid all in his power in a fair trial. Things are working, and donbt will be dispelled in one time.

Coal in Turkistan.—In Turkistan, Central Asia, near the Yusaf Pass, splendid coal deposits have been discovered. There are foundries at Kabul, and it is considered a most opportune event for their prosperity. Three hundred camel loads of the valuable article were transported from the coal fields to these works; and it is considered that the discovery will in many other ways add to the development of the material resources of the East. If the Turkistanese were a progressive people, which they are not, we might soon hear of some enterprising Yankee undertaking to build a narrow-guage railroad from the coal-beds to the Kabul foundries.

Useful Information.

Lime a Preserver of Wood.

Lime is likely to be used largely as a preserver of wood. It has lately been discovered that vessels which carry lime last much longer than others. For a block pavement it is said an application of lime can be successfully made. In frame-houses, the space between the lath and siding could be filled compactly with lime, and the usual decay prevented at no very large expense. In regard to lime in connection with ship timber, the experience of an old shipbuilder on the coast of Maine, published in the *Mechanics' Magazine*, is of interest. He had been in the habit of filling up the spaces between the timbers with hard stone lime, and ramming it in, calculating that slight leaks would cause the lime to expand and fill the crevices. Long observations led him to consider lime a good preservative. A coasting schooner, built of Maine timber, unseasoned, and loaded with lime, had gone ashore and hilged. Being raised and repaired, the schooner remained sound for thirty years, with exception of the wood that had been used in making the repairs. It had been noticed, also, that the vessels carrying cargoes of lime generally lasted longer than others. But the most striking case was that of a platform of pine planks, used to mix mortar on, and that had been employed by father, son, and grandson, and, being no longer needed, was suffered to remain on the ground and become overgrown with grass and weeds. After a period of sixty years, having occasion to use the ground, the planks were removed, and found to be as firm and hard as when first laid down.

A writer in the *Western Rural* makes the following statement. If true, it is a very important discovery

I discovered many years ago that wood could be made to last longer than iron in the ground, thought the process so simple and inexpensive that it is not worth while making any stir about it. I would as soon have poplar, basswood or quaking ash as any other kind of timber for fence posts. I have taken out basewood posts after having been set seven years, that were as sound when taken up as when first put in the ground. Time and weather seemed to have no effect on them. The posts can be prepared for less than two cents apiece.

For the benefit of others I will give the recipe: Take boiled linseed oil and stir in pulverized charcoal to the consistency of paint. Put a coat of this over the timber, and there is not a man that will live to see it rotten.

Chemistry of Honey.

A correspondent of the *Scientific American* says:—The chemical formula for honey is, carbon, 12, hydrogen, 14, oxygen, 14: for beeswax, C, 24, H, 34, O, 2.—Glucose, or grape sugar, is obtained from honey by treating it with alcohol. This sugar is employed in Europe for ordinary sweetening purposes, for confectionery, etc. But the abundance of cane sugar in this country makes its manufacture unprofitable.

Chemists have given us the foregoing formula for honey, but, when first gathered, honey partakes more or less of the essential properties of the plant from which it is gathered. This essence soon evaporates, if the honey be obtained from certain plants; while from others—buckwheat, for instance — the odor and taste is retained for a great length of time.

The crystallization of honey is an evidence of its purity; but many persons are more fastidious than wise about the food they eat. Honey in the comb is generally preferred, because of its beautiful appearance, and the impossibility of its being adulterated. Still wax is very indigestible, and pure, extracted honey is not only cheaper, but far more healthful and convenient to handle. There is a process for converting honey into wax, but owing to the large amount of honey required to produce a small quantity of wax, the manufacture is unprofitable.

Solomon's Temple in the Vienna Exhibition.—Francis Langer, a sculptor of Kaeden, but born at Weiport, began to cut the model of Solomon's Temple out of lime tree wood according to the details given by the historian, Josephus Flavius. For thirty years he worked unceasingly at this laborious work, and at length died in 1850 at the age of 72. His son continued the unfinished work until his death in 1858. Two citizens of Kaeden then took the matter in hand, and, partly by working at it themselves, and partly by getting others to follow the plans and details left behind by Langer, succeeded in perfecting it. The completed work takes up a space of 325 square feet; or, if in a square, a space 18 by 18 feet. The present owner applied to the director of the Vienna Exhibition as to whether they might exhibit it, and after some little delay, received a reply that space would be reserved for it. This result of their labor during so many years requires twenty-eight chests to pack it in, and will now be forwarded to the exhibition at Vienna.

Grease and Pearls.—Owners of pearl jewels should be careful to keep them from exposure to greasy surfaces, as contact of this kind destroys their lustre.

Patchouly.

It is well known that the real India shawl possesses a peculiar and agreeable odor, which was as new to European noses as the shawls themselves were to European eyes. The odor pertinaciously clung to the fabric, and a genuine "India" unfailingly advertised itself as such in its perfume. The cause of this odor was fully inquired into, and it was found to be given to the shawls by contact with a herb known to the Hindoos as putchapet or patchouly, as it is commonly spelled.

Importation of the dried herb, as an aid to the shawl-makers enterprise, naturally followed, and this led to its introduction as a perfume in Europe, and thence to our own country. Patchouly resembles our common garden sage, and is largely distilled in India. It comes to us in large, black wine bottles, holding the odd amount of twenty-one ounces, and is worth about $75 at wholesale rates, or $4 to $4.50 per ounce. The handkerchief essence known as "extract of patchouly" is simply a solution of the ottar in deodorized alcohol, a small proportion of ottar of rose being usually added, which materially improves the scent.

Genuine India shawls and India ink were formerly distinguished by their odor of patchouly; but since the perfume has become common in Europe the test does not hold good. Ill effects, such as loss of appetite and sleep, nervous attacks, etc., have been ascribed to the excessive employment of patchouly as a perfume.

A Good Idea.

The *American Chemist* has a notice of a new social safeguard in England, which promises to become a terror to evil-doers. To sand sugar and water milk are vile practices which—the latter especially—have been so laughed at as good jokes on city people that they have not received the punishment they deserve. The blue cow's tail, which is the pump handle, has figured in cities since milk was first dispensed; how much water might be put in was only limited by the scarcity of milk, the capacity of dealers and the patience of customers. But the much suffering English people are at last to be protected. Official chemists have been appointed by a recent law as public analyzers; they are empowered to examine suspected articles of sugar and milk, and, if they find them adulterated, to summon the persons who supplied them before the magistrate. For the first offense the penalty is a fine of $250; and for the second, imprisonment at hard labor for six months. In order to make this practical, any buyer who has been thus cheated may have the article analyzed on payment of a small fee, which will be returned to him and charged in the costs of court to the seller if the examiner's report is adverse. Such a law, if found of ready application abroad, should be enacted in this country. It can injure none but the fraudulent seller; and the abolition of "sky-blue" would insure comfort, soothe ruffled tempers, and make happy and thriving babies.

Autumn Leaves.—Who does not admire the forests in autumn? What a glory of gold, and crimson and richest brown the leaves present! The cool autumn mornings seem warm as we look upon their brilliant colors. Many persons think that all the brilliancy is the work of the frost, while the fact is we have the finest coloring in those seasons in which the frost holds off the longest. The appearance of the color shows that the leaves are ripe. They have finished their work and are just ready to pass in to decay, just as the ripeness of fruit is the first step toward decay. The dying leaves are so beautiful that many gather them in that they will retain their brilliant colors, and are disappointed in finding them turn in a few days to a dull brown. The colors can be preserved, but to do this you must arrest the process of decay, and this can only be done by drying as rapidly as possible. As soon as the leaves are gathered, place them between perfectly dry papers, old newspapers will do, and change the papers every day until the leaves are quite dry, which will be known by their becoming brittle. When the leaves are dry keep them between papers until you wish to use them for making wreaths and other decorations. To make the colors come out more brilliantly, the upper surface of the leaf should be lightly brushed over with boiled linseed-oil. The leaves may then be pasted or glued upon card-board to make wreaths or lamp-shades, or used in any other way that fancy may suggest.

Fishes' Eyes.—The eye in the lancelet and the hag is of the simplest form, consisting of a nerve termination coated with black pigment and capable only of perceiving the presence of light. In young lampreys, while they remain buried in the sand, the eyes are very minute and undeveloped; but when they reach the adult period these organs are developed to an average size. In the majority of fishes the eyes are admirably adapted to the purposes of vision in water, and in the four-eyed fish of South America not only are the eyes very perfect, but they are also divided into an upper and lower portion, giving them the appearance of two pupils and enabling the fish to pursue its prey when out of as well as when under the water. In the cat fishes the greatest variety is found in the size and arrangement of the visual organs, from the large eyes on the sides to minute ones placed on the upper surface of the head. In some of the members of this family they are so buried under the skin or incased in folds of cartilage as to be of little or no use.

Good Health.

A Ferocious Parasite Taken From a Man's Leg.

A short time ago a sailor went to the City Hospital from the British bark "Georgiana," who was supposed to be suffering from a sore leg. The men had been ailing for near three months, but none of his shipmates supposed there was anything serious the matter with him. Accordingly, when a few days before his removal to the Hospital, he declared himself unable to walk about, the Captain of the ship supposed that he was endeavoring to make an excuse for getting away from the vessel that he might be left in port, the ship being prepared to sail in a few days. When removed to the Hospital, the man's right leg was very much swollen, and manifested all the symptoms of erysipelas, for which malady his affection was at first mistaken. At the end of a few days however, an abcess formed upon the inner side of the ankle, from which, after it had burst, protruded about three inches of a white membranous-looking substance, about an eighth of an inch in diameter. This singular manifestation induced a careful examination of the leg, which developed the fact that the man was afflicted with *dracunculus*, or Guinea worm. This is a horrible parasite, found only along the shores of the Indian Ocean, Red Sea and certain portions of the Mediterranean. It infests damp and muddy soils, and impure water, and generally attacks the feet and legs, but sometimes other portions of the body. At the time that it forsakes its native element for the more luxurious habitations of flesh and blood, it is scarcely larger than a common flea; but having once buried itself beneath the skin, it grows with alarming rapidity, and will attain a size varying from six inches to six feet in length by one-twelfth to one-eighth of an inch in diameter. It lies dormant until it reaches the age of maturity, after which it commences a series of wanderings and meanderings about the muscles and bones which cause intense pain to the unsuspecting victim. It always travels downward, and with such rapidity that it will sometimes travel the whole length of the human frame in twenty-four hours. It will sometimes come to the surface and lie under the skin like a long white cord; but should the surgeon attempt to extract it with the knife without first securing it with a nipper, it will elude his grasp and scamper away with the agility of an eel. If a portion of the worm is removed the remaining portion will not die, but continue as gay and lively as ever. The first symptoms of the Guinea worm are a disagreeable itching and irritation of the infected parts. After it begins to move about, its paths are followed by external abcesses, and when the paths be along the stomach, internal abcesses also. It always ultimately endeavors to leave the system by working its way through the skin, generally near the ankle, but this is only after it has left from ten to fifteen young behind. The usual number of worms that is found in one person varies from one to fifty. There is one case on record, however, of a man dying from the effects of the Guinea worm, whose body and skin were nothing but a network of these horrible creatures. Death rarely results from the ravages of this worm, and when it does it is generally the result of some disease produced by the inflammation and other effects of the worm's wanderings. The Guinea worm does not confine its ravages to man, but will also attack dogs and horses. The sailor in question made a voyage to the eastern coast of Africa, about six months ago, and while there received the parasites into his system. One of these worms has already been extracted from his right leg, but another has made its appearance in the left. He is doing as well as can be expected under the circumstances. This is probably the first case of the kind ever known in Charleston.—*Charleston News.*

Our Food.

There is no country where there is so much dyspepsia as in America, because our people pay so little attention to food, and eat too much meat for the exercise they take. If one has mental labor, fish every second day at least is requisite. Soup sets all the glands at work, and prepares the stomach for the more important functions of digestion, and therefore should be taken at dinner every day. Beef broth is to the old what milk is to the young. Cookery properly attended keeps a man in health. If the stomach is out of order, the brain is affected. We should eat more fruit, vegetables, soup and fish. Good and well-prepared food beautifies the physique, the same as good and well-directed education beautifies the mind. Wrinkles are produced by want of the variety of food. The men who does not use his brain to select and prepare his food is not above the brutes, which take it in the raw state.—*Home and Health.*

Iodine and Boils.—As soon as a boil becomes hard and inflamed, paint it with iodine. The poison will not be scattered, but will be absorbed by it.

Popular Physiology.

Much importance has been justly attached to the subject of temperament, both as respects the training of children and the education of adults, and the selection of companions for life in the matrimonial relation. Respecting physical and mental training there is much error, not only in our system of common-school education, but also in vocations and habits of life. Children who are weak in body often take precociously to books, and the early indications of mental talent are often treated with a forcing or hot-house culture, to the utter ruin of the bodily constitution; while children who manifest vigorous muscles are put to the excercises or business pursuits which aggravate the disproportion between mind and body, and produce an adult with a strong body and imbecile mind. The proper application of the doctrine of temperaments reverses this custom. The feebler parts of the organism should be most assiduously trained. A harmonious organization should always be aimed at in the rearing of children and education of youth. There will always be unbalanced conditions enough; and when the child has attained the vigorous development of full-rounded manhood or womanhood, there will be time enough to cultivate special talents. In this manner only can genius be placed on an enduring basis, and extraordinary original capacity be rendered safe to its possessor and most useful to mankind.

In the selection of conjugal partners, some authors advocate the rule of similarity, and others that of diversity of temperaments; and it has been most absurdly pretended by some writers on human temperaments that two perfectly harmonious temperements are constitutionally incompatible, indeed, "physiologically incestuous." The teachings of nature, however, as manifested in the history of all the races of men, and as illustrated throughout the whole animal kingdom, are not difficult to understand. *From the Science of Health.*

How Royalty Sleeps.—It is now commonly believed that where two persons sleep together, one abstracts from the other some amount of vital force. This is especially the case where old and young persons share the same bed. Besides, in a room where there is no decided current of air, the emanations from the lungs and skin of a sleeper poison the atmosphere for a considerable distance. In the public wells of great hospitals, never less than two and a half feet is allowed between each bed for this reason. In the sleeping apartments of royalty and nobility single beds are everywhere the rule, and nowhere the exception. The Emperor of Germany sleeps upon a narrow bed and a hard mattress. The single bed covering is a wadded silk quilt. The Emperor and Empress of Austria take their royal slumbers on similar beds, with the same description of coverlet. One of the principal advantages of these narrow beds is that the mattresses are more easily aired.—*Galaxy.*

Treatment of Asthma.—George Gaskoin, surgeon to British Hospital for Diseases of the Skin, has had success in treating this disease by rubbing briskly into the chest, for the space of an hour, a chloroform liniment. The counter-irritation produced by the liniment was of benefit, but this benefit was increased by the jolting resulting from the rubbing. Anything that leads to the displacement of the air stagnant in the vesicles has proved able to relieve in many instances. It is advised that the friction be made with as much roughness as the case admits. Slight blows with the palm of the hand or the end of a towel on the ribs are quite allowable; and the friction should be extended to the front of the neck at the lower part, where the vagi enter the chest. The composition of the liniment need not trouble us, provided it be warm and work well.—*British Med. Jour.*

Dreams.—The following are medical signs of dreams, as published in a medical work:—Lively dreams are, in general, a sign of nervous action. Soft dreams, a sign of slight irritation of the brain; often, in nervous fever, announcing the approach of a favorable crisis. Frightful dreams are a sign of determination of blood to the head. Dreams about blood and red objects are signs of inflammatory conditions. Dreams about rain and water are often signs of diseased mucous membranes and dropsy. Dreams of distorted forms are frequently a sign of abdominal obstructions and disorders of the liver. Dreams in which the patient sees any special part of the body suffering, indicates disease in that part. Dreams about death often precede apoplexy, which is connected with determination of blood to the chest.

Home Comforts and Health.—A neat, clean, fresh-aired, sweet, cheerful, well-arranged house exerts a moral influence over its inmates and makes the members of a family peaceable and considerate of each other's feelings and happiness. The connection is obvious between the state of mind thus produced and respect for others, and for those higher duties and obligations which no laws can enforce. On the contrary, a filthy, squalid, noxious dwelling, in which none of the decencies of life are observed, contributes to make its inhabitants selfish, sensual, and regardless of the feelings of others; and constant indulgence of such practice renders them reckless and brutal,

MINING AND SCIENTIFIC PRESS.

W. B. EWER.....SENIOR EDITOR

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ILLUSTRATIONS AND REPORTS OF MINING ENTERPRISES WANTED.—Drawings or photographs of mining works that are of general interest to our readers are solicited for publication in this journal. Official reports of Companies, and description of mines of importance, of special interest, are also desired. Sketches of any new method and discoveries will be very acceptable.

San Francisco:

Saturday Morning, Nov. 9, 1872.

Gold and Legal Tender Rates.

SAN FRANCISCO, Thursday, Nov. 7th, 1872.—Legal Tenders buying, 88⅝; selling, 89. Gold in New York to-day, 112¾.

Table of Contents.

ILLUSTRATIONS.—D. O. Gilman, President of the University of California, 289. A Miner's Safety Candlestick, 296.

EDITORIALS.—Variations of the Needle; Academy of Sciences, 289. Commercial Reporting; Advance in the Price of Metals, 290. Bidders for Our Smelting Ores, 294. The Horse Disease, 296. Inaugural Address of President Gilman, of the University of California, 297.

MECHANICAL PROGRESS.—Imperfect Constructive Materials; An Invention Wanted; New Process of Combining Iron and Steel; Marbleizing Slate, 291.

SCIENTIFIC PROGRESS.—Zoellner's Theory of Terrestrial Magnetism; Phenomena of the Spheroidal State of Liquids; The Constitution of Matter—Matter and Force but a Single Entity; Filiform Silver Artificially Produced; Discovery in Magnetism; Prevention of Explosion of Fulminates, 291.

MINING SUMMARY from various counties in California, Nevada, Arizona, Colorado, Idaho, Montana, and Utah; Mining Shareholders' Directory, 292-3. Market Reports, 300.

USEFUL INFORMATION.—Lime A Preserver of Wood; Chemistry of Honey; Solomon's Temple in the Vienna Exhibition; Patchouly; A Good Idea; Autumn leaves; Fishes' Eyes, 295.

GOOD HEALTH.—A Ferocious Parasite Taken From a Man's Leg; Our Food; Popular Physiology; How Royalty Sleeps; Treatment of Asthma; Dreame; Home Comforts and Health, 295.

MISCELLANEOUS.—Inventions Needed; Diamonds in New York; From the San Feliciano Mines; Hayden's Yellowstone Expedition; Extent of American Peat Fields; Chemical Laboratories in Japan, 296. The Eureka (Grass Valley) Mine Report; Efficiency of the Signal Corps; Cotton Prospect; Ice Works on Prosser Creek; Eberhardt and Aurora; Australian Tin; Manufactures in the United States; Experiments in Working Ores; Coal in Turkistan, 294. The River Nile; The Cotton Plantations; Increased Consumption of Sugar; Result of England's Coal Famine; A New Enterprise; The Andes on a Decline, 298.

Inaugural Ceremonies at Oakland.

The inangural ceremonies connected with the inatallation of Prof. Gilman as Prest. of the State Univeraity, took place in Oakland, on Thnrsday laet, and the occasion will long he remembered as one marking an important era in the history of the University. President Gilman reached the Broadway Station ou the 10 o'clock train from thia city, where he waa met by the Board of Regents, the Faculty of the College and the Alumni of the University, who moved in procession, escorted hy the batallion of University Cadets and a band of music, to the Congregational Church, which waa soon filled by a large and appreciative audience.

Tho services consisted of an address of welcome by Nathan Newmark, of the Senior Claee; an address on behalf of the Academic Senate of the Univeraity, by the retiring President, Durant; an address, on behalf of the Regenta of the University, by the Preeident of the Day, Hon. Edward Tompkins; and closed with the inangural address of President Gilman, which we give entire in the present isaue. The addressess were all moat happy in tbeir character, and in the manner of delivery, and we regret our inability to give them all.

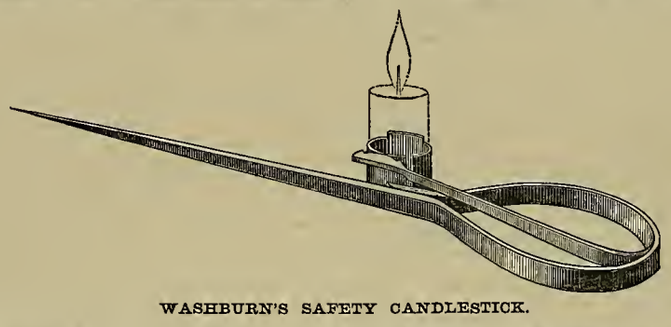
MINT MATTERS.—The coinage at the San Francisco Branch Mint for Octoher was as follows: Donhle eaglee, $1,800,000; eagles, $50,000; half eagles, $45,000; total, $1,895,000.

A Miner's Safety Candlestick.

The improvement in miners' candlesticke shown in the accompanying repreeentation is one, the importance of which will he readily recognized hy tbose familiar with mining operatione. It is specially adapted for the common candlesticks need in minee on thie Coast, which are secnred to the wall hy a apear attacbmeut which is stabhed into the wall, or timber of the mine and consists of an attachment for extinguishing the light when the candle has hurned down to the socket. As will be seen by the cut, a flat eteel spring is secured to the candlestick at a oonvenient distance from the socket, while its opposite end extends to the npper end of the socket, and has a sharpened blade or plate which lies across the eocket.

This hlade is semi-circulars to correspond with the ehape of the socket and leaves no projecting pointe. The edge of the hlade is not sharpened so as to cut into the candle nor is the strength of the spring sufficient to force it into the candle when in use.

To insert a candle tbe blade or plate is drawn hack hy hinding the spring until the socket is uncovered. The candle is then inserted, and the edge of the plate allowed to press against the candle just above tbe socket. Tbe blade, or plate, will remain in this position until the candle burns almost to it, but when the candle has burned low enough to cause the heat to soften the tallow agaiust which the blade presses, the spring will gradually force the blade across the socket and extinguish the flame. After the blade hae commenced to pass across the candle sufficient time will elapse before the flame is extiuguished to allow another candle to be lighted from it hefore it is extinguished.



WASHBURN'S SAFETY CANDLESTICK.

Thia simple and convenient little device ia the invention of Theodore A. Washhurn, of Gold Hill, Nevada, who has taken steps to patent hia invention through the SCIENTIFIC PRESS Patent Agency. By ita use fires can he prevented in minea, where the candle often burns down and then drops throngh the socket in a burning condition upon some inflammahle suhstance. In many of the large mines are piles of tallow in certain apots in the drifts and levela where lighta are always kept burning, and numerous instances are on record where a conflagration haa ensued from a ehort end of candle with wick falling on to the tallow and igniting the timhers. It was only a few weeks since that one of the Comstock mines was accidentally set on fire hy thia means, and hut for prompt measures seriousresults might have occurred. The meana employed to extinguish the light in this instance are effective, and have the additional merit of simplicity, while the whole device will probably cost very little more than the ordinary caudlestick, althongh it has douhle the value in partially insuring against fire.

COAL DISCOVERY.—There seems to be more foundation to the report of the discovery of coal, at San Rafael, Marin County, than was at first supposed. The ledge waa struck on a hill out of town while blasting rock. A dispatch statea that work has been commenced in the new mine, and the vein haa increased so that a large amount of coal has been taken out and is heing used in fnrnaces. There has aleo been discovered several new veins running toward the main ledge which average two inches in width. The experts who have examined the mine say that the indications are of a large and valnahle deposit of mineral coal. Lumps weighing ae heavy aa 100 pounds have been blasted out.

SILVER IN KANSAS.—An excitement exists in Lum County, Kaneaa, over the reported discovery of rich silver lodes in that neighborhood. A ehaft 140 feet deep has been sunk in one place bnt with what results ie unknown except to owners of the property.

The Horse Disease.

At the last meeting of the Academy of Sciences, Dr. Arthur B. Stout read a paper on the snbject of the horee disease now prevailing in the Eaetern States, whioh will he read with interest in view of the wonderful spread of the disease, and the probability of its reaching ns here. The subject caused an interesting discussion among the membere in which Dr. Gibbons deecribed a remarkable epidemic in tbe form of catarrh, which broke out among the hnman family in the year 1831, spreading throughout Europe and invading the Eastern States. It proved to he the forerunner ot a terrible visitation of cholera. He believed from paet experience that the preeent horse epidemic wae the first of a seriee of epidemics that wonld attack the hrute creation and poseihly extend to the human species. Dr. Stont's paper read as follows:

The possibility that the "horse disease" now prevailing in the Eastern and Western States may reach California, rendere it a eubject worthy of earnest stndy. It ie probable, or at leaat greatly to be hoped that the elevated and cold barrier of the Sierrae may interrupt and prevent its passage across tbe Rocky Mountains. Even if it ahould uot, the original germ elements of its existence may as well he generated primarily, if climatic influences favor their production on this, as on that side of the mountains.

It may then prove a public benefit to throw what light we can on this malady as far in advance as possible of its invasion. Being thus armed in advance with information every horse owner in the State may be prepared to act ae his own Veterinary Surgeon.

We may premise by saying that the usual appliancee of veterinary surgeone will not succeed. The nature of the malady is that of an intermittent fever dieposed to assume a typhoid type. The naeal catarrh, the throat disease, and the congeetion of the lunga wbich appear with more or less acnteneea are only aecondary affectiona, and ahate so aoon as tbe primary fever, and brain disorder are controlled. Hence it is that purgativea, drenches, sweata, bliatere, and clystera if relied npon alone aesist the malady hy promoting debility. Whatever debilitates the animal will favor the disease—because the diaease itself is one of debility caused hy the poisoning of the blood throngh malarioue influence. Thia poison prostratea the power of the hrain and corrupta the blood; nervous fever results, and the animal requires support rather than debilitating agents.

The Symptoms of the Disease

As yet obtained are very vaguely described, hut the one symptom, that of the coldneas of the legs and eara is almost sufficient to define the malady. No journals have aa yet given a clear account of the general symptoma. When the air containing the germ poison which the horae hreathee, comes in contact with the lining membrane of the noee, mouth and throat it is quite natural that enough of those poison particles should attach themeelvea to these membranes, on the way to the lnngs, and excite inflammation with discharge of matter, firstly thin and clear, and afterwarda thick and yellow; if they have activity enough so to excite a local inflammation, how much more eerioua muet he their energy when absorbed throngh tbe lunge, iuto the blood and thence transmitted to the hrain.

While then it may be very well to make some local application to tbe noee and throat, to aoothe that irritation, aud empty the digestive organs of the horse by mild purgation, tbe object of the cure can only he affected by counteracting the influence of the poison on the hlood and hrain. Thia fairly attained the local catarrhs will rapidly ahate. The fatality of the disease will depend upon the degree of intoxication (empoisonment) and the celerity with which remedies are applied in ita earliest appearance.

The Fatality of the Throat Affections

Is less to be feared, for it dependa upon the neglect to relieve the primary malady. The inflammation in the narrow passage to the lungs hecomes dangerons, by superceding the primary in acutenees, aud then kills by direct suffocation, or strangulation, rather than hy the malarious influence on the hlood and hrain The rational and

Natural Treatments

To be derived from these viewa, is to apply the same remediee to the horee aa would he reaorted to for the human heing. Due allowance heing made for the comparative differencee hetween man and the horae, the same treatment whicb is known to counteract malarione disease in the former, will also cure the latter. It is not asserted that all climatic germ-poiaons are identical, but that they are eo nearly allied in their action on living beinge that modifications of the same general treatment will enffice to control them all. The eame accuracy of doeage cannot he obtained for the horee ae may he attained for man, hecauee the animal cannot define his sensatione, and the preecribers, horse-owners and farmers are novicee in the art of medication. They cannot eetimate the differences dependent upon age, strength, sex and the degree of acuteness of the malady. On such discriminatione tbe animal must take his chance.

Being eatisfied of the identity of the diseaee with that of the human subject and the similarity of treatment, the next question would he tbe dosage or the comparative qnantity of the remedy. If tbie were estimated by the ratio of hulk and weight, the relative dose would be from 5 to 8 times greater for the horse than the man. But the organ to be acted upon is the brain, whioh in the horee heare no snch proportion to that of man. Again, the simplicity and uniformity of food and habits of tbe horse, would render his nervous syetem much more impressionable to active therapeutic agents. The same would be true of the other functional organe of the animal. A safe inference would he the eame; or at tbe utmoet douhle doses wonld amply suffice.

Horse Disease in California.

Horse disease is no new thing in California. It hae existed witb more or lese intensity for years. The cbicken disease may be mentioned in the same category, and doubtless ie referable to the same climatic conditions. How often have we heard of four or five horses dying within a few days in the same stahle, and suepicions heen excited that the water had been poisoned, or some foul play heen practiced. Sometimes two or three horses, where there wae no imputation of over driving or abuse, have died iu a night, especially where the horses have been kept in hasement etalle, and where the access of pure air wae defective. These horees were in truth the victime of malarioue infection, hut unfortunately tbie truth was not recognized.

The Rinderpest of Germany is another illustration of a similar infection, only ite intensity wae felt by the horned cattle. If then the horse disease appears as a general epidemic in California, eome cautious reserve may well be exercised before the disease is pronounced to be an importation from the Eastern States, for it is certain that it may exist from local climatic cause, and not necesearily he the result of propagation hy contagion, or by the diffusion of an onward march from State to State.

The Cure.

The sbeet-anchor of treatment ie Quinine; to it all other remediee are only auxiliariee. This should he at once administered without waiting for other prelimiuary treatment. The best moment to give the aulph quinine, if the prescriber is capable to judge, is in the cold stage of the fever, or when itis at its loweat temperature, as indicated hy the coldnesa of the legs and eara. Fifteen to thirty grains at the dose every tbree hours—continued for 24 or 48 hours—according to the aeverity of the attack. During tbia time a mild purgative of jalap, gnyac and glauherealt may he of service. Let the animal he well hlanketed to promote perspiration, and fed with warm maeb.

Tbe catarrh will be relieved by a local application of infusion of golden seal (hydrastus) in which a few drops of carbolic acid, dissolved in a teaspoonful of spirit of wine or whiekey, have been mixed. This remedy ehould he injected into the nostrils with a eyringe having a long beak. In this way it will not only hathe the naeal membrane, but will reach the throat. Some of it will aleo he swallowed, which serves a good purpoee in cleansing the atomach. In thia mixture the quinine may be dissolved and be poured from a hottle down the horse's throat, serving tberehy at the eame time the purpose of a throat wash. A wineglaseful of the infneion of golden seal will suffice for each nostril. If the fever is high the shoes should be taken off and warm poultices of flaxeeed meal be applied to the feet and fetlocks.

The Hygiene of the Stable

Ie a subject of the ntmost importance. A bad and dirty stable ie of itself enough to engender the disease, so tbat any falee economy in this respect may lead to very expensive results.

All sick horses should be forthwith removed from hasement stalls. Free ventilation to free the stable from ammoniacal and nrinary odora is indispensahle. Probably the hest disinfectant, hecause not poisonous, and very efficient, ie the hromochloralum, which should he frequently sprinkled from a watering pot through the atalla and passages. A pint to a hucketful of water anfficea. The addition of carbolic acid (¼ oz. to the eame measure) may he advantageonsly added. The hromochloralum, may be ohtained as well aa the golden seal infnsion at Steele & Co.'a drug store.

This disinfectant, freely aprinkled iuto tbe manure-pit, will not injure the fertilizing properties of that subatance; bnt here chloride of lime may alao enter. But if chloride of lime is too freely used in the atable, the chlorine set at liherty will make tbe horses oough and increaae tbe nasal catarrh.

Before closing, we venture the inquiry—May not the glanders (farcin) be closely allied to the malarione contagione, and, althongh the glandera is always considered an incurable, fatal diease, might not this eame treatment prove that this disease may likewise be cured?

The Building of the University.

An Inaugural Discourse, Delivered at Oakland, November 7, 1872.

[By DANIEL C. GILMAN, President of the University of California.]

Grateful for the kindness with which I have been met, and full of hope for the future which opens before us, I accept the trust now put upon me, imploring for the University of California the generous support of all good men within this commonwealth and seeking the divine blessing upon our united efforts for the advancement of knowledge, the formation of science, and the furtherance of the welfare of our fellow men.

It is an academic usage, in our land at least, that on occasions like this the incoming officer should give utterance to his views upon the higher education, and the usage cannot well be disregarded when one who is almost a stranger first enters a community of experienced teachers and aspiring scholars like this which is here assembled. My theme will therefore be the Building of the University.

The Building Elsewhere.

Since the University of California was organized it has happened that several of the leading colleges of the country have witnessed ceremonies like that in which we are now engaged, and so there have been ample and fresh discussions of some of the questions which most interest us.

At Cambridge, New Haven and Princeton, those historic seats of learning where traditions and usages both help and fetter, at Ithaca, Ann Arbor, Minneapolis and St. Louis, in newer, freer and harder circumstances, and in other places, which are neither old or new, have the voice of experience, and there the voice of hope has been heard, sounding different notes in harmonious eulogy of learning and culture and in earnest plea for progress and support.

Whoever reviews these various utterances and makes a note of the topics which are taken up must be impressed with the fact that great changes have come to pass in American education within the last few years, great improvements have been made, and great results are not far off. If then he turns to the venerable shrines at Oxford and Cambridge, before which every scholar loves to bow, and traces the wonderful changes which have been introduced into those homes of conservatism and precedent, since the Parliamentary inquiries of five and twenty years ago began their revelations he will find abundant reasons for surprise and congratulation that the doors have been open to modern science as a teacher, and to nonconformists as pupils. If his eye is turned toward the continent he may see scholastic Germany, the United States of the old world, engaged at this very moment in the foundation of a new University at Strasburg, as the greatest boon which can be given by a triumphant nation to a recovered province—a university which in its comprehensive faculties, its liberal structure, its probable power, approaches the University of Berlin, and may well serve as an example to those in this country who desire completeness, and who want it quick.

Side by side with the university foundations, sometimes a part of them, oftener apart from them, the modern schools of science and technology are springing, up at Zurich, Aachen, Carlsruhe and Vienna, at many places in the new born Kingdom of Italy, and in every State of the American Union, partly under the beneficent action of the Morrill bill for the formation of agriculture and the mechanic arts, and partly under the generous gifts of Sheffield, Cornell, Stevens and their peers. Everywhere, among enlightened people, universities in their most comprehensive spirit are in this year of grace, receiving impulses which are as creditable to the spirit of this age as they are hopeful for the ages yet to come. Especially in this country our State and National Governments have discovered that the questions of the higher education must be met in legislative and administrative councils and in many places are vieing with each other to devise wise schemes of educational development; the builder's hammer is heard in many seats of learning, at Harvard, at Yale, at Amherst, at Princeton, at Cornell, at Philadelphia, constructing the walls which shall furnish homes to successive generations of pupils; collections of books, maps and charts, of works of art, museums of geology and natural history, and archæology, laboratories for chemical, physical, botanical and zoölogical researches are multiplying with a marvellous rapidity; lenses are made for the microscope and the telescope surpassing any which the physicist and astronomer have hitherto possessed; prizes, scholarships and fellowships have been endowed sometimes for continued residence at the college and sometimes (like the Kirkland scholarship, at Cambridge, just given by the historian Bancroft) providing for residence in foreign universities; to the traditional schools of law, medicine and theology, and schools of advanced study are added schools of philosophy, of history, of the fine arts, of chemistry, engineering, agriculture and mines, devices and arrangements to allure young men to higher attainments and to aid them in their onward steps; underlying all this, supporting all this, indispensable to all this, have been the prolific gifts of men of wealth, farsighted and generous benefactors, whose names a grateful posterity will cherish forever as the true nobility of the republic, the lords and gentlemen of the American state.

California's Opportunity.

Such is the hopeful aspect of University education in the States beyond the Alleghanies and to some extent likewise in the valley of the Mississippi. Now comes the turn of this new Empire State, California, queen of the Pacific, to speak from the golden throne, and decree the future of her University;—California, the land of wonders, riches and delights; whose valleys are decked with purple and gold, the luscious vine and the life giving corn; whose climate revives the invalid and upholds the strong; whose harbors are the long-sought doorways to the Orient; whose central city is cosmopolite like Constantinople of old; whose pioneers were a bold, strong and generous class, illustrations of the modern notion that in the struggle for life, the fittest must survive; the builders of whose institutions have been farsighted and catholic, bringing hither the best ideas of many different climes, and laying with faith, hope and charity, the foundations of a modern Christian State, whose people are patriotic, determined and intelligent in a very uncommon degree; whose future no seer can foretell.

California thus endowed and thus inhabited is to build a University. What sort of an institution shall it be? This is the question of the hour. Let us consider it well, for though time only can determine the answer, forethought and faith may be factors in the problem.

Two things are settled by the charter of this institution and are embodied in the very name it bears. First, it is a University, and not a high school nor a college, nor an academy of sciences, nor an industrial school which we are charged to build. Some of these elements may indeed be included in or developed with the University, but the University means more than any or all of them. A University is the most comprehensive term which can be employed to indicate a foundation for the promotion and diffusion of knowledge, an organization to advance the arts and sciences of every sort, and to train young men as scholars for all the various professions of life. Universities greatly differ in their internal structure. The older institutions are mostly complex in their organization, including a great variety of collegee, chairs, halls, scholarships and collections, more or less closely bound together as one establishment, endowed with investment privileges and immunities, and regarded as indispensable both to the moral and material progress of the community, or in other words, as essential both to church and State. In this country the name is often misapplied to a simple college, probably with that faith which is the substance of things hoped for and the evidence of things not seen. We must beware, lest we too have the name without the reality. Around the nucleus of the traditional college which has been so well maintained since the earliest days of this State, we must build the schools of advanced and liberal culture in all the great departments of learning, just as fast as may be possible, and we must at least begin to recognize the various sciences by chairs which may each in its turn be the nucleus of a school or department.

Secondly, the character and the name declare that this is the University of California. It is not the University of Berlin, or of New Haven, it is not the University of Oakland, or of San Francisco, it is the University of the State which has created it. It must be adapted to this people, to their public or private schools, to their peculiar geographical position, to the requirements of their new society and their undeveloped resources. It is not the foundation of an ecclesiastical body or of private individuals. It is of the people and for the people—not in any low or unworthy sense—but in the highest and noblest relation to their intellectual and moral well being.

What Have We to Build Upon.

Bearing then in mind that this is to be a University, and that it is to be the University of California. Our first inquiry is what we have to build upon?

You may all be supposed to know much better than I, the conditions of the State University; but having taken an account of stock, before deciding to join you in an enterprise which seems to be full of promise, a rapid enumeration of the features which have arrested my attention may be of use.

In the first place I observe you have a good Charter; I will not call it perfect, for what human instrument is perfect, but a charter carefully drawn up after a study of the best kindred enactments in the United States, gathering the needful and rejecting the cumbersome, and adapted in all its provisions to the wants of California. The freedom from tuition charges, and the admission of women to the privileges of instruction are two of its most marked peculiarities. The generous recognition of all the arts and sciences, the new and the old with scientific, literary and professional culture, shows a liberal prospect. The long tenure of office given to each elected and appointed Regent adds dignity and responsibility to the Board and tends to conservative and steady progress. The care which has been taken to enlist for the University's service the influence and counsel of the high executive officers of the State, to secure the all important aid of the Superintendent of Public Instruction, and at the same time to enlist a popular interest in its welfare through the Agricultural Society and the Mechanics' Institute, should insure the confidence of the people, while the peculiar mode of selecting the Regents would seem to entirely prevent sectarian or ecclesiastical control.

Under this charter you have a good body of Regents—men, so far as I have become acquainted with them, who are earnest, unselfish, determined and strong, who mean that the trust committed to them shall succeed, and who will not be disheartened by the difficulties and perplexities which beset all great and endearing undertakings. Their unpaid labors deserve the grateful recognition of the community.

The University has inherited a good College, with its buildings for present use, its collections, its repute, its experience, its short but worthy list of graduates, and its hold upon the people of the State. Hence it does not begin entirely anew, but the foundations of over twenty years are ready to be built upon. I cannot here refrain from paying the tribute of gratitude and respect to those pioneers who endeavored with the earliest organization of this State, to establish a college. They followed the footsteps of the earlier pioneers of the Atlantic, who founded the college at Cambridge when the country was still a wilderness. Here the task was no less difficult than there. The lack of funds, the lack of an organized society, the pressure of material wants, in short the struggle for life was so great that the wonder is the college lived at all. It was the harbinger of good not yet fully realized, not yet fully appreciated; but be sure that a hundred years hence, when the centennial of the University is celebrated, as it surely will be, grateful homage will be rendered to the foresight, the vigilance, and the self-denial of those who founded and cherished the College of California. Then, too, just credit will be given to those who were sagacious enough to admit that a University was greater than a college, and when the hour arrived were ready to offer that which had already been accomplished, as the foundation for greater things to come. There are chapters of unwritten history which may some day see the light, and illustrate the intelligence, the public spirit, and the wisdom of more than one of the counselors by whom I am now surrounded.

With other goods bequeathed by the college, the University has inherited a Site at Berkeley, the beauty of which is already renowned, and none can tell what it will be when academic halls and monuments shall have added their architectural charms, and when a society of scholars and of cultivated families shall have made a dwelling there. Some regard it as an open question whether all departments of the University can best be maintained at a distance from the great city, where every form of human activity is manifested, where hospitals favor the study of medicine, and courts of law promote the study of jurisprudence, where libraries and picture-galleries, and the collections of science are likely to be accumulated. Upon this question I will not enter. Fortunate is it that the site selected is so near to the great metropolis of the Pacific—so that ample space, delightful prospects, salubrious air, and academic quiet may all be enjoyed without the complete surrender of the advantages of the town. Indeed, the growth of this neighborhood is so rapid, that one can readily believe that the distance between the city and the suburb, will soon appear no greater than the distance of Cambridge from Boston; it may even be that at Berkeley the time will come, as it has has already come at Cambridge, when the curators will find more space essential to the growth of the University; never, I trust, will an acre of our fine domain be sold.

When I first stood at Berkeley, under the kind auspices of one of the Regents, and looked at the mountains and the bay, the town and the distant glimpses of the open sea, I recalled an hour under the elms at New Haven, more than two years ago, when I listened to the story of how this spot was chosen, of the rides and walks which were directed by an observing eye over the hills and into the valleys of this charming region, with a prophetic anticipation of the coming day when the college germ, already planted, would require a site worthy of its growth. The services of that enthusiastic scholar, whom California would gladly have kept, if Connecticut would have spared him, are honorably recorded in your early college annals, and are not forgotten by those who labored with him; but I cannot forbear to utter at this time the name of one to whose counsels and whose benedictions my presence here is due,—the name of Horace Bushnell.

Among other possessions you have the credit of a good system of Public Instruction, of which the University is to be the crown. I rejoice that it is so, and I hope that in all time to come, the primary school, the high school, the college and the University shall all be regarded as one system, essential and honorable to the State by which they are fostered.

You have a good community, made up in a very remarkable degree of men of intellectual force and superior education. The list of college graduates resident on the Pacific has been scrutinized in the colleges of the East, and the number of professional men who are resident in this immediate vicinity occasions wonder. Here also are graduates of other colleges than the chartered institutions,—those who have been taught in the stern schools of experience, and who have learned wisdom and judgment by the hardest and most varied lessons of practical life. The children of such are now ready for their higher training; how well it will be if they can have a worthy training almost at their own doors.

Again, we have as a foundation on which to build a vast amount of scientific and literary work of the highest order, already performed, and which is good not only in itself but as the seed-corn of future harvest. The work of the United States Coast Survey, for example, in its careful study of the hydrography of the coast, its accurate delineations of the harbors, its study of the tides and currents, its co-operation with men of science at the East in the solution of astronomical and geodetic problems have gained renown for California science, not in our own country only but in Europe. The day is, I trust not far off, when the geodesy of the Pacific coast, will be connected with that of the Atlantic sea-board, and the triangulation of our continental domain will thus be completed as a basis for all future cartography.

A kindred service, and of equal merit has been rendered by the engineers of the army. Then there is the Geological Survey of the State, which surpasses in thoroughness and completeness any kindred work undertaken in the country, and is the delight and pride of all American scholars who take an interest in the lasting investigation of the natural characteristics of the land, either for its own sake or regarded as a basis for social and political growth. I have sometimes thought that this great work would have been more popular if its designation had not been restricted to Geology, for the law requires and the observers carry on much more than geological researches. There is no State in the Union which has such good maps (Massachusetts, not even excepted) as those prepared by the Geological Survey of California, and when the extraordinary diversity of the surface, its vast area, and the lack of roads and habitations are remembered, it is wonderful that so much has been done and so well done in this short time. But the topography is only one part of the survey; its geology, palæontology, ornithology and botany, subjects on which I have less right to speak, are equally commended by those who are expert in these branches of science. Growing out of this survey, though beyond the limit of the State, and under the national authority, are the excellent surveys of the fortieth parallel, by a party of civilians attached to the corps of army engineers. Binding all the men of science together as a brotherhood of scholars is the Academy of Sciences, whose publications are of great scientific value—so valuable that you need not be surprised to learn that a part of the series, the supply of which is exhausted, was transcribed a few days ago with pen at the request of Agassiz, as essential to his work. A young society which has done so well, will be an important supporter of our growing University.

I would remind you, that the literature of this coast has already, like the fruits here growing, a richness and flavor of its own, so that some have even said that California has alone of all parts of America made quite new and original contributions to one literature. The humor, the wit and the poetry of the Sierras are fresh as the breezes of the hill tops, and as spicy as the groves of pine. Oratory has here spoken with a golden tongue, the echos of whose patriotism still are floating around us. To foster genuine literature there is a journal whose fame has gone Overland and over seas as well, the encourager, the suggester, and the producer of that which is choice and enduring.

Where such science and such literature flourish, the day of the university has certainly dawned.

Finally we have to build upon the good will of the State, manifested already in generous appropriations, ripe clearly for generous culture, and ready I believe to sustain and advance its youthful University,

Who are the Builders.

Can we now like master-workmen distribute the parts so that the various toilers will recognize their tasks? Let us make the attempt.

It is on the Faculty more than on any other body that the building of a University depends. They give their lives to the work. It is not the site, nor the apparatus, nor the halls, nor the library, nor the Board of Regents who draw the scholars—it is a body of loving teachers, skilled in their specialties, eminent in their calling, loving to teach. Such a body of teachers will make a University anywhere. Agassiz wherever he goes is surrounded by a company of disciples. Whitney would have his class in language at Berlin or Beuares. Such men will draw not pupils only, but the books and the collections they require as naturally as the voice of Music drew the rocks and stones. The *genius loci*, the spirit of the place, will be the spirit of the Faculty. If truth and culture are their aim, truth and culture will flourish in the college where they toil. If sordid motives or unworthy jealousies spring up among them, the trust they bear will be in peril. More than any thing else, a University requires a large and vigorous staff so that the various sciences and languages may have their devotees, young men of different tastes and characters may find fit guides, the idiosyncracies of one school or chair may be modified and counterbalanced by the qualities of another. It is now difficult both in Europe and this country to secure enough eminent teachers, for other walks of life are better paid and are held in equal honor; let then those who are honorably engaged be not suffered to depart and let their numbers be increased at every opportunity.

The Regents or Trustees of a college have the great responsibility of appointing the body of teachers and of promoting their work. They are the power behind the throne, unseen in the daily work of the college, but never for a moment unfelt. Upon their wise choice of instructors, their careful guardianship of funds, their constructions of buildings, their developments of new departments and schools, their mode of presenting the University to the public will depend the confidence and liberality of the community. On them the shafts of criticism are often inconsiderately hurled, but in the long run, they will add the gratitude of the community to their own consciousness of fidelity and self sacrifice in behalf of learning and the country.

The State authorities, executive and legislative, have also a great part to perform in the support of the University, not by over much legislation nor by hasty action in respect to its development, but by steady, munificent and confiding support.

None of the higher educational establishments in this country will flourish without the support of the ministers of religion. Their counsels, and those of other educated professions, are continually sought by parents and young men; they are interested in all that promotes

[Continued on page 300.]

Domestic Economy.

An Oyster Chapter.

A famoue French cook eays the American ie, without douht, the best oyeter in the world. This heing the case, something more definite about the precious hivalve may be pleasant and profitable.

It often is a matter of much convenience to he able to keep oysters alive in the ehell, especially when one lives a distance from market. To do this, place the oysters in a tuh, with the concave side of the shell undermost, and eprinkle each well with salt and Indian meal. Fill np the tub with cold water, and over the top spread an old carpet or hlanket. Freshen daily the water and food. They may be kept in this manner from a week to a fortnight. The tub must be kept in the cellar.

Oysters raw are inexpressibly delicious, if you happen to like them. Wash the shells clean before opening. Serve with vinegar, pepper and salt. Lemon juice is preferable to vinegar. Horse radish is an excellent addition to the lemon juice.

Oysters pickled will give the happy eater an appetite that only another and another oyster will satisfy. They form a very desirable and convenient dish for parties, country "donations," and, in fact, for any entertainment inclnding refreshments. Remove the ahells and all pieces of shells from one hundred and fifty fine, large oysters. Lay them in a deep dish and strain the liquor over them. Add salt to taste, as salt adds to their firmness. Simmer over the fire until the oyeters are heated through, but not until they hoil. Then drain out the oysters, putting them in a stone jar. To the liquor add a piut of cider vinegar, a large teaspoonful of blades of mace, three dozen whole cloves, and the same of pepper corns. Let all come to a boil, and when the oysters are quite cold iu the jar pour the liqnor over them. They can he used at once—will he better next day—and will keep a week in cold weather.

Stewed Oysters are served as a soup. Open them on a eieve to draiu. Put them, with a little more than half the liquor, some whole pepper kernels, a few blades of mace, and some grated nutmeg, into a stew pan. Simmer gently for five minutes, adding, meantime, a piece of butter rolled in flour, or a quantity of sweet cream, which is better. The oystere need only be heated through to be sufficiently cooked. Try one before removing from the fire. When done, turn the contents over huttered slices of thin toast, in a deep dish.

Crumbled Oysters.—Eight sqnare soda crackers, rolled fine, seven ounces of butter, one quart of oysters. Put the crackers and oysters in alternate layers, dividing the butter equally through, and spriukling a dust of pepper over each one. Use salt spariugly. Have crackers at top and bottom of dieh. When ready for the oven, pour over a coffee cnp of the oyster liquor. Bske a light brown.

Clams make a p latable breakfast dish, stewed, or made iuto fritters. They possess touic properties, and are esteemed by invalids. They may he eaten raw like oysters To stew, wash the shells clean with a scrubbing brush. Add water euough to preveut their burning, and boil until the shells open; then take out and remove the shells. Cook the clams in the same water, adding pepper and hutter. Stir in rolled crackers. Long clams are nice broiled or roasted in the shell.

Lobsters.—A live lobster, weighing from one to two aud a half pounds, is the kind to he chosen. To boil, lay it alive in a fish kettle; cover with cold water; cover the dish well and set on a brisk fire. Boil from fifteen to twenty-five minutes, accordiug to size. When boiled, take it from the kettle, separate the body from the tail, aad place in a colander to drain. Use everything but the stomach and the black or blueish vein running along its back and tail. It is eaten with salt, pepper, vinegar, oil, muetard and chopped parsley. Crabs may be broiled and eerved similarly.

Craw-Fish, sometimes called river or fresh water crahs, and often taken for young lobsters, are excellent to eat, decorate dishes finely, and are dressed and served like lobsters and crabs.—*Rural New Yorker.*

The Ventilation of Cupboards.—In the sanitary arrangement of houses, even for the richer classee, the ventilation of cupboards is neglected. In places let out as tenements, closets are the receptacles for bread and the fragments of various other kinds of food. Often the dirty clothee are put away in these placee waiting for the washing. It is therefore most important that air should he plentifully paesed through snch corners; generally, however, there is bnt little arrangement made for tbis purpoee. The doors are kept close without any perforation. There are no veutilatore in the walls and, in conesequence, those places become caes of polluted air, which, when tbe doors are opened, escapes over the apartmente. This defect is visible in nearly all houses of old date; and while looking at some dwellings of recent construction it is seen that, although care has been generally taken to ventilate stair cases and rooms, the cupboards are in this respect neglected.—*Ohio Farmer.*

Cool, But Not Clean.—Bogue ice cream ie mainly manufactured of oorn starch, French clay, and poieonous coloring matter. The beautiful carmine which pervades the treacherous compound comes from the cochineal bug. A continued course of this poieon produces the moet terrihle maladies. Firet dyspepsia, then scrofulous eruptione, accompanied hy a looseening of the teeth and a dropping out of the hair. After this a deathly lassitude seizee upon the frame of the unfortunate victim, and insanity or hopeles idiocy ends the unfortunate career. From experiments made by eminent physicians in France, it hae been shown that four ordinary plates of thie horrible mixture will cause death in from one to two hours. The same quantity given to a baby will produce at first convulsions, and in five minutee afterward a state of coma—ending in a most terrible death. This agent of deetruction is not confiued to the street corners alone. It lurks in gilded saloons and places of fashion resort.

Preserving Milk.—It is said that milk can be kept a year or more as sweet as when taken from the cow, by the following method: Procure hottles, which must he perfectly clean, sweet, and dry; draw the milk from the cow into the bottles, and as they are filled, immediately cork them well, and fasten the cork with packthread or wire. Then spread a lit le straw in the hottom of a boiler, on which place the bottles, with straw between them, until the boiler contains a sufficient quantity. Fill it up with cold water, heat the water, and as soon as it begins to boil, draw the fire, and let the whole gradually cool. When quite cold, take out the bottles and pack them in sawdust in hampers, and stow them away in the coolest part of the house.

The River Nile.

The bed of the Nile, like that of the lower Mississippi, is higher than the valley through which it pasees. Warburton said: The Nile's hed is a sort of savings bank by means of which the deposits of four thousand years have enabled him to rise in the world and run along a causeway of his own." It is the only river in the world which runs upward of twelve hundred miles, iu undiminished volume, without a tributary stream. It moves on its long course without the help of even a creek, tapped by innumerable canals and thirsty gardens with which it is fringed, abeorbed by hot sand banks aud hotter sun, and emptiee greater bulk at ite mouths than it has between the cataracts. The products of Egypt are the gifts of this stream. The land on which the towns and hamlets of Egypt repose is foreign soil, brought from the far south by this public carrier. For more than four thousand years he has faithfully brought his burden and deposited it at the feet of Egypt. The Rameses and the Ptolmies come and go, aud the Nile remains unchanged.

Narrow Gauge Railways are exciting great attention in Great Britain, and Mr. Robert F. Fairlie has just published in London a pamphlet entitled "Railways or No Railways, or the Battle of the Gauges Renewed in 1872." The pamphlet comments severely on the English reviews of the report of Gen. Buell in favor of a three feet eix inch gauge for the Texas Pacific Railway, and arrives at the conclusion that hroad gange means "costliness with extravagance," and narrow gauge means "economy with efficiency."

Poplar Lumber for California.—One car load of poplar lumber was shipped from Indianapolis to San Francisco, Cal., the other day, the freight on which was four hundred dollars. They have no poplar growing west of the Rocky mountains, and have been shipping it round Cape Horn altogether till recently the Overland Railroad has transported large quantities to the Pacific alope.—*Am. Manufacturer, Oct.* 17.

Abalona Shells.—Sixteen tons of shells have been ordered from this coast by two firms, one in Boston and the other in Philadelphia. They are for manufacturing into buttons and many kinds of fancy articles, and bring good prices. The islands opposite to this county are literally covered with the finest shells for this purpose found in the world. Why are they not utilized? On the shores of Anacapa of Santa Cruz, a few men could soon load a schooner.—*Ventura Signal.*

Sherman Island.—The overflow of Sherman Ieland last winter, although producing great damage, was not wholly destructive. The farmera have been enahled to raise a fair crop of potatoes. The Antioch *Ledger* says that the levee is approaching completion, and that its dimensions are such as will hereafter prove an effective barrier to the floods.

The Last Novelty in Patents.—Three Chinese have taken out a patent in Parie for the invention of a new automatic and autographic continuons telegraphic instrument, by the aid of which apparatus the dispatch ie transmitted to the receiver as an exact fac-simile of the transmitter's autograph.

Land in Sonoma.—William Hooper, of this city, is the purchaser of General Sewell's farm of 1,000 acres, five miles from Sonoma, for $35,000.

Large quantities of dark-colored salmon trout are canght in Eagle Lake, near Snsanville, weighing from two to fivs pounds sach.

The Cotton Plantations.

The cotton plantations are upon the Merced river bottom, from three to eeven milee below Snelling'e, and mostly in the vicinity of Hopeton, the latter a small place where there ie a post-office, a store, a blacksmith shop, and a dozen or more other houses.

Col. J. M. Strong has 200 acres of cotton planted this year, npon the farm known ae the Stockard place, six miles below Snelling's. The Buckley Brothers have 250 acres of cotton planted on their farm, next below Strong's. J. B. Coconaur has from 12 to 15 acres of cotton on the south side of the river uear Col. Strong's place. C. S. Peck, three miles below Snellings has 75 acres of cotton on his farm, a short distance above. Claihorne Dean in the eame vicinity, has 25 acres of cotton, and Mr. Farrell has five acres. His farm adjoins that of Peck. A. B. Anderson, the hotel keeper at Snellings, has a few rows of cotton in his garden, which people passing through the town who have not come to visit the large plantation can readily examine.

The Crop.

I have visited and examined with much interest all these plantations, excepting the small one of Mr. Farrell. I would say generally that there is very little difference in the condition of the crops upon any of these plantatione. Iu every one of them it ie apparent from the most casual inepection that no plant ever grew more luxuriously, and in every possible way evinced the complete adaptation of the soil and climate in which it was placed, to its growth and the maturity of its fruit, than do the cotton plants here. They are evidently healthy, strong and vigorous. The amount of growth made in a eingle season is remarkahly large. Many of the stalks are over an inch in diameter, and from four to six feet high, with abundance of branches. The number of holls upon a branch is large, in fact, eometimes out of all proportion to the size of the plant, for branches half an inch in diameter are frequently seen broken down from the main stalk by the weight of the bolls they contain. The bulk of tbe bolls are well advanced towards maturity and beyond the reach of damage from frost. Ou the strongest plants the lowest branches are so loaded down that the bolls lie upon the ground and are also shaded from the sun. Usually these bolls are not yet open. The bolls upon the next branches above are now beginning to open well, so as to be ready for picking. Ou the branches above these again the bolls are from as largo as pigeon's eggs to full size; but not yet opening, while at the tops of the plant aud on the ends of the branchee, new leavce are yet putting out; blossoms are still opening, and squares forming, which, of course, will not reach maturity before tbe plaut is killed by frost. Now, however, the plants are full of vitality and will mature, all but the lateet sets of blossoms aud bolls. A single frost would open these fruits of all the bolls formed, and render the entire crop ready for picking. This is on the moister land, where irrigatiou was applied.

On the small patches, where the soil ie light and thin, and underlayed hy gravel which has drained it of moisture, the growth of the plant has often ceased, the leaves are yellow aud drying up rapidly, no new leaves or blossoms and squares, and all—or very near all—the bolls are completely open and ready for picking. On these patches, where a good stand of plants was obtained, the cotton will average, at least, twenty good, perfected holls to the plant. Where it is a little better, there will he as many bolls already matured, or nearly so, and ten or a dozen more that will yet mature aud open.

There are occasional emall patches of drift eand, where the stand was lost entirely, and the land is bare, or nearly eo. Whenever a few plante in euch cases survived, and stand pretty much by tbemselves, the growth is remarkably vigorous and rank.

The patches upon which the crop was lost by the drifting of the sand and hy extreme dryness are not numerous, very small and of little importance. The patches upon which the plants started well but have now matnred and ceased growth and are only developing or have already developed and opened all the bolls formed, are aleo emall and not sufficient yet to juetify the employment of any large number of cotton pickers. In theee patches the plants are from eighteen inches to three feet high.

On the moister lands where no irrigation has been applied, the plants throughout, stand from three to five feet in hight with plenty of side branches. On lands that are still damper, and those where irrigation has heen applied, the growth is extremely rank, the plants are five aud six feet high, the branches are so thick as to shade the ground completely, though the rowe are four feet apart, the branches interlock eo thickly as to render it difficult to pass between them. Upon such plants the number of bolls and squares is enormous and the blossoms continue to open. Mr. Buckley assured me he had counted over four hundred bolls and squares upon a single plant, about twenty-five more than the largeet number observed in any instance last year. In fact it is not desirable to have so rigorous a growth as irrigation produces, and even this year the Buckley Bros. did not irrigate at all, while upon other plantations sometimes only portions of the crop were irrigated, and next year, if eimilar to thie, little or no irrigation will be nsed on any of the Merced cotton farms.

Cotton Picking—Splsndid Results.

Mr. Strong commsnced picking on September 26th, and has a pile of seed-cotton in his barn over thirty feet long, twelve feet wide and five feet high. Mr. Peck had five hands picking during the past week. Mr. Coconaur had a couple of hands picking on Friday for the first time. The Buckley Bros. eay that this year the stand ie finer, larger, and looke hetter in every way than laet seasou, and promisee a larger yield. Samplee of the staple you have already eeen are of euperior quality. Last year the crop upon their farm yielded twenty-one or twenty-two thousand pounds of ginned cotton, the area cultivated being fifty-one acres, being at the rate of 400 pounde per acre. Every one who sees the crop speaks well and favorably concerning it. All pronounce it entirely successful and no longer experimental, being quite as snre and eafe ae any other crop. People from the cotton-growing regions of the Southern Statee all say they never saw better looking or more promising cotton-fields, and many say they never saw their equal.—*Cor. Bulletin.*

Increased Consumption of Sugar.

Though the manufacture of sugar was commenced in the West Indies early in the sixteenth century, yet its use in domestio economy did not become general in Europe or America before the beginning of the last century. In the year 1700, only 10,000 tons were used in Great Britain, though the English were at that time the leading manufacturers of sugar. The consumption of sugar in the British Islands in the year 1870 is stated at 600,000 tons. In this country the consumption of sugar is steadily increasing. Since the close of the late war, the ratio of increase has been about 10 per cent. annually, and in the year 1871 the sugar consumed in the United States amounted to 700,000 tons, an increase of 15 per cent. on the preceding year. This is the largest consumption of sugar, in proportion to the population, found in any nation on the globe. A very small proportion of the sugar consumed in the United States is produced withiu our owu territory, while in Europe the production of sugar is rapidly increasing and bids fair soon to render the principal nations of that quarter independent of the tropical regions in regard to the supply of sugar. Since the year 1850, the production of sugar from beets in France has risen from 60,000 tons to 300,000; in Austria, from 10,000 to 80,000 tons; and Russia, where beet-culture was introduced since 1850, now produces 100,000 tons of sugar. The increased consumption of sugar may be taken as the evidence of an advance toward a higher civilization.—*Ag. Report for September.*

Result of England's Coal Famine.

A correspondent of the New York *World* writes from Washington as follows: The people of this District, surfeited with politics, are now experiencing a genuine seneation in the growing up of important commercial connections with England and the British Provinces, growing out of the coal famine. Coal is now actnally being shipped from the port of Georgetown direct to India, to South America and the West Indies. It is authoritatively etatod that several hundred thousand tons of American coal have recently been purchased here on orders traneferred from England to the United States. The greater portion of these purchases is of the soft or bituminous coal of Maryland. The larger number of these ordere will be filled at the Cumberland mines, and will be sent thence to Georgetown by way of the Cheeapeake and Ohio Canal for trans-shipment. Several vessels have already left this port within a few weeks with cargoee for foreign conntries, and others are expected to arrive and clear before the close of navigation. Foreign bottoms are mainly employed for thie service, because of their peculiar rig and construction, which render them more seaworthy than American vessels.

A New Enterprise.—Among the new enterprises in coutemplation among some of our capitaliste is the erection of a flax-mill. This will set our farmers to thinking about the raising of flax. Linen goods may be manufactured here as cheaply as iu any part of the country. Besides it is another step toward the encouragement of home manufacturing interests, which are so much needed to make our city prosperous. We are assured that such an establishment will be constructed somewhere within the city limits, if a site suitahle can be had. If not the company will go to some adjoining city, probably Oakland or Alameda.

The Annes on a Decline.—A recent nnmber of the *Ausland* tells ne a sad story of diminiehed altitude. Quito was fonnd by La Condamine in 1745 to be 9,596 feet above the sea; Humboldt, in 1803, could only make 9,570 feet of it; Boussingault, in 1831, wae started to find it waa only 9,567 feet; Orton, in 1867, found it reduced to 9,520 feet; and Reiss and Stuhel fonnd, in 1870, that it had shrunk to only 9,356 feet above the level of the sea. Quito, it seems, has annk 246 feet in 125 years, and Pichincha 218 feet in the same period. Its crater has sunk 425 feet during the last 26 years, and Antisana 165 fsst in 64 ysars.

Business Cards.

H. C. BENNETT,
STATISTICIAN.
Reports and estimates made about all departments of Production, Commerce, and Manufacture, of the Pacific Coast. 5v24-tf

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Office—Room 16, City Hall. 11v24-3m

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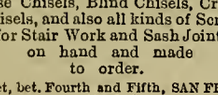

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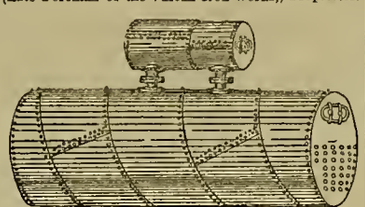

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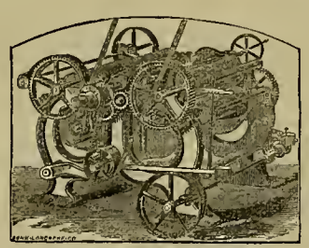

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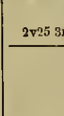

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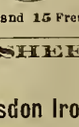
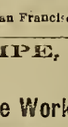


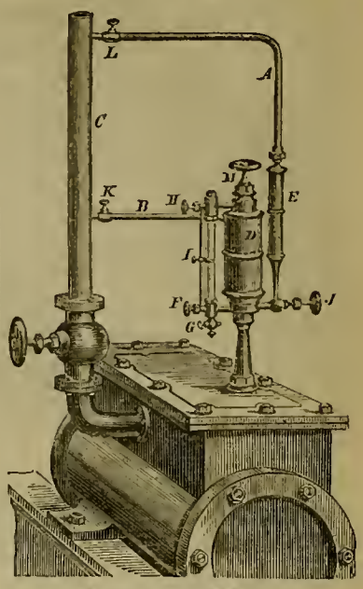
MANUFACTURERS OF
Sledges, Hammers, Stone Cutters', Blacksmiths' and Horse-Shoers' Tools.



13 and 15 Fremont street, near Market, San Francisco
10v1anr

SHEET IRON PIPE,
THE
Risdon Iron and Locomotive Works
Corner Howard and Beale Streets,
Are prepared to make SHEET IRON AND ASPHALTUM PIPE, of any size and for any pressure, and contract to lay the same where wanted, guaranteeing a perfect working pipe with the least amount of material.
Standard sizes of railroad Car Wheels, with special patterns for Mining Cars. These small wheels are made of the best Car Wheel Iron, properly chilled, and can be fitted up with the improved axle and box—introduced by this company, and guaranteed to outlast any other wheels made in this State.
☞ All kinds of Machinery made and repaired.
24v22-3m JOSEPH MOORE, Superintendent.

N. Seibert's Eureka Lubricators.



THE HIGHEST PREMIUM
Awarded by the Mechanics' Institute Fair, San Francisco, and State Fair, Sacramento, 1871.
These Lubricators are acknowledged by all engineers to be superior to any they have ever used; feed constantly by pressure of condensed water, supplied by pipe A, regulated under the oil by valve J, and forced out through check valve and pipe B into the steam pipe C; it then becomes greasy steam, passes to all the valves and cylinder at every stroke of the engine; glass tube I indicates amount used per hour. Packing on rods and steme lasts longer, and the rings on the piston will not corrode. One pint of oil will last from three to six days, according to speed and size of engine; I, sliding gauge; K, valve to shut off when engine stopped; H, F, valves to shut off in case of frost, steam does not enter the cup; it is always cool; warranted to give satisfaction Patented February 14, 1871. Manufactured by California Brass Works, 125 First street, S. F. 24v23tf

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CELEBRATED
Worcestershire Sauce.

Declared by Connoisseurs to be the only good SAUCE
Caution Against Fraud.
The success of this most delicious and unrivalled Condiment having caused certain dealers to apply the name of "Worcestershire Sauce" to their own inferior compounds, the public is hereby informed that the only way to secure the genuine is to ASK FOR LEA & PERRINS' SAUCE, and see that their names are upon the wrapper, labels, stopper and bottle.
Some of the foreign markets having been supplied with a spurious Worcestershire sauce, upon the wrapper and labels of which the names of Lea and Perrins have been forged, L and P. give notice that they have furnished their correspondents with power of attorney to take instant proceedings against manufacturers and vendors of such, or any other imitations by which their right may be infringed.
Ask for LEA & PERRINS' Sauce, and see name on wrapper, label, bottle and stopper
Wholesale and for export by the Proprietors, Worcester; Crosse & Blackwell, London, &c., &c., and by Grocers and Oilmen universally. 15v24-tf

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Z.E. is a Dictionary of Language. It contains every word in the English language with its derivation and definition.
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[Continued from page 297.]

intelligence and truth; they have been from the earliest colonial days the founders, guardians, and teachers of our best institutions. I trust this University will always merit their support for if worthy it will surely win it.

The Press is another social power on whose help we must rely. It can quicken or retard the establishment of a complete University, by its favoring or censorious attitude. Its criticism, the University should not fear; its cordial support the University should desire. Powerful everywhere, the Press in a free country is a force which all must appreciate; let us hope that its assistence will be generously accorded.

On the men of wealth in this community I greatly rely. It is true the State has been, and is likely to be liberal in its appropriations,—but a new University requires almost unlimited means for its support. The library alone could well employ in the purchase of books, and the payment of salaries, the income of half a million of dollars. A school of science would not be liberally endowed with a capital of that amount. Funds to the extent of several thousand dollars might be annually be employed in scholarships and prizes. Homes or halls will be needed in some form or other for the occupation of the students when the University goes to Berkely. Professorships representing studies which are not taught to undergraduate students, but which should be cherished in the University must also be founded. I trust the day will come when the spire which silently points heavenward will mark our place of worship. But for all these things we cannot expect the public treasury to be opened. Relying upon that for the most essential things, we must look to men of wealth to provide more complete endowments.

What are we to Build.

[This portion of the address is here omitted. It consisted of a discussion of some of the elements which make up an American University,—the classical college, the school of science, the departments of agriculture, mining and mechanics arts, the advauced schools of physiology, philosophy, law, medicine, the fine arts, and other branches,—the library, the museume, the observatory, the fellowships and scholarships.]

The Spirit of the Builders.

[Under this head allusion was made to the necessity of keeping the individual subordinate to the University; of building both for the present, and for the future; of maintaining an Catholic liberelity toward all departments of le rning; of keeping well before us a high ideal. Reference was also made to the relations which should subsist between the scholere and the teachere, and between the teachers and the public; and to the possibility of promoting simultaneously abstract science, and practical advantages.]

Method of Building.

One of the next topics to he considered is the relative importance of different branchee and what studiee most deserve encouragement? Shall literature and language, the traditional classical course of our colleges be made first in rank? or shall the place it has held he given up to science in its theoretical and practical aspects? are the modern languages to he chosen rather than the ancient? shall history and political science, with the etudy of the Roman law, or the theory of the State be preferred; or shall mathematice he the dominant theme? is the acquisition of knowledge, or the acquisition of discipline, as it is called, be the end of instruction? Shall general etudiee which may he presumed to have an equal value in all the varied callings of life, or epecial etudies which have decided reference to a profeeeional or technical career be commended to the ycuthful student? shall lectures, or shall recitations. or shall literary and scientific research be the method of education? shall univereity freedom of choice and of work he permitted, or shall collegiate restrictione and control he insisted on? These and a score of kindred questione are now under discussion in the various colleges of this country.

A part of the difficulty arises from confnsing the requirements of young scholars, like those who have just left the high school and the academy, and those of more advanced etudents whose tastes, talents and wants are specialized. Give the former, prescription; give the latter, freedom; hut let prescription vary with the varying peculiarities of individnals,—and let the freedom allowed, he the freedom which ie governed and protected hy law. College work for college hoys implies daily guidance under prescribed rules; professional work impliee voluntary, eelf-impelled euthusiasm in the acquieition of kuowledge.

Another difficulty arises from the rapid extension of human science. It would be impossible for any one, were he gifted as Leibnitz, or long-lived as Humboldt, to master the details of modern researchee. The average scholar, haviug neither the genius of the one, uor the life-assurance of the other, muet be content to fill a much more restricted field.

I take it for granted that in the State of California, thcre is occasiou to make a plea for the study of modern science. The need of civil, mining and mechanical engineers, of expert geologists and mineralogists, of devoted naturalists, and physicists, of chemists and metallurgists, of geologists, topographers and mapmakere, of agriculturists, mechanics and manufacturers and merchants, well trained for their various callings is now so obvious, that I need not advocate the importance of science in education. Its place is acknowledged. The question is how to secure the hest eort of inetruction, the fullest sequence and relation of studies, the most emiuent teachers, the most complete lahoratories, and the best apparatue; and likewise how to encourage that special proficiency which is indispensable to success in modern scientific professions with that literary culture which makes a scholar, and hefits a gentlemen. Health, wealth, popular intelligence, and the spread of Christiau civilization are eo dependent npon the discoveries of ecience, and the applications of these discoveriee to a thousaud useful arts, that a young and still undeveloped State may well afford to he liberal in the enconragement of this class of studies. How best to secure this scientific education it would take long to tell and I postpone the epecial consideration of this theme for another near occaeion.

But while nature and its laws in all their various aepeote and applicatione are thus engroesing, Man and all his experience and achievemente are likewiee of tranecendent importance. Above all matter is man; above hoth matter and man, ie the "Divinity that shapee our ende, rough hew them ae we will." So that the individual or the institution that regards the natural forces of this glohe only, without observing likewise the intellectual and spiritual forces which are aleo at work, sees only half the world.

I recognize in the fullest degree the need there is of science. Give us more of it and not lese. Encourage the moet thorough and prolonged eearch for the truth which is to he found in the rocke, the eea, the eoil, the air, the sun, and etars; in light and heat, and magnetic forcee, in plants and animale, in the human frame, in phyeical ethnology and in archæolgy, hut let ue also learn the lessons which are embodied in language and literature, in laws and iuetitutione, in doctrines and opinions, in historical progress and international relations. Let language, hietory and literature, oratory, poetry and art still form a chief part of liheral culture, while mathematical, physical and natural sciences be admitted to the rank from which they have long heen excluded.

When the time ehall come to discuse in detail the poesible changee in the university coureee, when an enlarged faculty and increasing funds shall enable the authorities to provide a more generous and varied culture, we shall find the experience of other institutions in a high degree suggestive

At West Point we see the excellence of enperior mathematical training, a well devised course of text-books, rare qualitiee in the chief mathematical inetructor and in his associates, power to prescrihe exactly what the course shall be, life-long honors dependent upon success; hence comes the renown of that school of Engineers from which Bache and Humphreys, and Trowhridge have heen sent forth. The echolar's choice ie Hohson's.

At Harvard, in the undergraduate department liheral provieion is made for instruction in ancient and modern languages, in chemistry, mining, physics, mathematics, in history, metaphysics and ethics, in hotany, mineralogy, and natural hietory. The choice in all this variety of studiee ie given to the scholar, soon after his entrance.

At New Haven, the traditional college course has heen maintained with a cordial recognition of the modern languages and of history; and side by eide with thie classical college, the Sheffield School of Science hae grown up, where scientific etudiee predominate. The scholar chooeee when he enters between the scientific and the classical course; the latter allows but little further freedom of election,—in the Sheffield School, there ie again a choice between eeven different courees.

At Cornell Univereity, there ie the Harvard freedom of choice with easier conditions of admieion to all lines of study hut the classical, with manifold modern appliances and helps for the pureuit of technical and scientific etudiee, and with a generous recognition of history and humanity fostered by the etudies of Preeident and of the illustriove Oxford graduate, who hae there made his home.

At Princeton, eince the acceseion of the able Scotch metaphysician who guides its affairs, required etudiee, mathematical and linguistic as of old, engage the stndent in his first two years; in the last two yeare of hie residence, he eelects one of eeveral prescrihed specialties.

Besides these universitiee and colleges we must also inquire what the independent echools of agriculture and technology are doing, as in Boeton and Amherst, Hoboken and Troy, Urbana and Laneing.

English and German experience will likewise be of valne. Everywhere the problem is one, hut the solutious are manifold, for the conditions are complex and vaguely determined.

The Need of a School of Science.

With all the experience of other placee hefore us it ie my helief that one of the first wants of California is a distinct, complete and well organized school of science and technology, such ae your organic laws contemplate, in which men of eminence shall have the means and leisure to make reeearchee in all the departmeuts of investigation, to whom young men shall resort for traiuing in the etudies which are closely related to the development of minee, agriculture, manufacturee and means of transportation, and from whom the public at large, by the press, by the lecture aud by informal conenltation, may be instructed in the characteristics of this remarkahle country and the mode in which its resources cau he made most serviceable to mankind. My chief anxiety is whether the people of this coast are yet ready to pay for the luxury and the advantage of so serviceahle an institution. It will require a great many teachere, costly laboratories, large funds,—more I fear than the University with all the claims npon its treasury is yet able to command. Perhaps some individual whoee experience has brought him the valne of ench knowledge, and who has an honorahle ambition to have a name among the beuefactors of the State will supplement the resourcee of the University with a generous private gift like those which have done eo mnch for the culture of Eastern youth and the improvement of the Atlantic Statee.

A Plea for History and Language.

[The address next considers the importance of historical and linguistic study—eepecially with reference to the geographical and historical elatione of Califo ruia.]

The recognition which should be given to religion in a State University involves considerations which are not to be encountered in colleges founded by church authorities or by private corporations. The old English colleges, whose traditions New England has gratefully accepted, were the children of the church, and though their doors are no longer shut to nonconformists, their ecclesiastical character is still decided. Harvard College, the mother of all our higher institutions, still bears upeu its escutcheon "Christo et ecclesial," the motto of its founders. Yale College went back to the Old Testement for a symholic watch word, and bears upon its seel, the open oracles inscribed with Hebrew characters. At Nassau Hall, we are told that "in regard to religious truth there will he no uncertain sound." At Cornell University a generous gift has heen accepted for a chapel, with a foundation, if I am rightly informed, which will secure the services of eminent preachers, and with a plan for daily religious worship. But none of these institutions is a State University, though all of them were fostered in their infancy by the kindly nourishment of the public treasury. We are on the contrery the guardians and friends of a State University, estahlished in the midst of a community more varied than almost any in the land. Here ere still seen the traces of the Spanisb pioneers who brought to these shores so long ago, with the symbol of the cross, and the emblematic keys of the Roman pontiff; nearly all the various forms of Christian faith which the Episcopal and non-Episcopal churches of the Reformation have adopted, find here their advocates; there are many among us, likewise, who look for a Messiah yet to come; and crowding into these harbors behold the children of Confucius and the worshipers of the Unknown Gods.

The State, as a body politic, protects the assemblies and the worship of all these bodies; it favors none. How shall it he with the University and the public school which perform the service of the State in the education of the young? Shall religious teaching he excluded from the University, or shall it have a covert end apologetic placo—shall it he an organized force or a silent and all pervadiug influence? Shall its spirit he narrow eud sectarian, or shall it he catholic and free? The difficulty is not felt in Califoruia aloue. It is involved in the toleration of the modern Christian state toward all forms of religious belief, and in its generous provisions for the promotion of education. In meeting the difficulty it may be well to beer in mind that religion includes four different elements, worship, doctrines, precepts end spirit. A religious spirit no ono objects to; it is the spirit which works "outward and not inward, upward and not downward, forward and not backward, and wbich lends a hand;" it is the spirit which "loves justice, shows mercy and walks humbly hefore the Lord;" it is the spirit of truth, of faith, of hope aud of charity; it is the spirit of "peace on earth, good will to meu." We may say as we say of scieuce, the more we have of the genuine the better for mankind. Whatever precepts will tend to cherish the inward spirit and the outward uprightness end unselfishuess which procced from it, all good men will welcome. When we begin to formulete doctrines into creeds and symbols, then comes controversy aud difference—the right wiug against the left wing, the conservative against the liheral, so that an attempt to enforce the doctriues of thie or that ecclesiastical body will be sure to come to grief. The University is no place for sectarian controversy or denominationel zeal. It is a school of learning. But as a school of learning it must teach the history of opinion and helief, it must teech the riso end growth and decay of institutions, it must show how Christian civilization has overcome pagan practices and helief, and hes purified the home, the State, and the relations of nations, modifying laws, usages, manners and language, establishing charities, reforming prisons, securing honesty, virtue and justice. All this should be taught hy scholars and not by partisans. If the body of teachers and scholare imbued by this spirit of truth and cherity will daily essemhle of their own accord to acknowledge their dependence upon Divine wisdom, to chaut a Psalm of David, and to join in the prayer which the Master taught his disciples—who can doubt that this communion of worship will elevate the character of all who engage in it aud of all tho institution to which they belong? So far as this I would have this Univcrsity go, forcing none to attend upon such religious worship, drawing all to it by tbeir own consciousness of its value.

But many would go further than this. Many a parent, many a religious teachcr, many a church desires and insists that, youth at the critical period of college life shall be surrounded by positive, outspoken, and persuasive religious influences. They are afraid of a State University, and long for a denominational college. Hence come the many attempts to promote the higher educatlon, when one united effort would hardly be adequate. But it seeme to me that tho end in view might be secured by hetter methods. Why may not any religious body or association, or private individual, desirous of protecting the young men from temptation and encouraging them in the higher life, estahlish in connection with the University, a home, or hell, or college, which should be controlled according to the founder's views, should be a privileged residence, should be endowed perhaps with prizes and purses. I can imagine on the slopes at Berkeley, a group of students houses, bearing honorable nemes, end made attractive by the convenience of their errangements, the good fellowship within their walls, the privileges of the foundation. I should hope they would not be barracks, or dormitories—but homes, with rooms of common essembly and of private study. I should hope the beth room, and the dining ball would be included in the structure, and if any would go so far as to have a place of light amusement and recreation, I for one, should not object. Within such college halls, associations would be cherished like those of Oriel and Christ Church at Oxford, of South College and Faruam Hell in New Haven. Here too, und r rigbt guidance, the hest of moral and religious influence migbt be promoted. What church, what association, or what generous individual, will be tbe first to establisb such a hall?

Conclusion.

[The address concluded with the question, "What is all this culture for,"—an eulogy of the services which High Schools of learning have rendered to the world, and an appeal for generous confidence and support so that the University of California may become worthy of the great name of the State, and of its leading position in the next or Pacific phase of human civilization.]

SINGULAR EXPLOSION.—Some workmen were recently engaged in a blacksmith ehop, in heating the piston of an engine employed at an Englieh colliery, when a sudden explosion of the iron occurred, by which two men were killed and several othere injured. It was the opinion of the jury of inquest that water had found ite way into some cavity in the piston, which heing suddenly converted into steam by the heat of the forge, caused the explosion.

MINING SALES.—We learn from the Humboldt County *Silver State*, that the Butte mill aud mining company's property, at Rye Patch, has heen sold to a San Francisco Company for a price which rumor ecte at $100,000.

ELECTION.—Tbe St. Patrick Mining Company have elected the following Trustees: Robert Sherwood, (President) W. B. Bourne, J. W. Gaswiler, John F. Boyd and Joel F. Lightner; Superintendent, J. H. Crossman; Secretary, D. A. Jennings.

PATENTS & INVENTIONS.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[FROM OFFICIAL REPORTS TO DEWEY & CO., U. S. AND FOREIGN PATENT AGENTS, AND PUBLISHERS OF THE MINING AND SCIENTIFIC PRESS.]

FOR WEEK ENDING OCTOBER 8TH, 1872.*

STONE-PAVEMENT.—Jacob Bolliger, S. F., Cal.

METHOD OF BLASTING ROCK.—James Brodie and Samuel H. Wheeler, S. F., Cal.

TURBINE WATER-WHEEL. — James Cumming, Ione City, Cal.

COMPOUNN FOR DESTROYING BED-BUGS.—Elizabeth Hooper, Diamond Springs, Cal.

SEWING-MACHINE.—Abednego D. Hopkins, S. F., Cal.

HYDRAULIC ELEVATOR.—Timothy Stebins, S. F., Cal.

SAFETY DEVICE FOR ELEVATORS.—Timothy Stebine, S. F., Cal.

AUTOMATIC BRAKE FOR MACHINERY.—Timothy Stehins, S. F., Cal.

REIN-HOLDER.—Edwin Charles Every Vile, Santa Clara, Cal.

*The patents are not ready for delivery by the Patent Office until some days afterword.

NOTE.—Copics of U. S. and Foreign Patents furnished by DEWEY & Co., in the shortest time possible (by telegraph or otherwise) et the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other ageucy.

New Incorporations.

RED JACKET M Co.—October 31. Location: French District, Owyhee County, Idaho Territory. Capital stock, $2,000,000 in 20,000 sharee Trustees—W. M. Lent, John Boyd, M. J. McDonald, G. W. Grayson and Hill Beachy.

BROWN'S VALLEY CONS. M. Co.—October 31. Locatiou: Yuba County, California. Capital stock, $2,500,000 in 20,000 shares. Trustees—J. M. Livingstou, Geo. W. Bowie, F. B. Stieb, P. S. VenRensslaer aud W. I. Kip, Jr.

WASHINGTON QUICKSILVER M. Co.—Novemher 1. Location: Trinity County, California. Capital stock, $8,000,000 in 81,000 shares. Trustees—George C. Hinckley, A. C. Taylor, J. W. Winter, C. L. Williams and Q. L. Adams.

PORTLAND S. M. Co.—Novemher 2. Location: Ely District, Nevada. Capital stock, $3,000,000 in 30,000 sheres. Trustees—J. W. Gashwiler, Joel F. Lightner, Henry Raymond, B. F. Sides end G. W. Lightner.

YELLOW STONE M. Co.—Novemher 2. Location: Ely District, Nevada. Capital stock, $3,000,000 in 30,000 shares. Trustees—Henry C. Hyde, Geo. W. Allen, Roht. Sherwood, Geo. B. Treadwell and M. A. Sharp.

THE CALIFORNIA HIDE AND LEATHER CO.—Novemher 4. Object: The manufacturing of leather and dealing in hides, leather findings, material, aud all matters appertaining to a hide and leather husiness. Capital stock, $100,000. Trustees—E. W. Park, J. A. Nickerson end William Knight.

THE FIRST CHOICE DIAMOND M. Co.—November 6. Object: Mining for gold, silver and other precious minerale and substances in all tho States and Territories of the United States. Capital stock, $10,000,000 in 100,000 shares. Trustees—John F. Boyd, J. W. Bost, Chas. D. Cleveland, E. M. Fry and F. B. Latham.

San Francisco Metal Market.

PRICES FOR INVOICE.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, Nov. 7, 1872.

IRON.—			
Scotch Pig Iron, ₱ ton	$60 00	@	62 50
White Pig, ₱ ton	65 00	@	70 00
Refined Bar, bad assortment, ₱ lb	— 04½	@	— 5
Refined Bar, good assortment, ₱ lb	— 05	@	— 5½
Boiler, No. 1 to 4	— 05½	@	— 06
Plate, No. 5 to 9	— 06½	@	— 07
Sheet, No. 10 to 13	— 07½	@	— —
Sheet, No. 14 to 20	— 07½	@	— —
Sheet, No. 24 to 27	— 08	@	— —
Horse Shoes	8 00	@	— —
Nail Rod	10		— —
Norway Iron	8		— —
Rolled iron	5		— —
Otber Irons for Blacksmiths, Miners, etc.	5½	@	6½
COPPER.—			
Sheathing, ₱ lb	— —	@	— 45
Sheathing, Yellow	— 28	@	— 30
Sheathing, Old Yellow	— —	@	— 13
Composition Nails	— 28		— 30
Composition Bolts	— 28		— 34
TIN PLATES.—			
Plates, Charcoal, IX ₱ box	18 00	@	— —
Plates, I C Charcoal	14 00		— —
Roofing Plates	18 50		— —
Banca Tin, Slabs, ₱ lb	— 50		— —
STEEL.—English Cast, ₱ lb	— 19		— —
Drill	19		— —
Flat Bar	19		— —
Plough Points	3 75		4 00
Russia (for monld boards)	12½		15
QUICKSILVER.—₱ lb	— 65		— 67½
LEAD.—Pig, ₱ lb	— 5¾		— 6
Sheet	— 10		— —
Pipe	— 9		— 10
Bar	— 6½		— 7
ZINC.—Sheets, ₱ lb	— 11		— 11½
BORAX.—Refined	— 28		— 30
Borax, orude	— 5		— —

Leather Market Report.

SAN FRANCISCO, Thursday, Nov. 7, 1872.

City Tanned Leather, ₱ lb	26@28
Santa Cruz Leather, ₱ lb	26@29
Country Leather, ₱ lb	25@28
Stockton Leather, ₱ lb	26@29

French skins continue firm. All California skins are scarce and bring full prices.

Jodot, 8 Kil., per doz	$60 00@
Jodot, 11 to 19 Kil., per doz	66 00@ 85 00
Jodot, second choice, 11 to 15 Kil. ₱ doz	56 00@ 75 00
Lemoine, 16 to 18 Kil., ₱ doz	75 00@ 77 50
Levin, 12 and 13 Kil., per doz	63 00@ 70 00
Cornellian, 16 to 19 Kil., per doz	63 00@ 65 00
Cornellian, 12 to 14 Kil., per doz	56 00@ 60 00
Orenan Calf, ₱ doz	54 00@
Simon, 18 Kil., ₱ doz	60 00
Simon, 20 Kil. ₱ doz	65 00
Simon, 24 Kil. ₱ doz	72 00
Robert Calf, 7 and 8 Kil	35 00@ 40 00
French Kips, ₱ lb	1 00@ 1 30
California Kip, ₱ doz	55 00 to 70 00
French Sheep, all colors, ₱ doz	8 00@ 15 00
Eastern Calf for Backs, ₱ lb	1 15@ 1 25
Sheep Roans for Toppings, all colors, ₱ doz	9 00@ 13 00
Sheep Roans for Linings, ₱ doz	5 50@ 10 50
California Rnssett Sheep Linings	1 75@ 5 50
Best Jodot Calf Boot Legs, ₱ pair	5 25
Good French Calf Boot Legs, ₱ pair	4 50@ 5 00
French Calf Boot Legs, ₱ pair	4 00
Harness Leather, ₱ lb	30@ 37½
Fair Bridle Leather, ₱ doz	48 00@ 72 00
Skirting Leather, ₱ lb	34@ 37½
Welt Leather, ₱ doz	30 00@ 50 00
Buff Leather, ₱ foot	18@ 21
Wax Side Leather, ₱ foot	20@ 22
Eastern Wax Leather	25

Mining and Other Companies.

Owing to the time necessary to mail the present large edition of the M. & S. Press we are obliged to go to press on Thursday evening—which is the very latest hour we can receive advertisements.

Altona Gravel Mining Company—Location

of works, Grass Valley, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment (No. 4) levied on the third day of October, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Boynton, C W	20	200	$20 00
Boynton, C W	254	18	1 80
Carman, William	102	100	10 00
Carman, William	155	35	3 50
Carman, William	259	12	1 20
Coffman, Mary	240	10	1 00
Coffman, Mary	278	1	10
Dodge, D F	14	400	40 00
Grant, Emanncl	231	40	4 00
Grant, Emanuel	232	20	2 00
Grant, Emanuel	233	10	1 00
Grant, Emanuel	234	10	1 00
Gray, Mrs. L B	240	50	5 00
Gray, Mrs. L B	251	5	50
Jeffree, E B	29	100	10 00
Jeffree, E B	30	100	10 00
Jeffree, E B	154	70	7 00
Jeffree, John T	15	400	40 00
Jeffree, John T	16	200	20 00
Jeffree, John T	35	100	10 00
Jeffree, John T	36	100	10 00
Jeffree, John T	37	100	10 00
Jeffree, John T	38	100	10 00
Jeffree, John T	238	370	37 00
Jeffree, John T	268	125	12 50
Pinkham, S	145	100	10 00
Plukm, S	253	9	90
Sparrow, S J, Trustee	208	25	2 50
Sterling, R W	61	100	10 00
Sterling, R W	62	50	5 00
Sterling, R W	63	50	5 00
Sterling, R W	54	25	2 50
Sterling, R W	55	25	2 50
Sterling, R W	67	25	2 50
Sterling, R W	70	20	2 00
Sterling, R W	71	20	2 00
Sterling, R W	73	10	1 00
Sterling, R W	267	36	3 60
Stokes, W C	215	10	1 00
Stokes, W C	280	1	10
Tardif, William	25	100	10 00
Tardif, William	174	35	3 50
Tardif, William	263	12	1 20
Thomas, Reuben	217	10	1 00
Thomas, Reuben	279	1	10
Wilder, David, Trustee	281	2	20
Wilder, David, Trustee	291	500	50 00
Wright, H N	210	75	7 50

And in accordance with law, and an order of the Board of Trustees, made on the third day of October, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at No. 327 Montgomery street, San Francisco, Cal., on the 25th day of November, 1872, at the hour of 10 o'clock A. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

DAVID WILDER, Secretary.

Office, 28 Merchants' Exchange, California street, San Francisco, Cal. no9-3t

Excelsior Silver Mining Company—Location

of works, Yellow Pine District, Lincoln County, Nevada.

At a meeting of the Trustees of the above named company, held October 29th, 1872, at the office, No. 640 Washington street, San Francisco, it was, on motion, ordered that the following resolution, which was unanimously passed at a meeting of the Stockholders, held on the 28th, 1872, be advertised for one month in the Mining and Scientific Press, and a personal notice served on each member:

Resolved—That we, the Stockholders representing in our individual names 4,480 shares of the Excelsior Silver Mining Company, do hereby mutually agree to return our individual certificate or certificates of stock now held by us and standing in our names, agreeing that upon a pro rata division of the entire stock between the stockholder, that we will individually pay a monthly assessment of ten dollars ($10) per month for one year, unless sooner rescinded by the Trustees of said mine.

Also, that said monthly assessment shall be paid on or before the tenth day of each month, commencing November 10th, 1872. By order of Trustees,

no2-1m W. A. KOLLMYER, Secretary.

Golden Rule Mining Company—Location

of works: Chili Hill, Tuolumne County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of November, 1872, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary at the office of the Company 432 Montgomery street, (Room No. 5) San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the third day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the fourth day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. B RUSSELL, Secretary.

Office, Room No. 5, 432 Montgomery street, San Francisco, Cal.

Indus Gold and Silver Mining Company—

Location of works, Virginia City, Storey County, Nevada.

NOTICE is hereby given that at a meeting of the Board of Trustees of said Company, held on the 19th day of October, 1872, an assessment of fifty cents per share was levied upon the capital stock of said company, payable immediately, in gold coin of the United States, to the Secretary, at No. 24 Merchants' Exchange, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 23d day of November, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 16th day of December, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office, 24 Merchants' Exchange, California street, San Francisco, Cal DAVID WILDER, Secretary. oc26-4t

Kincaid Flat Mining Company—Location

of works, Tuolumne County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said company, held on the 18th day of October, 1872, an assessment of three dollars per share was levied upon the capital stock of said company, payable immediately, in United States gold coin, to the Secretary, at his office, No. 220 Clay street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the 21st day of November, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the tenth day of December, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees. R. H. CORNELL, Secretary.

Office—No. 220 Clay street, San Francisco, Cal. oc19-4t

Lady Franklin Gold and Silver Mining

Company—Location of Works, Silver Mountain Mining District, Alpine County, State of California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 24th day of September, 1872, the several amounts set opposite the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
James Gallagher	46	5	$2 50
James Gallagher	48	5	2 50
Andrew J Field	80	5	2 50
Andrew J Field	182	2½	1 25
B L Ostareno	72	5	2 50
Myer Davidson	107	25	12 50
Josiah Legro	117	5	2 50
Josiah Legro	157	5	2 50
Josiah Legro	167	10	5 00
Josiah Legro	169	2	1 00
Richard Inch	128	10	5 00
Richard Inch	129	10	5 00
Richard Inch	130	20	5 00
Richard Inch	131	5	2 50
Richard Inch	132	5	2 50
Richard Inch	133	5	2 50
Richard Inch	134	16¼	8 12
Phillip Welhe	149	5	2 50
A McGregor	143	4	2 00
J K Edwards	144	15	7 50
G C McAllister	159	3	1 50
George Day	171	5	2 50
D E Swinerton	177	3½	1 75
D E Swinerton	230	1½	75
D E Swinerton	232	5	2 50
P Lewis	184	4	2 00
Thomas Radford	187	10	5 00
William J Thomas	201	10	5 00
William J Thomas	202	5	2 50
W N Lee	200	5	2 50
J C E Klepzig	203	20	10 00
J C E Klepzig	204	10	5 00
J C E Klepzig	205	10	5 00
J C E Klepzig	206	10	5 00
J C E Klepzig	207	10	5 00
J C E Klepzig	208	10	5 00
J C E Klepzig	209	10	5 00
J C E Klepzig	210	10	5 00
J C E Klepzig	211	10	5 00
Lewis Fisher	214	10	5 00
Lewis Fisher	215	5	2 50
Frank Rabel	218	2	1 00
E J Bacon	231	10	5 00
William Gallagher	233	10	5 00
O R Callender	234	2	1 00
James Wilson	250	5	2 50
James Wilson	246	5	2 50
William Blacklock	249	5	2 50
John Swinerton	251	5	2 50
M Marks	255	4	2 00
P W Hogan	263	20	10 00
E Brian	264	70	35 00

And in accordance with law, and an order of the Board of Trustees, made on the 24th day of September, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at the office of the Company, 507 Montgomery street, San Francisco, California, on the 18th day of November, 1872, at 1 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of the sale.

J. S. LUTY, Secretary.

Office, 507 Montgomery street, San Francisco, California. no9-2t

Louise Mining Company---Location of

Works, Ely Mining District, Pioche, Lincoln County, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment, No. 3, levied on the 14th day of September, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Allen, C R, Trustee	336	50	$25 00
Allen, C R, Trustee	357	50	25 00
Allen, C R, Trustee	370	50	25 00
Baur, Otto	164	50	25 00
Baur, Otto	165	50	25 00
Baur, Otto	165	40	20 00
Baur, Otto	167	40	20 00
Burke, John	211	50	25 00
Burke, John	214	50	25 00
Burke, John	216	50	25 00
Burke, John	217	100	50 00
Burke, John	218	200	100 00
Burke, John	224	100	50 00
Baker, Henry, Trustee	275	5	2 50
Buttler, Jessie H	498	100	50 00
Coburn, S A	86	100	50 00
Coburn, S A	87	100	50 00
Coburn, S A	90	100	50 00
Coburn, S A	95	100	50 00
Coburn, S A	321	150	75 00
Chase, A K, Trustee	110	25	12 50
Chase, A K, Trustee	118	50	25 00
Chase, A K, Trustee	120	50	25 00
Chase, A K, Trustee	501	35	18 00
Cook, Chas. W, Trustee	249	200	100 00
Cook, Chas. W, Trustee	251	100	50 00
Cook, Chas. W, Trustee	252	200	100 00
Cook, Chas. W, Trustee	253	200	100 00
Cook, Chas. W, Trustee	254	100	50 00
Cook, Chas. W, Trustee	255	50	25 00
Cook, Chas. W, Trustee	250	100	50 00
Cook, Chas. W, Trustee	257	100	50 00
Cook, Chas. W, Trustee	258	200	100 00
Childs, Geo. E	174	100	50 00
Cavallier, J P, Trustee	399	500	250 00
Cavallier, J P, Trustee	400	200	100 00
Cavallier, J P, Trustee	401	300	150 00
Cavallier, J P, Trustee	441	50	25 00
Clark, L N	404	100	50 00
Cook and Page, Trustees	487	200	100 00
Dore, B, Trustee	139	100	50 00
Duval, W S, Trustee	391	50	25 00
Dixon, S, Trustee	397	50	25 00
Fawcett, S, Trustee	499	50	25 00
Gibbons, Henry, Jr	193	100	50 00
Gibbons, Henry, Jr	196	100	50 00
Gibbons, Henry, Jr	197	100	50 00
Geleich, J	155	50	25 00
Geleich, V	157	50	25 00
Geleich, V	158	50	25 00
Geleich, V	159	50	25 00
Grattan, C M	227	50	25 00
Grattan, C M	228	100	50 00
Grattan, C M	229	100	50 00
Golding, J	504	5	2 50
Golding, J	505	5	2 50
Golding, J	505	4	2 00
Golding, J	507	5	2 50
Golly, Leon, Trustee	430	100	50 00
Golly, Leon, Trustee	431	100	50 00
Golly, Leon, Trustee	433	300	150 00
Hatch, A D, Trustee	317	70	35 00
Herrlnghl, B	299	50	25 00
Hayward, Mary J	375	25	12 50
Hayward, Mary J	377	25	12 50
Hayward, Mary J	378	25	12 50
Hayward, Mary J	379	25	12 50
Hayward, Mary J	380	25	12 50
Hayward, Mary J	381	25	12 50
Hayward, Mary J	382	25	12 50
Haywood, Mary J	383	25	12 50
Hayward, Mary J	384	25	12 50
Hayward, Mary J	385	25	12 50
Hayward, Mary J	386	25	12 50
Hayes, Thos R	387	25	12 50
Hawkins, James, Trustee	394	50	25 00
Hussey, J L, Trustee	435	100	50 00
Hussey, J L, Trustee	449	200	100 00
Hussey, J L, Trustee	450	100	50 00
Herzberg, J, Trustee	457	100	50 00
Herzberg, J, Trustee	539	50	25 00
Huhbard, A O	520	1	50
Hewett, Georgiana Mrs	390	10	5 00
Ingerson, A W	244	50	25 00
Ingerson, A W	248	100	50 00
Ingerson, A W	608	88	18 00
Kenney, C A, Trustee	345	50	25 00
Lee, D	201	20	10 00
Lissak, L S, Trustee	338	100	50 00
Lissak, L S, Trustee	375	50	25 00
Lincoln and Howard, Trs	347	100	50 00
Lacour, L, Trustee	438	100	50 00
Lazare, L J, Trustee	524	50	25 00
Magee, John F	207	100	50 00
Maurice, W R, Trustee	388	50	25 00
Maurice, W R, Trustee	389	50	25 00
McGregor, Jos	497	100	50 00
Morganstine, S	519	15	7 50
Badlop, L	202	20	10 00
Raymond, S A	125	100	50 00
Raymond, S A	128	100	50 00
Raymond, S A	129	100	50 00
Raymoud, S A	131	100	50 00
Raymond, S A	132	100	50 00
Raymond, S A	133	100	50 00
Raymond, S A	134	100	50 00
Raymond, S A	140	100	50 00
Raymond, S A	144	70	38 00
Richardson, E A, Trustee	302	50	25 00
Richardson, E A, Trustee	323	50	25 00
Richardson, E A, Trustee	324	50	25 00
Richardson, E A, Trustee	328	100	50 00
Richardson, E A, Trustee	350	150	75 00
Richardson, E A, Trustee	365	200	100 00
Richardson, E A, Trustee	405	100	50 00
Richardson, E A, Trustee	408	100	50 00
Richardson, E A, Trustee	410	50	25 00
Richardson, E A, Trustee	451	300	150 00
Richardson, E A, Trustee	463	100	50 00
Richardson, E A, Trustee	467	30	15 00
Richardson, E A, Trustee	470	100	50 00
Richardson, E A, Trustee	494	10	5 00
Richardson, E A, Trustee	490	200	100 00
Richardson, E A, Trustee	518	100	50 00
Richardson, E A, Trustee	525	200	100 00
Richardson, E A, Trustee	526	100	50 00
Richardson, E A, Trustee	529	100	50 00
Richardson, E A, Trustee	531	100	50 00
Richardson, E A, Trustee	533	200	100 00
Richardson, E A, Trustee	535	50	25 00
Richardson, W J	141	100	50 00
Richardson, W J	142	10	5 00
Richardson, W J	143	10	5 00
Richardson, W J	144	10	5 00
Richardson, W J	145	10	5 00
Richardson, W J	146	10	5 00
Richardson, W J	145	10	5 00
Rose, L S, Trustee	474	100	50 00
Sieeper, Geo, Trustee	341	100	50 00
Sanborn, T C, Trustee	438	50	25 00
Sanborn, T C, Trustee	450	100	50 00
Sanborn, T C, Trustee	453	50	25 00
Sanborn, T C, Trustee	475	100	50 00
Sanborn, T C, Trustee	479	100	50 00
Sanborn, T C, Trustee	482	100	50 00
Sanborn, T C, Trustee	480	50	25 00
Sanborn, T C, Trustee	545	100	50 00
Sherwood, B F&Co, Trustee	513	100	50 00
Sherwood, B F&Co, Trustee	515	100	50 00
Sherwood, B F&Co, Trustee	516	100	50 00
Sherwood, B F&Co, Trustee	517	100	50 00
Wintcr, T P	511	5	2 50
Watson, W H, Trustee	343	50	25 00
Watson, W H, Trustee	344	150	75 00
Watson, W H, Trustee	412	100	50 00
Watson, W H, Trustee	414	100	50 00
Watson, W H, Trustee	417	100	50 00
Watsou, W H, Trustee	418	100	50 00
Watson, W H, Trustee	419	100	50 00
Watson, W H, Trustee	420	100	50 00
Watson, W H, Trustee	423	100	50 00
Watson, W H, Trustee	425	200	100 00
Watson, W H, Trustee	427	200	100 00
Watson, W E, Trustee	389	50	25 00
Wilson, Wm M	304	50	25 00
Wilson, Wm M	307	100	50 00
Wilscn, Wm M	308	100	50 00
Wilson, Wm M	313	25	12 50
Wilson, Wm M	314	25	12 50
Wilson, Wm M	315	25	12 50
Wilson, Wm M	318	25	12 50
Wessling, Wm, Trustee	455	100	50 00
White, U, Trustee	492	30	15 00

And in accordance with law, and an order of the Board of Trustees, made on the fourteenth day of September, A. D. 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, room 5 and 5, No. 302 Montgomery street, San Francisco, California, on Saturday, the ninth day of November, A. D. 1872, at the hour of two o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

WM. H. WATSON, Secrctary.

Office, Room 5 and 8, No. 302 Montgomery street, San Francisco, California. oc20-3w

Noonday Silver MIning Company---Location

of works, White Pine District, Nevada.

Notice is hereby given, that a meeting of the Board of Trustees of said Company, held on the 11th day of October, 1872, an assessment (No. 12) of twenty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No 28 Hayward's Building, California street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on the 15th day of November, 1872, shall be deemed delinquent, and will be duly advised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the 4th day of December, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees,

CHAS. H. FISH, Secretary.

Office—Room No. 28, Hayward's Building, No. 419 California street, San Francisco, California. oc19

Ohio Consolidated Gold Mining Company

—Location of works, West Point, Calaveras County, Cal.

NOTICE.—There are delinqucnt upon the following describ d stock, on account of assessment levied on the 24th day of September, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Geo O Ecker	71	50	5 00
Geo O Ecker	184	500	50 00
1 K Carlton	12	500	00 00
D E Spencer	23	100	10 00
D E Spencer	24	100	10 00
D E Spencer	25	100	10 00
D E Spencer	26	100	10 00
D E Spencer	27	100	10 00
D E Spencer	28	50	5 00
D E Spencer	29	50	5 00
D E Spencer	30	50	5 00
D E Spencer	31	50	5 00
D E Spencer	32	50	5 00
D E Spencer	33	50	5 00
D E Spencer	34	50	5 00
D E Spencer	35	50	5 00
D E Spencer	35	50	5 00
D E Spencer	37	50	5 00
Joseph Fulton	210	550	55 00
E A Richardson, Trustee	50	490	49 00
E A Richardson, Trustee	58	100	10 00
E A Richardson, Trustee	70	100	10 00
E A Richardson, Trustee	52	500	50 00
E A Richardson, Trustee	54	500	50 00
E A Richardson, Trustee	55	500	50 00
Chas E Fairbanks	52	500	50 00
Chas E Fairbanks	53	400	40 00
Chas E Fairbanks	54	300	30 00
Chas E Fairbanks	55	200	20 00
Chas E Fairbanks	56	200	20 00
Emma Hinck	57	100	10 00
Emma Hinck	58	100	10 00
Emma Hinck	59	100	10 00
Emma Hinck	80	100	10 00
Emma Hinck	51	100	10 00
Wm T Reynolds	234	250	25 00
W A Knapp, Trustee	78	50	8 00
W A Knapp, Trustee	77	50	5 00
W A Knapp, Trustee	80	100	10 00
W A Knapp, Trustee	90	100	10 00
W A Knapp, Trustee, unlssued		850	85 00
A M Daley	82	50	5 00
A M Daley	83	50	5 00
Geo H Willard	88	100	10 00
D M Hosmer	89	500	50 00
D M Hosmer	168	100	10 00
D M Hosmer	169	100	10 00
D M Hosmer	170	100	10 00
D M Hosmer	171	100	10 00
D M Hosmer	172	100	10 00
A H Hubbard	94	100	10 00
P Macdonald	98	50	5 00
D Macdonald	99	50	5 00
D Macdonald	100	50	5 00
D Macdonald	104	50	5 00
D Macdonald	108	100	10 00
D Macdonald	109	100	10 00
D MacDonald	110	100	10 00
D Macdonald	111	100	10 00
D Macdonald	113	100	10 00
D Macdonald	114	100	10 00
D Macdonald	118	25	2 50
D Macdonald	119	25	2 50
D Macdonald	121	25	2 50
D Macdonald	122	25	2 50
D Macdonald	123	25	2 50
D Macdonald	124	25	2 50
D Macdonald	125	25	2 50
D Macdonald	126	25	2 50
A Bateman, unissued		10	1 00
R P Franklin	186	50	5 00
R P Rankliu	187	50	5 00
Jno F Taylor	188	200	20 00
A Bateman, unissued		10	1 00
R P Franklin	186	50	5 00
R P Franklin	187	50	5 00
Jno F Taylor	188	200	20 00
B Dore	8	100	10 00
B Dore	161	50	5 00
B Dorn	162	100	10 00
B Dore	189	100	10 00
B Dore	190	100	10 00
B Dore	191	100	10 00
B Dore	192	50	5 00
B Dore	193	50	5 00
B Dore	194	200	20 00
Geo W Stewart	205	1500	150 00
Jno H Wood, Trustee	208	100	10 00
Jno H Wood, Trustee	212	100	10 00
Jno H Wood, Trustee	225	100	10 00
Jno H Wood, Trustee	227	300	30 00
Jno H Wood, Trustee	231	100	10 00
Jno H Wood, Trustee	232	200	20 00
W F Leon	228	500	50 00
W F Leon	229	250	25 00
W F Leon	230	250	25 00
Jas F Ward	217	500	50 00
Jas F Ward	218	100	10 00
Jas F Ward	219	100	10 00
Jas F Ward	220	100	10 00
Jas F Ward	221	50	5 00
Jas F Ward	222	50	5 00
Jas F Ward	223	50	5 00
Jas F Ward	224	50	5 00
H P Osgood	233	250	25 00

And in accordance with law, and an order of the Board of Trustees, made on the 24th day of September, 1872, so many shares of each parcel of said Stock as may be necessary, will be sold at public auction, at the office of the Company, room No. 1, 432 Montgomery street, San Francisco, Cal., on Saturday, the 23d day of November, 1872, at the hour of 1 o'clock P. M. of said day, to pay said delinquent Assessment thereon, together with costs of advertising and expenses of sale.

W. A KNAPP, Secretary.

Office, 432 Montgomery street, over Donohue & Kelly's Bank. no2-3t.

Pocahontas Gold Mining Company—Location

of works, Mud Springs, El Dorado County, Cal.

NOTICE.—There are delinquent upon the following described stock, on account of assessment (No. 6) levied on the 17th day of September, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Mott, E B, Jr	37	200	100 00
Mott, E B, Jr	38	100	50 00
Mott, E B, Jr	39	50	25 00
Mott, E B, Jr	40	50	25 00
Mott, E B, Jr	56	28	14 00

And in accordance with law, and an order of the Board of Trustees, made on the 17th day of September, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the company, room No. 4, No. 401 California street, San Francisco, California, on Monday, the 18th day of November, 1872, at the hour of one o'clock, P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

DAVID A. JENNINGS, Secretary.

Office, Room No. 4, No. 401 California street, San Francisco, Cal. no2-3t

Silver Wave Mining Company—Location

of works, White Pine Mining District, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment (No. 9) levied on the 21st day of Sepiomber, 1872, the several amounts set opposite the names of the respectivo shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Balcom, C F, Trustee	522	50	$50 00
Balcom, C F, Trustee	523	50	50 00
Barton, W H, Trustee	352	200	200 00
Barton, W H, Trustee	375	10	10 00
Barton, W H, Trustee	490	50	50 00
Breed, H L, Trustee	516	20	20 00
Crocker, J H, Trustee	489	50	50 00
Crocker, J H, Trustee	491	20	20 00
Crocker, J H, Trustee	492	100	100 00
Crocker, J H, Trustee	493	50	50 00
Croxall, J D	449	100	100 00
Eyre, E E, Trustee	507	50	50 00
Fogle, L O, Trustee	483	100	100 00
Fogle, L C, Trustee	484	100	100 00
Fogle, L C, Trustee	485	100	100 00
Holmes, H J	511	447	447 00
Hopkins, T R	521	90	90 00
Loveland, L F, Trustee	247	50	50 00
Martin, M S, Trustee	199	100	100 00
Martin, M S, Trustee	439	20	20 00
Perkins, J E	454	898	598 00
Perkins, J E, Trustee	337	500	500 00
Richardson, E A, Trustee	476	100	100 00
Richardson, E A, Trustee	485	80	80 00
Richardson, E A, Trustee	494	2000	2000 00
Richardson, E A, Trustee	495	50	50 00
Richardson, E A, Trustee	497	50	50 00
Richardson, E A, Trustee	498	95	95 00
Richardson, E A, Trustee	499	100	100 00
Richardsou, E A, Trustee	504	75	75 00
Richardson, E A, Trustee	520	100	100 00
Richardson, E A, Trustee	524	300	300 00
Richardson, E A, Trustee	525	86	86 00
Robertson, Thos B, Trustee	519	300	300 00
Tibbey, E S, Trustee	512	100	100 00
Tibbey, E S, Trustee	513	100	100 00
Tibbey, E S, Trustee	514	100	100 00
Tibber, E S, Trustee	515	100	100 00
White, Jas T	399	12	12 00

And in accordance with law, and an order of the Board of Trustees, made on the 21st day of September, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the office of the company, on Monday, the 25th day of November, 1872, at the hour of two o'clock, P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. W. CLARK, Secretary.

Office, 418 California street, San Francisco. no2-3t

Other incorporation adv's on page 304.

Machinists and Foundries.

ESTABLISHED 1851.

PACIFIC IRON WORKS,

First and Fremont streets,

SAN FRANCISCO

IRA P. RANKIN, A. P. BRAYTON,
GEO. W. FOGG, Superintendent.

Steam Engines and Boilers,

MARINE AND STATIONARY,

IRON AND BRASS CASTINGS

Mining Machinsry of Evsry Dsscription,

And all othsr olassss of work gsnerally dons at first-class sstahliahmsnts, manufactursd by us at the lowsst prices, and of the hsst quality.

☞ Particular attention paid to Jobbing Work and Repairs.

N. B.—Sols Agents for sals of HUNTOON'S CELEBRATED PATENT GOVERNOR.

10v20-3m GODDARD & CO.

FULTON
Foundry and Iron Works.

HINCKLEY & CO.,

MANUFACTURERS OF

STEAM ENGINES,

Quartz, Flour and Saw Mills,

ayes' Improved Steam Pump, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

N. E. corner of Tehama and Fremont streets, above Howard street, San Francisco. 3-qy

GEORGE T. PRACY,
MACHINE WORKS,

109 and 111 Mission Street,

SAN FRANCISCO.

These Works have lately been increased, by additional Tools, and we are now able to turn out any kind of work, equal to and cheaper than any establishment in the State; that is to say:—

STEAM ENGINES,
Flour and Saw Mills,
QUARTZ MACHINERY
Printing Presses,

AND MACHINERY MADE OF EVERY DESCRIPTION.

Improved Safety Store Hoists,

Fitted with Cutting's Patent Cams, uncqualsd for safety, convenience and cheapness. This Hoist can he built for ahout half the price of any other in use. To be seen at HAWLEY & CO.'S.

ALSO, MANUFACTURER AND SOLE AGENT FOR

Pracy's Celebrated Governor.

TURNING LATHES, Etc., constantly on hand.

4v23tf

UNION IRON WORKS,

Sacramento.

ROOT, NEILSON & CO.,

MANUFACTURERS OF

STEAM ENGINES, BOILERS,

CROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR

Dunbar's Patent Self-Adjusting Steam Piston

PACKING, for nsw and old Cylinders.

And all kinds of Mining Machinery.

Front Street, between N and O streets,

SACRAMENTO CITY.

PACIFIC
Rolling Mill Company,

SAN FRANCISCO, CAL.

Established for the Manufacture of

RAILROAD AND OTHER IRON
—AND—
Every Variety of Shafting,

Embracing ALL SIZES f

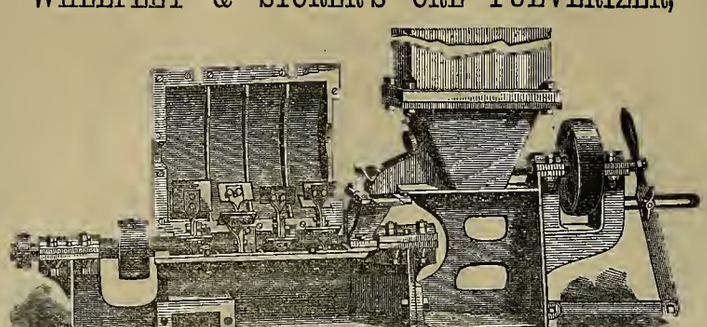
Steamboat Shafts, Cranks, Piston and Connecting Rods, Car and Locomotive Axles and Frames
—ALSO—
HAMMERED IRON

Of every description and sizs.

☞ Orders addrssed to PACIFIC ROLLING MILL COMPANY Post Office, San Francisco, Cal., will receive prom t attention

☞ The highestprice paid for Scrap Iron 9v143

WHELPLEY & STORER'S ORE PULVERIZER,



For Reducing Ores to Fine Powder.

OFFICE OF SWANSEA MELTING AND REFINING COMPANY OF CHICAGO.
CHICAGO, July 15, 1872.

L. P. DODGE, Esq., Agent for Messrs. WHELPLEY & STORER—Dsar Sir: Yonr communication of ths 10th instant is at hand. In reply would say that ws have been running a Whslpley & Storsr Pulverizer for ths last six months, grinding ores of different kinds, some of thsm exceedingly hard Ths oparation of ths Pulverizer has heen, in every rsspect, a complote success, grinding very fins, with but littls power required to drivs it, and hut slight expense for wearing parts. Ws cordially recommend them to all parties requiring a Pulverizer for mininger other operailons. Respectfully' J. W. JONES, Superintendent, etc.

May be seen in practical operation on Main street, betwesn Howard and Folsom, San Francisco.
This Machinery has been adopted hy nearly all ths Eastern reduction works for reducing ores.
Parties purchasing machinery will find it for their interest to examine this before purchasing elsewhere.

9v25-3m GEO. D. WYMAN, Agent Pacific Coast.

THE LIGHTNING MILL.

THE
LIGHTNING MILL
For Pulverizing Quartz,

"Charleston Rock," and all Nativs Phosphates, Flint, Feldspar, Iron Ors, Manganess, Antimony, Carhon, Corundum, Old Crucibles, Barytes, Brimstons, Slats, Soapstone, Graphite, Glass, Marble, Plastsr, Anthracite and Bituminous Coals, etc.

WM. STEWART'S

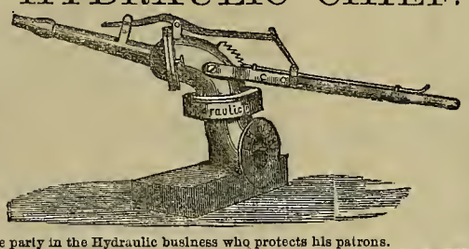
Patent Bone Mills and Crushers.

For Grinding Bonss, Rock, Quartz, and all hard substances; also, Corn, Wheat, Oats, Barley, Coffee, Spices, stc.

WALKER BROS. & CO., Twenty-third and Wood Streets, Philadelphia, Sols Manufacturers of Stewart's Celebrated Patsnt Bons Mills and Crushers, A. W. Strauh & Co.'s Patent Rsvolution French Burr Mill and A. Duval's Patent Centrifugal Pumps.

HYDRAULIC CHIEF.

FISHER'S
KNUCKLE
JOINT
ANN
NOZZLE
IS THE
Cheapest and Best
Hydraulic Machins
in uso.



MACHINES
Manufactured
TO ORDER,
to throw from
One
to an
eight-inch
STREAM.

The only reliable party in the Hydraulic business who protects his patrons.

9v23-tf Addrsss F. H. FISHER, Nevada, Cal.

HYDRAULIC MINERS, TAKE NOTICE—I hsrsby caution Miners and Manufacturers against making, buying, selling or using a Hydraulic Machins or Joint known as ths Littls Giant, manufactured and sold hy R. R. & J. Craig and Richard Hoskin, as ths samo is an infringement upon ths invsntion of ths machins known as FISHER'S HYDRAULIC CHIEF, secured by Letters Patent, No. 110,222, dated Dec. 20, 1870. All parties participating in such infringements will hs rigorously prosecuted. Nevada, Jan. 13th. F. H. FISHER.

CAMERON'S
MINING STEAM PUMPS.

DAVID STODDART,

114 Beale Street, - - - - - - - - - SAN FRANCISCO.

Notice is hereby given, that the copartnership heretofors existing hetween A. J. Severance, Charles W. Randall and J. Gus. Burt, under ths firm name of "Severance, Holt & Co.," is this day dissolvsd by mutual consent. A. J. Severance, having purchassd all the interest of his late partnsrs, will continue ths business of manufacturing and selling Diamond Drills as hefore, under the styls of A. J. Sevsrance & Co.

Dated San Francisco, Nov. 24, 1871.
Office, 315 California street. A. J. SEVERANCE,
CHAS. H. RANDALL.
22-v23-tf J. GUS. BURT.

OCCIDENTAL FOUNDRY,

137 and 139 First st., nsar ths Gas Works, San Francisco.

STEIGER & BOLAND,

IRON FOUNDERS.

IRON CASTINGS of all descriptions at short notice.

NOTICE.—Particular attention paid to the making Superior Shoes and Diss. 3v24-3m

NOTICE.

THE PROPRIETORS OF THE

VULCAN IRON WORKS

HAVING RECENTLY REFITTED THEIR Shops with New Toole of late and modern improvements, have facilities unequalled by any establishment in San Francisco, for turning out with dispatch all classes of machinery used on the Pacific Coast.

The variety and completeness of our Patterns enable us to supply the general wante of the Pacific Statee and Territoriee at the lowest poesible rates.

Office—135 and 137 Fremont St.,

BETWEEN HOWARD AND MISSION, S. F.

ARNOT, BIRCH & CO.,

Proprietors.

WM. H. BIRCH, Superintendent.

N. D. ARNOT, Manager.

12v25-tf

GEO. W. PRESCOTT. O. W. SCHEIDEL. W. E. ECKART.

PRESCOTT, SCHEIDELL & CO.,

MARYSVILLE FOUNDRY.

Cornsr of B and Fourth strests, Marysvills, Cal.

MANUFACTURERS OF

STEAM ENGINES,

STATIONARY AND PORTABLE

SAW AND GRIST MILLS,

Hydraulic Machinery,

Quartz Crushing and Amalgamating Machinery

Of svsry dsscription, constantly on hand.

Plans and sstimatss furnished upon application. Repairs upon all kinds of Machinery promptly mads, and at moderats charges.

Having unrivalled facilities, ws are prepared to maks to ordsr, at short notice, anything required in our line.

Specimens of our work may be seen in all the mining regions on this coast.

FOUNDERS AND MACHINISTS.

TYRRELL & CUMMINGS, PROPRIETORS

Union Iron Works,

No. 320 South C street.....on the Divids, VIRGINIA, NEV.

Manufacture Mill and Mining Machinery,

From the Smallest to the Largest Capacity, on the Shortest Notice, and Gnaranty Satisfaction.

N. B.—Eastern Nsvada and Utah Millmen, patronize near homs and save money. 11v25-3m

CALIFORNIA BRASS FOUNDRY,

No. 125 First street, opposite Minna,

SAN FRANCISCO.

ALL KINDS of Brass, Composition, Zinc, and Babbitt Meta Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Gongeof superiortone. All kindsof Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch
☞ PRICES MODERATE. ☜
J. H. WEED. V. KINGWELL.

THOMPSON BROTHERS,

EUREKA FOUNDRY,

129 and 131 Beals street, between Mission and Howard, San Francisco.

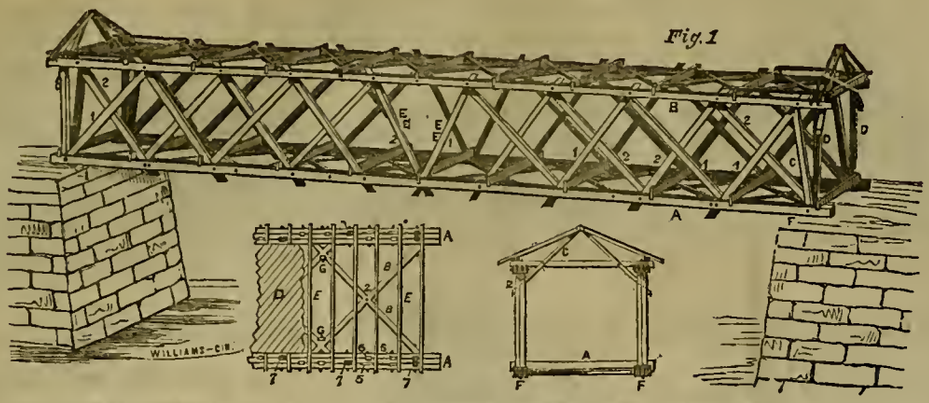
LIGHT AND HEAVY CASTINGS,

of svsry dsscription, manufactured. 24v16qr

☞ BUY BARBER'S BIT BRACE.

PACIFIC BRIDGE COMPANY,

Fig. 1



WORKS NEAR SOUTH POINT MILL, BERRY STREET, SAN FRANCISCO, CAL.

Are Prepared, with Superior Machinery, to Manufacture and Build all kinds of Bridges on Smith's, Howe's, and other Improved Plans. Framing of all kinds done by Machinery.

The Smith Bridges have been thoroughly teeted in the East for Three Yeare, and wherever tried have proved superior to any other Bridge in the following points:

Being built of wood entirely, they are not affected by change of temperatures.

The timber used is placed so directly in the line of strain, that less material is required to support the eams load.

It is not perceptibly affected by shrinkage. It is ths most Economical Bridgs built. It is adapted to any practicabls LENGTH OF SPAN.

Plans, Specifications and Terms will be sent to any County, Township or Person wishing to build a Bridgs, and no charge mads unless the Plan is nsed. For all Public Bridges the Plan will always be open to competition.

Smith's celebrated CAST IRON PIER, economical, and adapted to heavy currents, built at low ratee.

C. H. GORRILL, Secretary. **W. H. GORRILL, President.**

H. J. BOOTH & CO.,
UNION IRON WORKS,

(Tbe Oldeet and most Extensive Foundry on tbe Pacido Coast).

Cor. First and Mission Sts.,
SAN FRANCISCO.

Marine, Locomotive and Stationary Engines Quartz Cruehing and Amalgamating Machines, Mill Irone and Braes rnd Iron Castings, of svsry dsscription, mads to order.

Steamboat Rspairing, Boilsr Making, Turning and Finishing,
EXECUTED WITH DISPATCH.

Beet Sugar Machinery complete in every part—made a specialty.

OIL MACHINERY.

A complete set of Machinery of our own design and patent for extracting oil from Castor Bean, dispensing with Hair Cloth. Also Machinery for Flax Seed Oil, Mustard Seed Oil, and Sun Flower Seed Oil.

MARBLE MACHINERY

For sawing Marble of any thicknese or size.

Irrigating Pumps. Steam Pumps.

Plans, Estimates, and Advice promptly snpplied.

H. J. BOOTH. GEO. W. PRESCOTT. IRVING M. SCOTT
4v24-1yelamr

THE RISDON
Iron and Locomotive Works.

INCORPORATED.....APRIL 30, 1868.
CAPITAL.....$1,000,000.

LOCATION OF WORKS:
Corner of Beale and Howard Streets,
SAN FRANCISCO.

Manufactnrers of Steam Engines, Qnartz and Flour Mill Machinery, Steam Boilers (Marine, Locomotive and Stationary), Marine Engines (High and Low Pressure). All kinds of light and heavy Castings at lowest prices. Cams and Tappets, witb chilled faces, guaranteed 40 per cent. mors durable than ordinary iron.

Directors:

Joseph Moore, O. J. Brenham, O. E. McLane,
Wm. Norrie, Wm. H. Taylor, Lloyd Tevis,
Jamce D. Walker.

WM. H. TAYLOR.....President
JOSEPH MOORE..Vice-Preeidsnt and Superintendent
LEWIS R. McAD.....Secretary
9v17-ly

POWER, TAINTER & CO.,

MANUFACTURERS OF

WOOD-WORKING MACHINERY.

3003 Cbestnut street, (West end Chestnut etreet Bridgs)
PHILADELPHIA.

☞ Woodworth Planers a Specialty. 4v25-3m

California File Manuf'g Co.

Potrero, Solano street, bet. Tennessee and Minnesota streets, SAN FRANCISCO.

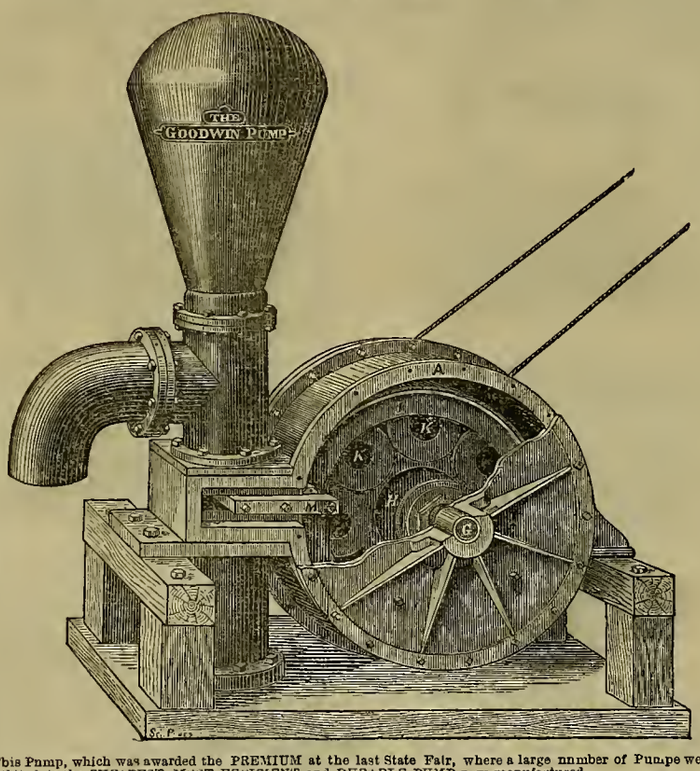
Manufacturers of Nsw Files.

Old Filee re-cut and warranted equal to nsw.

REAPER AND MOWER SECTIONS, BARS AND KNIVES COMPLETE,

at a saving of 50 per cent. Ordere from tbe country promptly attended to. 9v19-by

THE GOODWIN PUMP.



Tbis Pnmp, which was awarded the PREMIUM at the last State Fair, where a large nnmber of Pumps were exhibited, is the CHEAPEST, MOST EFFICIENT and DURABLE PUMP now manufactured.

We are rapidly increasing our Patterns and extending our facilities for manufacturing, but bave not yet been able to fully eupply the demand. As our Pump has no valves, it is the bset Pump for mines wbere water containing sand or sediment, or where bot liquids have to he pumped.

It is Unsurpassed for Hydraulic Mining,

And will throw a stream of from two to six hundred inchee of water with a force equal to a fall of two hnndred and fif y feet. It is peculiarly adapted to windmills for irrigating, or domestic purposes, and is equally as efficient and noiseless at a high or low speed, the water raised being in the ratio of its revolutions. Our large irrigating Pumps will throw twenty thousand gallons per minute.

PUMPS FOR EVERY PURPOSE AND ALL CAPACITIES,

MANUFACTURED BY

GOODWIN & WEST,

No. 235 FIRST STREET, ... San Francisco (Miner's Foundry).

ALL WORK GUARANTEED.

Send for an Illustrated Circular. 16v25-sa

THEODORE KALLENBERG,
MACHINIST,

and Maker of Modele for Inventors. All kinde of Dice Stamps and Punches made. Aleo, all kinde of Small Geare Cnt.

Repairing done on very Reasonable Terme and in the best manner. No. 32 Fremont etreet, S. F. 19v23-3m

J. M. STOCKMAN,
Manufacturer of
PATTERNS AND MODELS,
(Over W. T. Garratt's Brass Foundry).

N. W. corner Natoma and Fremont streets, S. F. Entrance on Natoma street. 6v23-3m

SAN FRANCISCO
SCREW BOLT WORKS,
PHELPS BROTHERS, Proprietors,
MANUFACTURERS OF ALL KINDS OF
Machine Bolts, Bridgs Bolts, and Ship or Band Bolts,

13 and 15 Drumm Street, San Francisco. 4v24ly

McAFEE, SPIERS & CO.,
BOILER MAKERS
AND GENERAL MACHINISTS,

Howard st., between Fremont and Beale, San Francisco

Metallurgy and Ores.

RODGERS, MEYER & CO.,
COMMISSION MERCHANTS,

ADVANCES MADE
On all kinds of Ores, and particular attention
PAID TO
CONSIGNMENTS OF GOODS.
4v16-3m

LOUIS FALKENAU,
STATE ASSAYER,
Analytical and Consulting Chemist,
421 Montgomery St. up stairs.

Particnlar attention given to the Analysis of Ores, Minerals, Metallurgical Produdts, Mineral Waters Soils, Commercial Articles, Etc.

One or two pupils can receive theoretical and practical instruction in Assaying, Analysis, or any particular branch of Chemistry at the laboratory. 11v21-3m

G. W. STRONG. W. L. STRONG
C. W. STRONG & CO.,
Metallurgical Works,
No. 10 Stevenson Street, near First, SAN FRANCISCO

We purchase Ores, Bullion, etc. Ores worked Tests made with care. Also, Assays of Gold, Silver Copper, Lead, Tin and other Metals. 23v22tf

LEOPOLD KUH,
(Formerly of the U. S. Branch Mint, S. F.)
Assayer and Metallurgical CHEMIST,
No. 611 Commercial Street,
(Opposite the U. S. Branch Mint,
SAN FRANCISCO, CAL. 7v21-3m

CALIFORNIA ASSAY OFFICE
No. 512 CALIFORNIA STREET,
One Door West of Montgomery.....SAN FRANCISCO.

J. A. MARS, Assayer.

☞ Analysis of Ores, Mineral Waters, etc. 10v26

Richardson & Co., Copper Ore Wharves,
SWANSEA.

RICHARDSON & Co. have been for thirty years established in Swansea as Agents for the preparation, Sampling, Assaying, and Sale of Copper, Silver, Gold, Lead, Zinc, and all other Ores and Metals, for which they have extensive Warehouses and Wharves under cover, 1,000 feet of Quay Frontage within the Floating Dock, and the most complete Machinery and Appliances. They are also prepared to make advances against Ores in anticipation of realization, and to guarantee all payments when required. 11v24-1y

PLATINUM

Vesssls, Apparatus, Sheet, Wire, Etc., Etc.
For all Laboratory and Manufacturing Purposes
H. M RAYNOR,
25 Bond street, New York.
Platinum Scrap and Ore purchased. 22v18

JOHN TAYLOR & CO.,
IMPORTERS OF AND DEALERS IN
ASSAYERS' MATERIALS,
Chemical Apparatus and Chemicals,
Druggists' Glassware and Sundries,
PHOTOGRAPHIC GOODS, ETC.,
512 and 514 Washington street, SAN FRANCISCO.

We would call the especial attention of Assayers, Obemists, Mining Companies, Milling Companies, Prospectors, etc., to our large and well adapted stock of
ASSAYERS' MATERIALS
—AND—
Chemical Apparatus,

Having been engaged in furnishing these supplies since the first discovery of mines on the Pacific Coast.

☞ Our Gold and Silver Tables, showing the value per ounce Troy at different degrees of fineness, and valuable tables for computation of assays in Grains and Grammes, will be sent free upon application.

7v25-tf JOHN TAYLOR & CO.

United Royal Smelting Works
OF THE
KINGDOMS OF PRUSSIA AND SAXONY.

General Agency, R. J. ROBERTSON, Hamburg, GERMANY.

Whose Representative for the United States,

H. ROBERTSON, 149 Broadway, New York

Is ready to receive consignments of

ORE and all kinds of FURNACE STUFF

For the above named Works.

FULL PARTICULARS GIVEN ON APPLICATION.
16v25-3m

Miners' Foundry and Machine Works,
CO-OPERATIVE,

Fret Street, bet. Howard and Folsom, SAN FRANCISCO

Machinery and Castings of all kinds.

LIGHT FROM THE WEST.—The spirit of progress has somewhat upset our old notions on the subject of light. We used to look to the East for knowledge in the arts, sciences, religion and everything else. We were accustomed to receive all good things from the Orient and all evil things as well. Plagues and contagious diseases, as well as literature and science, followed the course of the sun, and came to us from Europe and Asia. But lately we are reversing this order of things, for here comes to us from San Francisco the SCIENTIFIC PRESS, one of the very best papers of its kind in the world—fully up in the latest discoveries and inventions, and altogether a most valuable and ably conducted journal. —[Industrial Age, St. Louis.

"Full of Practical Information."

DEWEY & CO.:—Your paper (the RURAL) is all it claims to be—full of practical information and useful knowledge to every farmer. I remain, yours most respectfully, W. H. P.

"Glad to See It a Success."

SAN JOSE FOUNDRY, SAN JOSE, Oct. 22, 1872.—MESSRS. DEWEY, & CO., 338 Montgomery street, San Francisco.—Dear Sirs:—Enclosed herewith you will find Post Office order for both SCIENTIFIC and RURAL PRESS. I am glad to see the RURAL PRESS has proved such a success, and I hope it is as great a benefit to its owners financially as it is to its readers instructively. Yours truly, D. McK.

☞ SEND BY LETTER, AND GIVE YOUR NAME AND P. O. ADDRESS, when you wish this paper stopped, if it is continued beyond the time paid for, as sometimes happens through request of agents or other parties. Returning the paper, telling the P. M. you will not take it, is not sufficient notice. Parties requested to notify us, frequently fail to do so. Papers sent back are liable to miscarry. Without your address with your name we might have to look over near 10,000 a mee before finding yours, to erose off. We do not intend to send the paper to a single person who does not desire it, and in case of mistake, will thank any subscriber to inform us. bptf

MARAVILLA COCOA.—No breakfast table is complete witbout this delicious beverage. The *Globe* says: "Various importers and manufacturers have attempted to attain a reputation for their prepared Cocoas, but we doubt whether any thorough success had been achieved uotil Messrs. Taylor Broth rs discovered the extraordinary quali ies of 'Maravilla' Cocoa. Adapting their perfect system of properatiou to this finest of all species of the Theobroma, they have produced an article which supercedes every other Cocoa in the market. Entire solubility, a delicate aroma, and a rare concentration of the purest elements of nutrition, distinguish the Maravilla Cocoa above all others. For Homœopaths and Invalids we could not recommend a more agreeable or valuable beverage." Sold in packets only by all Grocers, of whom also may be had Taylor Brotbers' Original Homœopatbic Cocoa and Soluble Chocolate Steam Mills—Brick Lane, London. Export Chicory Mills, Bruges, Belgium.

THE PORTABLE SAFETY GAS LIGHT, noticed in last week's issue, can be seen at 608 Clay street, in this city. P. J. PHILLIPS & Co., Agents.

CONTINENTAL LIFE INSURANCE CO., No. 302 Montgomery street, corner of Pine.

SHAREHOLDERS,
TRUSTEES, and
SECRETARIES of
ALL MINING COMPANIES,

Should see that their advertisements are advertised legally in the MINING AND SCIENTIFIC PRESS, at less than one-half the cost of daily publications. Every person interested in the prosperity of legitimate mining enterprises should favor such practical economy. Send for circular of dates for weekly advertising, free blanks, and a copy of the Corporation Assessment Law.

Magnesium or Magnesian Limestone.

Any one knowing where the above articles may be obtained on this Coast in quantities, will confer a favor by addressing

GEORGE G. W. MORGAN,
uo9 Sacramento.

Foundry Facings.

We offer for sale the very best quality of powdered
SIDNEY AND LEHIGH CHARCOAL.
BOX Facings. Also, Black Lead Soap Stone, Marble Dust, Etc.
At the Whelpley & Storer Mill,
Main street.....between Howard and Folsom,
SAN FRANCISCO.
19v25tf

San Francisco Co-operative Printing

Company.—Location: 411 Clay and 412 Commercial Sts., San Francisco, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of the San Francisco Co operative Printing Company, held on the 5th day of November, 1872, assessment No. 4, levied on the 17th day of September, 1872, of $12 per share, having been rescinded, on same day, an assessment of Five Dollars per share was levied on the Capital Stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, 412 Commercial street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Monday, the 9th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the 31st day of December, 1872, to pay the delinquent assessment, together with the cost of advertising and expenses of sale.

B. H. DAILY, Secretary.
Office 411 Clay St. and 412 Commercial St., San Francisco, Cal.

State of Maine Mill and Mining Company

—Location of mine, Amador County, California.

NOTICE is hereby given that at a meeting of the Board of Trustees of said Company, held on the 17th day of October, 1872, an assessment of five cents per share was levied upon the capital stock of said company, payable immediately, in United States gold coin, to the Secretary, at the office of the company, No. 305 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 26th day of November, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 16th day of December, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

oc26-4t H. B. CONGDON, Secretary.
Office, No. 306 Montgomery street, San Francisco, Cal.

The North San Francisco Homestead

and Railroad Association. Location of property: City and County of San Francisco, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 5th day of Nov., 1872, an assessment of Three Dollars per share, was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at the office of the Company, No. 314 California street, San Francisco, California. Any stock upon which said assessment shall remain unpaid, on the sixth day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-third day of December, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. D. SMITH, Secretary.
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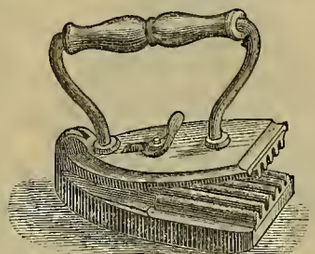
Published by MURRAY, DEWEY & CO.,
At the Publishing Office of the Mining and Scientific ress and Pacific Rural Press, San Francisco.

Polishing and Fluting Iron.



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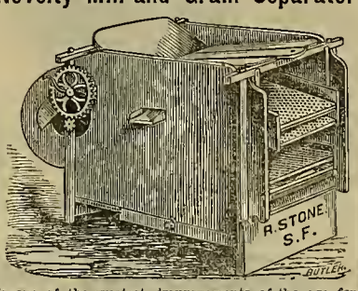

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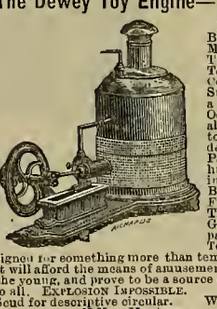

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COMMENCING

Monday, October 7th, 1872.

And until further notice, Trains and Boats will

LEAVE SAN FRANCISCO.

7.00 A. M. (Daily). Atlantic Express Train (via Oakland) for Sacramento, Marysville, Redding, and Portland, O. Colfax, Reno, Ogden and Omaha.

7.15 A. M. (Daily). Cal. P. R. R. Steamer (from Broadway Wharf)—Connecting at Vallejo with Trains for Callstoga, Knight's Landing and Sacramento; making close connection at Napa with stages for Sonoma.

2.00 P. M. (Sundays excepted). S. F. & N. P. R. R. Steamer (from Broadway Wharf), connecting at Donahue with Traine for Cloverdale. Making close connection at Lakeville with stages for Sonoma.

2.00 P. M. (Sundays excepted). Stockton Steamer (from Broadway Wharf), touching at Vallejo, Benicia, and Landinge on the San Joaquin river.

3.00 P. M. (Daily). San Jose Passenger Train (via Oakland), stopping at all way Stations.

4.00 P. M. (Sundays excepted). Passenger Train (via Oakland) for Lathrop, Merced, Visalia, Tipton, and Los Angeles, Stockton and Sacramento.

4.00 P. M. (Sundays excepted). Cal. P. R. R Steamer (from Broadway Wharf) connecting at Vallejo with Trains for Callstoga, Knight's Landing and Sacramento.

4.00 P. M. (Sundays excepted). Sacramento Steamer (from Broadway Wharf), touching at Benicia, and Landinge on the Sacramento river.

6.30 P. M. (Daily). Overland Emigrant Train (via Oakland)—Through Freight and Accommodation.

OAKLAND BRANCH.—LEAVE SAN FRANCISCO, 7 00, 8 10, 9 20, 10 10 and 11 20 a. m., 12 10, 1 50, 3 00, 4 00, 5 15, 6 30, 8 10 9.20 and *11 30 p. m. (9 20, 11 20 and 3 00 to Oakland only).

LEAVE BROOKLYN (for San Francisco), *5 30, 6 40, 7 50, 9 00 and 11 00 a. m., 1 30, 2 40, 4 55, 6 10, 7.55 and 10 10 p. m.

LEAVE OAKLAND, *5 40, 6 50, 8 00, 9 10, 10 00, and 11 10 a. m., 12 00, 1 40, 2 50, 3 50, 5 05, 6 20, 8.05 and 10 20 p. m.

ALAMEDA BRANCH.—LEAVE SAN FRANCISCO, 7 20, 9 and 11 15 a. m., 1 30, 4 00, 5 30, and 7 00 p. m. (7 20, 11 15, and 5 30 to Fruit Vale only).

LEAVE HAYWARDS (for San Francisco), *3 45, 7 00 and 10 a. m., and 3 30 p. m.

LEAVE FRUIT VALE, *4 40, 7 35, 9 00 and 11 20 a. m., 1 30 4 05 and 5 30 p. m. *Except Sundays.

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MINING AND SCIENTIFIC PRESS.

An Illustrated Journal of Mining, Popular Science and Progressive Industry.

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SAN FRANCISCO, SATURDAY, NOVEMBER 16, 1872.

VOLUME XXV. Number 20.

The Great Fire in Boston.

Tho metropolis of New England has just euffered a desolation from fire, that if not equal in extent to tho great Chicago fire, hae consumed the very bueiness heart of the city, and with it more staple and valuable merchandise than could have been encircled within limits of the eame extent probably in any city in the Union.

The blackened ruins cover 60 acres in extent, whilst the losees are eetimated to be between two hundred millione and three hundred millione of dollars; thns exceeding the losses by the Chicago fire. It ie a ead calamity, and even though the numbers of people in the lower and middle walke of life that have been rendered houeeless, and deeolate in prospect and purse, just ae the etern northeaetern winter ie eetting in, may not be as great as at Chicago a year ago, still enough are eufferers to command our eympathiee and material aid.

With many thousand hearts it turns the usual New England holiday into a very eorrowful Thankegiving; and many a feetive board, that but for this event would have played an important part in the ecenes of the in-gathering of happy householde, may now be less bouutifully eupplied, and the re-union of kindred deferred to a time further removed from the preeent heart paine incident to this dire calamity.

Life Insurance Forfeitures.

The *Morning Call* recently intimated that the life-ineurance bueinees was epecially profitable on this Coaet, owing to the unusually large number of forfeitnree of policies here by thoee who, after ineuring from one to eeveral yeare, ceaeing payment. Poeeibly the *Call* is correct in a measure. But it is the fault of the insured, through ignorance or negligence, if the companiee are thne making large sume. The public should know that every first-claee company repreeented in San Francisco providee for ieeuing a paid-up policy for any over-paid ineurance. For inetance, if a young man ineures his life, he pays the same rates annnally while yonng ae when older. The risk, however, is not rated eo high for the firet yeare of his ineurance ae in his later yeare. Coneequently, he pays more ineurance during the firet yeare than the riek demande. But whatever thie difference may be during the years for which the paye iusurance, if he faile to continue, the companiee offer to give him a paid-up policy. If the ineured appliee for it, the company gaine nothing extra by the diecontiuuance. If he faile to ask for it, it would eeem to be his own fault. These facte, we believe, ehould be more generally understood, for the benefit of the insured and the popularity of the ineurers.

THE EMMA MINE SUIT.—The famous trespase euit of the Emma Mining Company vs the Illinoie Tunnel has been decided in favor of the plaintiff, with nominal damagee of $5,000. It wae generally underetood that the case had been compromieed before the deciaion, and that the Emma Company had bought the Tunnel. We notice that our friend Mr. Henry Sewell wae on the etand ae an expert, and some eharp paesages occurred between him and one of the defendant'e counecl, in which the latter ie eaid to have come off second best. The iseue of this case involved a large amount, but thie decision practically settles the whole question of title. Notice of an appeal has, however, been given.

SAFETY CAOE.—A new eafety-cage for mining purposee has been invented by a blacksmith named Duncan McDonald, in the Overman mine. It is said to have great superiority over the common cages in use.

An Improved Self-Coupler for Cars.

Numerous inventions have been brought before the public eince the era of railroade for coupling cars, and a few of them iutended as self-couplers, deeigned to obviate the neceesity of a man going between the cars. One of the most practical and moet recent of theee improvements ie the one shown in the accompanying cuts, the eimplicity and efficieney of which will be apparent as eoon as the device is nnderetood.

Fig. 1 ie a perepective view with a portion broken away, ehowing the interior. *Fig.* 2 represents a section. *B* is a elotted bar which moves vertically up and down in the rear part of the bumper. *A*, the upper part of this bar extende forward at right anglee with the vertical portion and eervee as the pin-holder. *C* is an arm keyed to the horizontal shaft *D*, which paesee through the bumper in the rear of the bar *B*, as ehown. This arm is forked eo that ite branches stand at nearly right angles in the form of a bell-crank. The upper portion serves to euetain the bar *B*, and the pin where it ie raised for the admieeion of the link. When the bar and the pin are raised to admit the link the lower part stands horizontally, ite end juet entering the rear part in the link opening in the bumper head and being beveled or curved eo that when the link strikes it, it will dieengage or trip the upper arm and thus allow the bar *B* to fall, carrying with it the pin *E*, which passes through the link and detains it in position. The end of the ehaft *D*, may be bent at right anglee as ehown in *Fig.* 1 and weighted so as to cauee the arm *C*, to turn readily when released.

Fig. I.

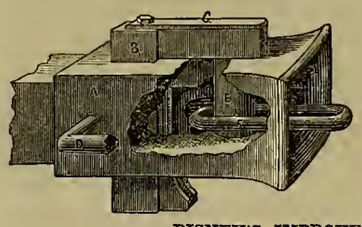
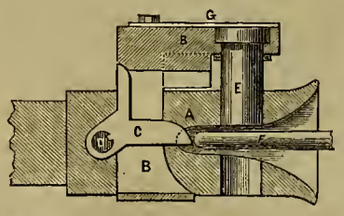


Fig. II.



DISNEY'S IMPROVED SELF CAR-COUPLER.

When the bar *B* deecends, carrying pin *E*, through the link *F*, the bell-crank arm, *C*, will be turned so that its upper arm extende horizontally, while the lower one will be in a nearly vertical position, its lower end resting on the bottom of the slot in the bar, *B*, and locking it eecurely, thus preventing any jar from raising it and throwing the pin out of the link. The pin may be of any ordinary description and ite head dropped into a countersink in the horizontal portion of the bar *B*. The plate *G* ie arranged to turn over the head of the bolt which prevents the bolt from being jolted out, and can at any time be turned to one side for the purpose of removing the bolt or substituting a new one.

This self-coupler hae been exhibited to but few intereeted in railroads, and the exhibition and practical workinge have been made but lately. All who have witnessed the effect of the eaee with which a car can be coupled and uncoupled have expreseed themselves well pleased with ite eimplicity. The first reeult of the patent being made public ie that the Nevada Central Company have directed that additional care, now in proceee of construction for them, be fitted with this apparatus. When the link is forced in, it does not press anything excepting the eolid iron of the bumper, not being in contact with the lower part of the bell-crank at all.

The conetruction of the device ie simple, no springs or intricate machinery being employed. No neceeeity exists for the removal or change of the old coupling or bumper in attaching this, and, in caee the self-coupler should be disarranged, which is not probable, the old one can be ueed immediately; the pin employed, either round or square, being euitable for either kind of coupling. It can be placed on any car, paesenger or freight, at slight expense and ensures perfect eafety ae it forms a lock which, when coupled, no wroneh can unlock, but which the elightest touch of those who control the train can disengage so as to operate on any particular car. A chain on top of a box-car will enable a man to nncouple any car in the train from the top of the car. For railroad and mining companies who uee car trains in their buineee thie device will be of great use and will tend to decrease in a wonderful degree the number of accidente on railroads. With this device and the air breake in uee, paesengere will feel much more eecure on a grade, and railroad employée will have less cause for ineuring tbeir lives.

Thie conpling is the invention of Mr. M. Dieney, a Californian, whose former ingenious inventions we have before mentioned.

A full eized coupling can be eeen at No. 111 Leidesdorf etreet, at the Riedon Iron and Locomotive works, corner of Beale and Howard etreete, in this city, or at the Kimball Carriage Factory on Fourth street. For further particulars addreee H. C. Kibbe, 419 California etreet, in this city.

VIENNA EXPOSITION.—The Kimball Manufacturing Company of this city have forwarded one of their wood C spring buggiee for exbibition at the Vienna Exposition. They are building other vehiclee which they propose to forward ae eoon ae completed. We are pleaeed to eee one California firm, at least, alive to the benefite to be derived from this expoeition, and hope that others will follow their example and have our State well represented. Our articlee of manufacture, though limited in variety, ae yet, are of superior quality and their excellence will no doubt eurprise many who will vieit the exposition who aro not awaro of the great progrese the State hae made in the limited time since its settlement. The inducemente held out by those having charge of the exposition are very advantagoone and the benefite to be derived from the exhibition of our manufactured articles are many.

MINEE SOLD.—The Alpine *Chronicle* etatee that the Exchequer Company have purchased the Saugatuck and Fremont mines, adjoining the Excheqner, and that hoisting works are heing erected on the Saugatuck from which both minee can be worked.

Cleaning of Iron-Amalgam.

[Written for the PRESS by G. Kustel.]

In working roaeted eilver ores it sometimee occure that, under certain not yet explained conditions, the iron enters the amalgam, when amalgamated in iron pans, to a very disagreeable proportion, making the cleaning very troubleeome, or, in the usual way, imposeible. It seeme that the iron doee not come from the ore, but from ehoee and dies of the pan; otherwiee it could not be explained why no iron-amalgam is obtained from the barrel-amalgamation, at leaet, never to euch an extent as to form infusible iron lumps in the crucible when the retorted amalgam ie eubjected to melting. It separates then from the silver but retaine up to 60 per cent. and over, of the latter. It ie eingular this amalgam is not often formed in pane in epite of grinding. Artificially, that ie, adding experimentally to nnroasted eilver ore chloridee or snbchlorides of different metals, no iron-amalgam will reeult; on the other hand euch amalgam ie obtained from amalgamating raw gold oree. The amalgam is very magnetic, and the iron only looeely combined with the quicksilver, so that a mechauical treatment, rubbing or grinding, is sufficient to separate the iron from the quickeilver. Thie, however, ie eo slow that no practical nse can be made of it.

The different waye of treatment I will not mention here except one method that I ueed with the best euccees; it is cheap, quick and perfect. A flat-bottomed pan like Knox'e, is put in motion without any water in it, and a bucketful of eifted ashes introduced. The well-etrained amalgam is then thrown in gradually piece by piece, in proportion aa it turns into powder. If the mixture aeeumee a dark color or if the pulverization of the amalgam commences to go elow, another bncketful of aehee ie added, and so on until about 300 pounde are pulverized, which ie effected in about half an hour. The gray heavy powder ie then taken out and another lot of 300 pounds of amalgam managed in the same way and so on till all amalgam at hand is worked np into powder. In caee the ashee are moiet, a reaction in the maee is obeerved by the increase of temperature to a considerable degree. After the mixing is finished, the powder is allowed to lay for an hour undieturbed, then eome water admitted into the pan eo as to cover the bottom about an inch deep. While the muller is in motion, the amalgam powder ie introduced by meane of a scoop till about 300 pounds are charged. Water ie added if neceesary, but not too much. Quicksilver ie generally not required, unlees the amalgam wae etrained very hard. After a while the amalgam becomee more liquid by loosing the iron, which blackena the water. After an hour'e grinding some amalgam ie taken out and examined. If not quite clean another hour will do. A quarter of an hour, before the discharge, more water and quicksilver is introduced—the quicksilver only for the purpose of eaeier diecharge. It ie not exactly necessary to work with chargee of 300 pounde, but with ae much as the pan can stand, without having the driving belt elip off.

I have had no experience ae to whether iron-amalgam has ever been obtained from amalgamation in pans where no grinding at all ie permitted. If the suppoeition is right that the iron comes from ehoee and dieeof the pan, then, if a certain kind of ore is inclined to form iron-amalgam, this could be prevented by omitting the grinding; but treating raw gold oree, the grinding ie indispeneable, and in this case, if iron-amalgam ie formed, an addition of aehee to the ore would likely keep the iron from entering the amalgam, as the aehes are the meane of eeparsting it. Treating eilver ores, thie laet remedy could not be ueed for the eame purpoee, ae too mnch of it would injure the amalgamation.

Pre-historic Remains in the Aleutian Islands.

At the last meeting of the California Academy of Sciencee W. H. Dall, of the U. S. Coast Surveoy, read the following paper on the subject of prshietoric rsmaine in Alaska. The report wae illustrated with mape and diagrams and was very intersting:

Captain's Bay, Analaska.

There are eeveral village eites on this hay which inhabited during the psriod suhsequent to the Russian occupation of the territory, are now, and long have heen dsserted. The principal are ths Postriakoff, or Elder villags, near Caps Cheerful; one on the south part of Amaknak Island, just south of Expedition Island, on Iliuliuk Harhor, and one in Nateckinsky Bay; besids the Kalekuta Bay village, mors recsntly evacuated hy its inhahitants. Ths only locality now inhahitsd are the village of Imagnss, on Summer Bay, the villags of Iliuliuk, and another, of two or three houess, on Uknadok or Hog Island.

In excavating for the erection of a signal, at the northern snd of Makata Spit, Amaknak Islaud, the naturs of the materiale brought out showsd that the locality had once heen inhahited Subseqnent inquiries elicited the fact thst the oldsst inhahitants of Iliuliuk had never heard of any village heing eituats here, although villags which wers deserted in the last century are well known hy tradition to the Alsuts of the present day. Hence it is a rsasonable snpposition that the village undsr consideration must at leaet have aute dated the Russian invasion of 1760, and may havs been oldsr. Hence, the implemeute, stc., fonnd in this deposit, ars in all probahility the same as those originally in uss among the natives of this region hefore ths introduction of manufacturad articlse of trade by civilized nations. On this account they are of singular interest. A careful examination of this locality afforded the following observatioue:

The Ulakhba Spit

Projects from Amaknak Island, treuding nearly in a north and south direction. It is very narrow, beiug in eome places only ssven meters wids, and is composed entirely of shingle overlaid by a stratum of vegetahls mould, which supports a lnxuriant growth of the nativs grassee. Near the junction of the spit with the main island, it rises, and is continued in a ssriss of low mounds for a quarter of a mils. Between thess mounds and ths mountainous portion of Amaknak, called Ulakhba Head, is a low and uarrow strip of ground containing a small pond of brackish water. The highest of these mounds is quite near the north hsad of the spit, and it was here that my signal was located.

Upon this mound, ahout twenty feet ahove high water-mark, by careful scrutiny, I was ahls to detect at least thrse depressions of considsrahls eize, which I judged to bs ths sites of

Houses of the Ancient Aleutian Fashion.

That is to eay, half underground of sufficient sizs to accommodate a nnmher of familiss, sach of which had a sort of compartment to itsslf. The hardy Aleuts had no firss in their houses exccpt for cooking, and this wae often done outside. They dsscended on a uotched stick, through an aperturs iu the middle of the roof, which was also ths only window. Thsse depressions appeared to me to he the remains of soms of thess housee, a supposition afterwards confirmed hy onr excavations.

In digging ths hole for ths eignal we got two stons lamps for hurning ssal oil, about as desp as a saucer, and of an egg-oval shape, exactly similar to some I havs seen in use among the present Esquimaux of Behriug straits. They were of soft porphyritic rock and still retained traces of the action of fire. Whsn used, thsy were filled with dried sphagnnm soaked in seal oil, which gives out considerahls light and heat, as well as smoke. Ws also ohtained a bons arrowhead of the Esquimaux pattern from this excavation. The next tims that we visited the station, while husy in taking trigonometrical ohservations, I directed the crew to dig in the northwest coruer of what I supposed to he the remains of a house or yourt. This depression was on the crest of the ridge facing east and wsst, ths longer sides about forty fset long and ths ends about twenty feet.

The first noticsd was a sort of wall of rough etones evidently ohtained from the neighhoring beach, with here and there a whale-rih, in a perpendicular position, which had probably aasisted in supporting the roof. Further excavatiou for a couple of feet revealed

A Human Skeleton in Perfect Preservation.

The hody had heen donbled up so aa to bring the knees up to the chin. It waa lying on the right aide in a horizontal plane facing the southeast. Two others were afterwards discovered iu an exactly similar poeition. They were ahout three feet from the eurface hut not ao far from the inner wall of the house, one waa the ekeleton of a woman. A few rough flat stonea were placed aronnd aud uuder them, but uo articlea of use or ornament were with the akeletons. It ia a mattsr of record that the ancient Aleuts, when a person died in one of their houses, huilt up the body in the compartment which had belonged to the person when living, and continued to occupy the remainder of the yourt ae nsual. The position in which thsae ekeletone were found, indic ates that euch was the manner in which they had heen interred. It is still a common practics among tribes of the Ovarian stock, to tie np the body of a dead person in the manner just deecribed. Further digging sbowed that a great part of the mound was composed of materials foreign to ths locality. Theee principally consistad of honee of cstaceous, fur eeal, (*Callorhinus ursinus*) eea lion (*Eumetopias Skelleri*) and sea birds, principally ducke and gulle or pstrels. There were aleo large accumulations of ths shells of edihle mollusks, among the most conspicuous of which were the common mussel, (*mytilus edulis*), *Saxidonius squeatidus*, Dest. *Tapes staminea*, com. and *modiola modiolus* L. All ths ahove are still living in theee seas, most of them are still found in Captaiu's Bay, and form a portion of the food of the existing native population. The sea-lion and walrus are no longer found in Unalaska, and ths fur-ssal hut rarely. That they must have heen very abundant at one tims is evident from the great accumulation of their bones in this single mound, which was literally compoeed of such debris, arranged in laysrs separated hy vegetahle moulds. From thsse matsrials we picked out a nnmher of

Articles of Interest.

These were principally stone lamps, like those previously described, of various sizes, dlfferent in form and nicety of finish, to soms extent. Besides theee thers were also many large, rough stonss, sither naturally or artificially hollowed out on one eide, which had been enhjected to ths action of fire, and were probahly the pavement or hearth upon which fire had hsen huilt for culinary purposee. Several rongh pieces of cetscean hone were found brought to a sharp, square edge at one end, and formerly in use for dressing ekine. A fsw stone knivee were found, all of the native pattsrn, *i. e.*, shaped like the chopping-knife. These were of a fine, dark slate-stone, which must have been hrougbt from a locality nearer to the mainland of America, as it is not found iu Unalaska, or the islands west of it as far as known. Also a large part of a flat spoon of carved bone, with a groovsd handle, eevsral awls, usually mads from the wing-bonee of hirds, hone arrowheads of Esqnimaux pattern, fragmente of hones variously groovsd, cut or carved, and a little hall of bone half perforated. This puzzled me for a long tims, uutil an old Alsut informed me that, in his boyhood, hs had seen such things used as buttons, to be put on the end of a hone-lance or arrow, when practising at a mark, in order that ths point might uot hecoms hlunted, or injnred. None of thess articles exhibited any particular skill in carving or any ornamental pattsrns excspt of straight lines. A number of chipped flints, which had evidently been ueed in striking firs wcre also fonnd.

Further explorations made during tho eneuing winter and spring, rsvealed

The Sites of Sevon Villages

On Omaknak Island alons, of which hut one or two ars known, evsn by tradition. Excavations in one or two of thess placoe revealed similar implsmsnts to those already descrihed, others might douhtless have turned up, but my means and time wers too limited to psrmit very extensive excavations. I was ahle, however, to detect two other

Modes of Burial Among these Pre-Historic Natives.

In csrtaiu places at the foot of overhanging cliffs a wall had heen built up until ths rock above was reached, and outside a hank of earth covered this wall. In ths space inside ths dehris had thsn heen removed, and in this space, on a layer of emall sticks of drift wood, the hodies had heen laid, one ahovs the other. In one caee I found six skeletons, ono ahove the other, eeparated only by the layers of sticks and a piece of grass matting eimilar to that still mannfactured hy ths natives of Unalaska. Here again I noticed the remarkahls absencs of any utensils or articles of apparel or ornament. Only one bone arrow-head, with a piece of iteshaft and a fragment of a wooden mask, were found during the examination of some four or five of thess caves, crammed with remsins of skeletons. The bones were much decayed whsrever water, percolatiug through ths rocks, had hsen able to reach them, hut where they were dry they were well preserved. The only anatomical peculiarity of ths bonee, which agreed, in all essential respects, with Esqnimaux remains of similar character, was the great stoutness of the long bones and a remarkahls thickening of the inner face of the under jaw, which was eo extensive, in a majority of cases, as to nearly close the epace between the two halves of the the jaw, the hone heing over an inch in diameter in aeveral casee.

A emall cave exiats, nuder an isolated rock which atands on one of the raised benchee on the middle portion of the islaud. The entrance ia very low, but inside one can atand erect, the cave being about twenty feet in diameter, but of au oval form, the highest point of the dome-shaped roof being ahout ten feet above the floor. A good deal of water had penetrated through the crevicea of the rock, and the bones in this cave were very much decayed. I remarked

Remains of Seven Skeletons,

Arranged around the edges of the cave, that at the extremity of the cave furtheet from the entrance, heing the akeleton of a woman, and close to it the remains of an infant. The floor conaisted of about aix inches of hlack mould, covering the usual ehingle of the beachea. A number of angular fragmente of rock had fallen from above. No remaine of animals were found here, and if thers had been any wooden articles, thsy had all rotted away.

Near one of the skeletons was found, heaped together, a nnmher of stons knives, a bone awl, and two fragments, oue of pumics and ths other of fins sandstone, with their edges and surfaces smoothed and squared evidently for ths purpose of dressing down ths asperitiee of skins to be ueed for clothing. Tho most interesting collection was found near ths skeletou of the woman, and consistsd of two bons lahrets shaped like thoss now in use among the Thlinkete and Botocudos. These are doubtlsss very aucient, as all traces of the usage have long since passed away. Thers were hesidee, a lot of nsedles mado of the wing hones of hirds, a nsedle case made of the humeras of some large hird, closed at each end by a wooden stopper, bons awls, stone knives, a whetstons of fine grained sand rock, and a littls case of hirch hark containing plumhago. Neither ths birch, the sandstone nor the hlack slate of which the knives were made, nor the plumhago, exist on the island of Unalaska.

As proved by othsr researches on the islands of Kadiac and Unga, the early Aleuts were accuetomsd to preserve the rsmains of their more eminent dead by removing the viscera, stuffing ths hody with dry grass and drying it. This was placsd iu eome dry cave,

Dressed as in Life,

Ornamentsd with gay apparel, aud covered with wooden carvings, ths most remarkahle of which were masks of large sizs, paintsd of different colors aud ornamented with feathers, tufts of hair and brietles from the dcer. A very great varisty of othsr carvings were also placed in thsse caves, and sometimes the hodies, placed in natural attitudes, wers covered entirely with carved wooden armor, or placed in a miniature canoe or bidarka, armed as if huntiug, or holding a paddls. Women wers repressnted as if sewing, dreeeing skins or nursing their iufants. Old men as if beating their drums, as they do during the wintsrdances in Esquimaux villagee to this day.

But few of thsse remains exist iu a wsll prsserved condition, yet the extent of ths practice may be understood from the fact that ovsr thirty different masks, all more or lees mutilated, were found in ons cavs at Unga. Any notes in regard to them, possese a certain interest, and may bs worthy of pressrvation, ae hefors many years havs gone hy, evsu the traces of thsse by-gone customs will have entirely disappeared.

Richmond Consolidated Mining Company (Limiten).—The following information respecting the working of ths mine for thres months has heen receivsd from ths manager hy the *Mining and Commercial Times*, of London:—June—tons smelted, 1,641; hullion produced, $86,112; yield per ton, $52.28. July—tons smelted, 1,117; bullion produced, $58,581; yield psr ton, $50.16. August—tons smelted, 1,134; bullion produced, $60,520; yield per ton, $53.36. Total for three months—tons smelted, 3,892; bullion produced, $205,213; average yield per ton, $52.72. The ore smclted dnring August was therefore richer than at any time sincs Septsmhsr, 1871, as is likewies ths averags of yield since June 1, eay $52.72 per ton. The ore now in sight in the mine is fully up to the ahovs high grade, and, unlsss ths character of the ore should change conseirahly with further explorations, we may expect an avsrage yield of $50 per ton. Unless we havs an average monthly product of $80,000, I shall bs much disappointed—eay a gross hullion product of a million dollars per annum. The result of the emelting for June—$86,112—has already proved what may bs reasouably expected for ths future. Yesterday I let a contract to sink the engine shaft 100 feet deeper. The Lizette tunnel is progrsssing finely at ths rate of two feet or mors daily." Copy of cahle recsived this day: "Hall, London.—Last week, five days' ruu, smelted 176 tons. Produced $9,900. Fisher."—Yours, etc., Thos. Westbury Hall, Secretary.

The New Atlantic Cable.—A London letter says of the next Atlsntic cahle, soon to bs lsid: In addition to the prssent three marine cahlss, a fourth is in processs of rapid construction and embarkation on board the "Great Easteru." Thie new cable is a duplicate of ths French one, and is to have its tsrmini at Land's End and Halifax. Its main length will bs 3,600 miles, and it will cost, lees the laying down, £1,200,000 and upward. It is heing placed on hoard the "Great Eastern" in lengths of 250 mile coils. Already a large portion is on hoard, and early in the coming ycar it is contemplated to put it in use. The experience of the past haa given eome important leesons on the conatruction of thia cable, and every approved and new feature that haa heen suhmitted by electricians and engineers has met investigation and adoption. The machinery for submerging and laying is also improved, and marine cable-laying ia now a thing of ease and energy only. The London Construction and Maintenance Company, with ita immense capital, and net profits of last year amounting to £115,500, and having a mouopoly, finds it a very easy thing to lay Anglo-American cahles. The next thing expected is a reduction in the rates of messages.

Artificial Manures.—English farmers use nearly a million tons of artificial and chemical manures annually, the materials for which are drawn from all quartera of the globe. It is thus they raise their hsavy crops and keep their aoils improving.

Butte County Mines.

One of our correspondents sends us a few itsms of intsrest from Butte County, from which we maks some extracts. Hs thiuks that Moraie Rayins is the outlet to Tahle Mountain, as it has a splendid fall and emptiss to ths Feather river. Travslers thst wish to sss minee worked in an sxtsnsivs scals, would do well to visit Cherokee Flat and Morris Ravine. The mines arouud Oroville are being made ready for the winter.

The Golden Summit Silver Mine.

Thie ledge was discovered one year ago in Kineshew mouutains in the north-eastern portion of Butte county, and promises to be the most valuahle mine yet discovered in the county. The ledge is from 3 to 8 feet thick, and assays largely in silver, with some gold. It has heen found to bs a bold promineut ledgs for a distance of 8 milss, bearing strong silver indications ths whole distauce. Abont 3 tons of the ore has hsen taken from tbe ledge in one plaes, and shipped to San Francisco, and found to be worth by actual tsst of mill process about $100 per ton. Many locatione are being made on the ledge. Ths opinion of experienced miners is that the ledgs is a valuahle one, and that this section is destined to hs one of the richest miuing camps in ths Stats.

Hendricks Mine.

This property ie located in Morris Ravine, 3 miles north of Orovills. Ths company have just complsted a large ditch or canal from the wsst hranch of Feather river to their mine, a distance of fifty miles. Iu about two more weoks they will have completed a tail flums 6 ft. wids by 3 dsep, aud over a mile long. They expect to continue it to the rise, and immediately on completion of this one, lay another aloug sids.

They have a fius fall from the claim to the main Feather river, a distanes of 1½ miles. When they gst their flumee to the river they will have a dump for all time. They are now takiug steps to procure title to their valuahls mining property. The company is an Indianapolis one, T. A. Hendricks being one of the company. They have so far expended ou ditches and improvemeuts on the mine $300,000.

Naturs has done wonders for this claim. It is supposed to be one unbroken gravel deposit to Cherokee, through Table Mountain, a distance of four miles. You find here the hlue gravel aud rotten houlder deposits, similar to the far famed Cherokee deposits. They ars working on an ascending hed-rock.

The Nisbet Mine

Is situated at Oregon City, Butte County, Califoruia. Ths vein is from two to four feet thick and dips 45° to ths westward. Ths casings are slats and green-stone; depth of workings 120 feet; extent of claim, 3,600 feet. The total yield from this mine up to last month was $130,000. Ths average yield of the work was $25 per ton for the first 50 or 60 feet in decomposed rock. Below ths water level ths rock averaged $35 psr ton. The ore is treated in a new 16-stamp mill, erected on the site of an 8 stamp mill hurnt last eeason.

The Yuba Gravel Mining Company.

Ths Yuba Gravel Miuing Company is a corporation orgsnized for ths purposo of opening the ancieut river-bed or gravel channel above ths town of North Bloomfisld, Cal. Ths theory was first advancsd by Professor Whitney, that ths rich channel which passee through and has heen opeued at Forest City, Alleghany, Miunssota and other pointe in Sierra county, came into this county in Eureka towuship. It is also a theory of practical miners that the same channel runs from Snow Point to Orleans, Moors's and Woolsey's Flats in this county, and then passss through to Bloomfield, uuiting ahove with the channel from Relief Hill, and ths Yuba claims, consisting of about 604 acres, are located at or near the point of union of the two channels. The channel has been openod at Moors's and Woolssy's at one angle, at Bloomfield another, and at Relief Hill another angls, from ths claims of the Yuba Company. The mines at Relief Hill have heen recently worked hy drifting, and havs yisided as high ae from $47 to $50 psr day to the hand, as we are informed.

The Moore's and Woolsey's Flat mines ars yielding large returne, and at Bloomfield, where the channel was reached, splendid gravel prospects were found. Theae developmeuts iudicate that the Yuha gravel Company have a splendid location upon the channel, and thus far the developments show a formation similar to that of the Relief Hill. The company has now excellent and powerful machiuery, consisting of a thirty-horse-power engine and a pump that will raise 26 inchea of water. The ahaft is down 180 fect, and of this distance 6 to 8 feet ia in gravel which prospects well. The first machiuery used was not of aufficient power, hut now everything is of the most substantial character and in thorough order. A tram-road is now heing built to run wood, abundance of which ie in the immediate vicinity, to the worke. The mine ia under the auperintendence of D. R. McKillican, of North Bloomfield. It is easy of acceas, and is ahout two milea from town. We hope soon to he ahle to announce that bed-rock aud big pay have been found in the channel. The indications, the location and alldevelopmente in the vicinity are most encouraging.—*Transcript.*

MECHANICAL PROGRESS.

Carriage Wheels—Where is the Weak Point?

It would seem that after many experiments made and the long controversy that bas been going on for years in regard to wheels, there would be no necessity for asking ths above question, hut having never yst heard what wo dosmed a satisfactory answer, we havo taken extra pains to ascertain, if possibls, whether the theories npon which tho trade is constructiug wbeels at ths present tims ars right or not. Just one year ago we chanced to eeo a wheel hreak down, and we noticed that the spokee hroke off near the hub, hut not a single teuon was drawn out; we accordingly made a note of this, and for one year have been on the lookout for hroken wheels. In our pursuit of information we have not always found oursclvee in pleasant company, but eee the wheels we did, and our diary showe a record of forty broken wheels and their appearance. Among them we find almost every class, from the light wheol with its three-fourthe inch spoke to the heavy truck wheel with is two and three-fonrths inch epokee; wheels high and low, new and old, hroken by collision, turning out of railroad tracke and other cansee, in three instences the wheels hreaking down on smooth roads without any perceptible cause other than the weight of the vehicle.

On the whole number broken we find that twelve broke in the aame manner as the firet one we noticed—the spokea breaking off near the hub, but withont drawing a tenon; in six casee these epokes were drawn out of the hnb and all the rest broken not short off in all caeee, but twisted and split so as to retain no eupporting power. In three more cases four apokee were drawn from the hubs and the others hroken; in two casee every spoke was drawn from the hub; in five oasee the spoke broke at the felloe, and those on the under side were orushed down; in six cases the spokes on the nnderside of the hub were broken off near the hub, and a portion of those above the hub were broken at the felloe, but none were drawn from the hub; in four casss the wheel dished back and broke nearly all the epokes, but starting only two or three in each case from the mortiee; in the remaing two cases the wheel dished hack aud drew all the epokes, breaking a majority of them also.

But our examination did not stop here. We fonnd that of the twelve wheels that had all of the epokes hroken, in but one instance were the spokes over one inch or the hub over four inchee in diameter, and, with the exception of three hubs, they were under three and one-half inches in diameter; in the eix casee where these epokes were drawn out of each wheel, in all but one the spokes were over one inch, and the hubs not less than four inches in diameter; in one instance the spokes were three-fourths inch, and the hub three inchee in diameter; in the case where four spokes were drawn they were one inch spokee and four inch hubs; in the two cases where every spoke was drawn or eo etarted as to be easily taken out, the epokes were two and one-half inches and the hub eight inchee in diameter; in the five cases where the epokes broke at the felloe, the spokes were over two inches, and the felloee were eawed; in the six cases where the epokes on the under eide were hroken off at the hub and those on the upper eide at the felloe, the spokes were one inch and under; in the four cases where the wheels dished back and broke the mejority of the spokee, the spokes were under one and one-fourth inches; in the last case where the wheels dished back and drsw as well ae broke the spokes, the wheels were of the heaviest kind, ench as are ueed on the four horee expresses

Ae a reeult of these observations, we find that the epokes that were drawn were drawn from large hubs, the spokes being of the heavier kinde, and in every instance they were of white oak; and that those spokee that were broken were of the lighter sizes and in small hubs; eo uniformly was this case that in every small hnb the spokee were broken without even starting the teuon, except where the spoke aplit lengthwiae, and in that case a portion of the spoke was drawn out. Another point noticed was that every wheel that broke at the rim was made with sawed felloes.

Our wheel manufacturers have for years been aiming to obtain greater holding power at the hub without increasing ita weight or aize; this haa brought out the iron and iron and wood hub combined. Now, they have beeu working in the right direction. If the three inch hub will hold the three-fourth apoke, notwithstanding the spoke may be split in alivors from one end to the other, as we often noticed it to be, what need is there of enlarging the size of the hub or increasing its power to hold the spoke, and this, too, in face of the fact that the only wheels from which the spokes were all drawn or atarted so aa to permit their being taken out eaaily, were large apokea in largsr hubs. We are unable to reconcile the theory that there must be greater strength at the hub in order to aecure a perfect wheel with the resulta of our investigations, and are more than ever ready to believe that time spent in working to increase the size, or, rather the holding power of the hnh is in a great measure wasted.—*Carriage Journal.*

Selenitio Mortar.

At the recent meeting of tho British Association, a paper was read showing the importance of the discovery of Gensral H. Y. D. Scott, whereby a speciss of limestonc, hitherto considered almost useless, is rendered valuahlo in ths manufacture of cements and mortars.

General Scott was the first to ohserve, about sixteen ycars ago, that a limestono, which does not possess to any useful extent, if at all, ths charactors essential to its conversion by burning into a hydraulic limo, may he made to furnish a good cement by simply allowing a small proportion of eulpburous acid gas (obtained hy burning sulphur or other well known methods) to pase into the kiln during the burning of the lime. The latter, when euhjected to this slight modification of the ordinary kiln treatment, (inetead of slacking or combining rapidly with water, with considerahle evolution of heat,) undergoee only gradual hydration, nuattended by any important elevation of temperature, and sets or hardene after a time, hehaving, in fact, in every way like a cemeut of good quality, and sometimee equaling Portland cement in etrength.

The production of the so-called Scott's cement, by this simple modification of the lime-burning procese, has been carried on to some extent for a number of yeare, and a medal was awarded to Colonel Scott in 1862 for its invention; but some practical difficulties attended the prodnction of nniform reeults, and these appear to have retarded any very considerable adoption of this method of manufacturing cement. It was found that in lime eo treated a small proportion of calcium eulphate, seldom exceeding five per cent. and frequently below that proportion, was formed; and that an admixture of a corresponding quantity of a soluble sulphate of eulphuric acid with the lime yielded eimilar reeults, but the difficulty of securing uniformity in the influence exerted by the eulphate upon the lime when employed in this mauner upon a scale of actual practice, precluded the attainment of succeseful practical reeults. By a most eimple modification in the mode of applying them, Geueral Scott has now brought the peculiar influence which sulphuric acid or a sulphate exerts, in preventing the heating and promoting the setting and hardening of lime, to bear with perfect eucces and uniformity upon lime of the ordinery kind used for mortar and plastering purposes.

The eulphuric acid or eulphate (which may be called the eelenitizing agent) is first mixed with the water to be ueed in making the plaeter or mortar, in the proportion correspondiug to about 5 per cent. of calcium eulphate upon the lime used. The lime is then added, and these ingredients are triturated together until they form a creamy paste, after which the paste is mixed with the requisite proportion of sand for the production of the quality of mortar required.

The invention is applicable to a variety of uses, but chiefly to the production of mortar for ordinary building purposes, to plaeter work, and to make concrete. It ie also adapted to brick-making, and the preparation of building-blocks of any size and in an ornamental form. The Messrs. Bodmer have eucceeded in producing with it bricke that are almost ae hard as marhle, and have facee of great beauty of texture and color. According to the proportion of sand employed in the mixture, either a very emooth surface or oue resembling that of a granuloue freestone but very much harder, can he obtained.

The Scott's cement and the selenitic mortar have been tested in a variety of ways and by different persous, as to their powere of resisting cruehing forces and teusile straine, and in all cases the resulte have been highly satisfactory.

The euperior adhesion of selenitic mortar to emooth surfacee was markedly shown in experiments made in comparison with Portland cemeut by bedding two flooring tilea croasways. After fourteen daya being allowed for setting, the reaistance of the Portland cement mixed with two parts sand to one of cement was 56 lbs., the cement in most cassa completely leaving oue of the tiles. On the other hand, the selenitic mortar gaged with five parts of sand to one of lime, when similarly tested, alwaya broke through the joint and resisted fracturing until weighted with 158 lhs. Thia is not the only application in which selenitic mortar shows a superiority to Portland cement.

Selenitic mortar, in ordiuary dry brickwork, with four or five parts of sand and upwarda, will give greater atrength than Portlaud cement used under aimilar conditions.

STAINING VENEERS.—Difficulty is ofteu experienced in getting the coloring matter to penetrate the wood aufficiently. Thia may be obviated by soaking the wood for twenty-four hours in a aolution of caustic potash, and finally boiling them for half an hour

SCIENTIFIC PROGRESS.

An Important Nautical Invention.

The attention of tbe British Association was recently called to a vsry important and beautiful nautical invsntion hy Mr. W. Fronde.

Tho object of ths inventor was to produce an automatic apparatua which would record the rolling of a ehip in a seaway, and also register the slopes of waves and the general undulations of the ocean. The apparatus depends for its precision upon the simple principle that a plumb line, if its point of suspension bo near the ship's center of gravity, will be for tbe moment in equilihrinm if it occnpy the poeition the vessel would give it in still water, while its oscillatione will conform to the changee of the wave elope.

It consiste of a revolving cylinder covered with paper and turned by clock work, which causes it to receive the tracinge of several pens. One of these pens marks the time at equal succeesive intervals by an exact clock, while the instrument being placed at the center of gravity of the ship, records by a eecond pen the angles made at each moment by the ship—that is to say, her relative inclination, ae imparted by the billows of the sea. Another pen, actuated by a rocking arm kept level and pointing to the horizon, eimultaneously recorde the angles which the vessel makee with the horizon or her ahsolute inclinatione.

The invention has been fully tested and its fundamental principlee thoroughly verified by protracted nautical experiments. This eimple contrivance, while apparently useful only for developing the mechanical theory of a ship's rolling at sea, will doubtlees subeerve some of the moet practical purpoeee aud vital neceesities of the navigator. It ie well known that the compass deviations on ehipboard are materially affected hy the varioue motione of the ehip, as ehe heels to the port or starboard eide. Late experiments ae to the amount of compass deviation ehow conclusively that no good seaman can fsil to keep the rolling of hie veesel perpetually in his mind, and will find euch an invention as Mr. Froude's of incalculable value.

The observatione on board the City of Baltimore by the Committee of the English Admiralty proved that when the steamer was swung 10° to etarboard the magnetic needle wandered from its true point 25° and 30′ to the westward, and when shc was heeled 10° to the port eide, the needle erred 15° and 3′ to the east. making a total variation of 41° of longitude due to heeling alone, withont in any way changing the direction of the ship'e head.

The invention will aleo serve the additional and etill more important end of premonishing vessele of the approach of typhoons and cyclones in the more stormy regions of the ocean. The approach of heavy gales ie ueually announced by a ewell and confueion of the sea—the storm waves advancing more rapidly than the storm itself.

Colonel Reid etated that when the celebrated hurricane of 1839 occurred he was in Bermuda, and distinctly heard the sea breaking loudly against the eouth shoree of the island fully three days before the tempest broke upon it. At that time the hnrricane wae etill within the tropic, and distant 10° of latitude, and as the gale neared Bermuda the eurge increased. The increase or entire change of tides and currents or tidss earlier or later, the long and true swells, confused aud cross seas, raised in a pyramidal and other distinctive forms, are among the premonitione of a cyclone at sea; and theee premonitions, by the automatic or self-registering apparatus of the English invention, are not left to the zeal and sagacity of a worn-down or unekillful master, but force themeelvee upou the eye as they graphically display themselves on the paper prepared for recording them.

The valuable contribution to nautical inetrumente will be greatly valued at a time when navigation is so rapidly increaeing, and carelese or ignorant seamen eo often imperil the livcs and property entrusted to them.

CANNON POWDER.—For some time past some interesting experiments have been in progress at Fortrese Monroe, Virginia, for the purpose of improving and increaeing the exploeive qualitiee of cannon powder. With the aid of recent diecoveries, a powder ie said to have been manufactured which possesses 50 per cent. increaeed force, and, consequently, givea greater momentum to the ball, while the pressure on the aides of the gun ia diminished. In one of the late trials of this power, a 15-in. smooth bore was fired with the aame charge aa that used in the 12-in. rifled gun, fired at a target representing the side of the British ironclad Glatton.

CEMENT MIXTURES FOR STEEL.—Mr. Edward E. Houghton, of Philadelphia, proposea to use a combination of bonecarbon and hydrocarbon oile, as a cement mixture for the manufacture of ateel. The object of the invention is to convert iron into ateel economically, and to utilize the waste bone accumulated in the procesa of manufacture of the article known aa kosomoline. The bonecarbon is impregnated with hydrocarbon oil. The wrought iron is caae-hardened by immeraion in the bonecarbon, heated to redness. The aurface of the iron is of extreme hardness, and the metal ie not blistered —a deairable feature in finished work.

Ethnology in Hair.

The form and substance of human hair is different in differsnt races, and may be described, in its structure, as cylindrical, oval and eccentrically elliptical. The hair of the North American Indian ia cylindrical; that of the white race is oval, and that of ths negro (which is really not hair but wool), is eccentrically elliptical. When ths hair is cylindrical, the stretching aud shrinking powers are equal on all sides of the filament, and this condition gives it the lank, straight appearance of that of ths pure blood Indian. The oval hair displays a greater number of fibres upon the flattened side than elsewhere,—and this condition givee the hair a teudency to curl or curve in that direction. When eccentrically elliptical, it not only always curls but oftcn assumes a spiral shape, as on the head of the uegro. The hair of the Chinese ie nearly cylndrical, and hence it is that curled hair is almost uuknown among that people. I have passed the hair of the Nortb American Indian, and also that of a Chinese, between rollere, so ae to flatten the pile, and each instantly curled. We may, therefore, easily determine the shape of the filamente of hair from its appearance. The cylindrical hair (and coneequently lank) of the North American Indian is a type of all natives of the continent of America; that is to say, purely aboriginals. Some hair taken from the Templo of the Sun, near Lima, in Peru, in South America, belonged to one of the ancient inhabitants of that country, who were possibly, and probably, I think, of the eame race ae the mould-builders of North America, wae cylindrical, and coneequently straight. When the mound-buildere flonrished as the poeessore of our land west of the Alleghany Mountaine, we know not. The ancient Peruviane, their brethren, had cylindrical hair, and thereby is proven their affinity to the North American Indiane.—*Historical Record.*

THE THEORY is now advocated by eome very eminent astronomers that the peculiaritiee of configuration observed on the eurface of the moon are due to the sole action of volcanic forcee, whereae those which the earth preeents reeults from a combination of volcanic and atmospberical agenciee. Thue, the most characteristic feature of all lnnar volcanos is the ring or hoop-shaped cratcr, surrounded by circnlar or nearly concentric ridgee. On the earth's eurface, volcanoa deviate more or lese from thie type, and, if these deviations be owing to the differences between terreetrial and lunar euperficial forces, it ie argued that euch differences will be most distinctly manifested in those casee where euch terrestrial forcee possese the higheet degree of energy. A notable illustration adduced in support of this point is the peculiar structure of the volcauoe in the island of Java, where the action of tropical rains and hurricanes has been effective in producing the very widest differencee between the terrestrial volcanic summits and those observed on the moon'e surface. Instead of any hooped structure, the former present specimens of radiating ribs, like those of a folded lamp ehade, or an umbrella half closed—an appearance dne to the very regular manner in which tropical currents scope out the friable summits of cratere.

FUTURE ECLIPSES OF THE SUN.—Mr. Robert T. Paine communicaies to *Silliman's Journal* a list of eclipses vieible in the United States during the remainder of thie ceutury. The first central eclipee will be that of September 29, 1875, which will be annular in part of the State of New York and in four of the New England States. The duration of the ring on the central liue will be three minutee, thirty-nine eeconde. At Boston it will be only two minntes, twenty-nine seconds. The belt of country over which the annular eclipse will extend will he 110 miles wide. Within it are situated the observatories of Hamiltou College, Albany, Harvard University, Amherst College, and Dartmouth College. The first total eclipse will be that of July 29, 1878, when the shadow of the moon will pase over Britieh Columbia, Montana, Colorado, Texae, and Cuba. At Denver, Colorado, the eclipse will be total nearly three minutes.

INTERESTING TO IRON BUILDERS.—A recent diecovery, of especial interest to iron builders, ie mentioned in some of the foreign technical journals, which would appear to deserve attention in this country. The diecovery relates to the preeervation of iron beams used in hydraulic works, and coneiste in the application of a chemical proceas, operated at once, without any particular tools, and at a comparatively trifling cost. Suppoaing, for instance, it is deaired to join two iron beama together; holea are firat bored and afterwards filled with some zinc filling mixed with any fatty material, after which the peg or acrew is introduced in the ordinary manner. A galvanization, it ia said, is thua produced, in its characteristics and effects absolutely the same aa when iron is dipped into molten zinc, and—as will readily be aeen—at a greatly reduced expense. It ia also affirmed that the same proceaa can be applied to timber; a number of careful experimenta having bsen made to test its adaptability for this purpose, with the most satisfactory and succeasful reaulta.

EAR TRUMPETS of a wonderful constructiou by which eounda can be heard at a diatance of a mile, are to be on exhibition at the Vienna Expoaition.

Stock Sales for Week Ending Nov. 14—S. F. Stock & Ex. Board.

NAMES OF COMPANIES.	Assess't	Shs. in ft.	FRIDAY. Shs	Prices.	SATURDAY. Shs	Prices.	MONDAY. Shs	Prices.	TUESDAY. Shs	Prices.	WEDNESD'Y Shs	Prices.	THURSDAY. Shs	Prices.	Tot'l Sh's Sold.	Advnc	Declin
Adama Hill	*		100	1¼	100	1⅛									200		
Alpha	*	300	20		60	50 @50½	5	48	40	47 @48	10	50	35	56@52	150		
Alpha	$	800	37½	10	4½		100	5 @ 4¾	250	4⅜ @ 5			20	4⅜	380	¼	⅛
American Flag	$	2600	11⅝	15	13¾@13⅝		25	13	130	13	40	13½	220	13 @12½	110	12@13	530		
Amador Tun	$										150	6¾@ 7	400	7			550		
Arkansas	$			300	2¾												300		
Arizona & Utah	*	1900	19½	50	2½												50		
Belcher	*	1010	10	355	11½ @ 11⅝		435	10⅞ @ 11⅜	315	10⅝ @ 10⅞	219	10⅞ @ 11	115	10⅞ @ 10⅝	1894		8
Baltimore Con	*						220	2¾	50	2¾	585	2¾@ 2½	377	2¾@ 2½	1232		
Bowery	$	1000	30	75	1⅞@ 2				50	1¾	50	1¾			175		
Bacon	*																
Buckeye	*			50	2		40	1⅝							90		
Best & Belcher	*	224	100	650	72¼@ 7⅝		120	7½	45	7	75	6	40	7	90	7¼	995		⅜
Bellevue	$	8000	2¾														
Belmont	*			685	4 @ 4½		110	4	100	4	390	4 @ 4¼			1300		
Chollar	*	2800	10	765	68½@12		280	69 @71	425	68 @70½	700	67⅜@70	148	68 @70½	2526		2
Caledonia	*	5000	4	755	23½@31		599	23½@31	380	25 @27	770	25½@27	580	27 @29	3140		1½
Cons. Virginia	*	1160	20⅜	160	74 @77		290	65½@72	945	51½@70	975	55 @68	1200	54 @62	3415		19
Confidence	*	130	192	120	12½@13		120	11⅜@12	30	11½@12	200	11½@11⅝	460	12 @13⅛	1150	½	
Crown Point	*	600	16⅝	125	123 @126		223	123 @ 127	180	120 @125	470	116 @123	200	115 @ 118	1801		9
Central	*	70	357	50	9										50		
Calaveras	*	6200	6¼														
Condor	$			300	1⅝		200	1¾@ 1¾	900	1¾@ 1¾					1400		
Columbus	*												220	1¾@ 1⅞	1750	¾	
Chapman	$	700	40				150	1½@1¾					200	1½	350		
Chief of the Hill	*	1000	30	2120	5½@ 6¼		760	5 @ 6¼	1510	5 @ 5½	1625	5½@ 5¾	440	5⅝@ 6	570	6	7025	¼	
Chief East Ex.	$																
Cederburg	*	1200	20								25	7¾			25		
Daney	*	2000	12				100	5							100		
Eureka Cons.	*	1000	30	90	1¾@ 1½				60	1½					150		
Eureka	$	1680	112	685	22½@23		460	20¾@21½	415	20¾@21½	1260	21⅞@22¼	810	21 @22	4375		1
Exchequer	*	400	20				50	16							50		
Eclipse	*	70	357	5	18				10	17	20	18			48		½
Empire M.ll	*	75	16				20	9¾@10	20	10	40	9¾	45	20	61	11	196		
Excelsior	$	4500	2⅜	50	9¼		185	9½	250	9			275	8	85	9¼	847		
Gould & Curry	*	1200	4								515	8¾@ 9			515		
Golden Chariot	*	750	14½	35	200 @2½2		18	205 @ 212	872	2 0 @215	40	195 @200	21	208 @ 215	70	195 @ 205	241		
Globe	*	1600	12½	40	12½@13				120	13 @14	650	16 @17	40	13½@14	48	12 @14	895		
Con. Gold Hill	$		40	125	17⅛		50	15¾					350	15½@ 17⅛	125	15½	650		
Hale & Norcross	*	400	4	100	82@85	@86	100	82 @79	103	75 @78		80 @81	215	82½@83½	675		4½
Hunn & Hunt	$	3600	8½	905	4⅞@ 4½		470	4½@ 4¾	1190	4¼@ 4½	165	3¾@ 4	225	4 @ 4½	3955		⅜
Hermes	$			100	15 @15½		100	13 @13½	100	11 @12	405	9 @11	275	11 @11⅜	960		
Ida Elmore	*	1300	17⅜	100	8½@ 8¾		200	8½	50	10	200	9 @10	650	9¾@10⅛	1020	1¾	
Imperial	$	184	543⅜	200	103@113		195	103¾@104	320	10 @104	830	10 @103⅝	265	10½@10⅝	2160	⅛	
Imperial	$	1000	40	900	17⅜@ 2		240	1½@ 1¾	100	1⅜@ 1¾	100	1¾			1340		
Independent	‡	1800	14														
Ivanhoe	*	600	5														
Julia	*	2000	15	710	4		200	4¼			15	4¼			230	4 @ 4¼	1150	¼	
Justice	$	3000	7	225	8¾@ 8⅞		105	8 @ 8½	20	8	160	8 @ 8¼	55	8½	135	8½@ 8⅝	700		⅜
Kentuck	*	95	21								8	210	35	210 @ 220	10	230	53		
Kentucky	$		20														
Knickerbocker	*	1200	20	370	5¼@ 5¾		30	4½	270	5½@ 6	25	5½	340	5¾@ 6	275	6	1300	¼	
Mammoth	*	1800	22½						50	40c					50	25c	100		
Meadow Valley	$	1125	3635	211½@223½			1815	22 @23	2310	21 @22	2080	22 @23	1690	21½@22	1665	20¾@21¾	14195		1
Mahogany	*	720		10	10½		30	10	370	12 @15½	535	13½@15½	320	13 @16	100	13 @13½	1365	3	
Mocking Bird	*																
McMahon	*		40														
Marion	*			100	1⅝												100		
Newark	$	800	12	385	4¾		615	4½@ 5⅜	315	4¾@ 5⅛	710	5 @ 5¾	1125	5¾@ 6¼	1205	6 @ 6¼	4385	2	
Ophir	*	1400	26⅜	230	55 @58½		325	58 @61	290	56 @57½	355	54 @57	290	57 @58½	265	52 @59½	1725		3
O. H. Treasure	*	800	10	190	3¼@ 3¾						10	4¾			20	4¾	220	1½	
Overman	*	12 0	12½	125	78 @82½		90	77½@78	10	75	125	70 @72¾	60	75 @77			410		
Occidental	*	200	20	100	2¾@ 2½		800	2¾@ 3	280	2¾					200	2	1380		¼
Pioche	$	1000	16⅝	460	12¾@13		160	12½@13	160	12½@12¾	40	12½@13	125	13 @13¼			1055		
Pioche West	$		30														
Pioche Phœnix	*			50	3				100	3½	100	4	60	3			310		
Page & Panaca	$	24 0		100	2		465	2	220	2 @ 2¾			310	2½			1095		
Pea Vine	*	300			75c		100	65c			100	90			200	80c	450	5c	
Phœnix	*		774	1195	2¾@ 2⅝		4310	2⅝@ 3	3795	3 @ 3¼	1875	3⅜@ 3½	975	3½@ 3⅝	1165	3¾	12315	1⅛	
Raymond & Ely	$	4000	20	305	130 @132		335	128 @ 130	675	122 @127	600	126 @ 13	670	130 @ 133	580	118 @ 123	2485		9
Savage	*	800	40	8	95 @96		115	94 @97½	160	90 @91	455	52 @90	590	86 @90	220	87½@91½	1620		4½
Seg. Belcher	$	160	7¼		584		90	78 @82½							35	75 @79	1 58		5
Sierra Nevada	*	8000		125	16 @16½		375	15 @15¾	70	15½@15¾	149	16 @15½	120	15½	120	16	674		½
Senator	*			230	90c		250	90c	300	90c	300	80 @85	200	75c			1280		
Succor	*	7600	12¾										100	3			100		
Silver Bill	*		430⅞	360	8		150	7⅞@ 8⅛			905	7¾@ 8	360	8	485	8½@ 9	2260		
Silver Peak	*								750	5½@ 5¾	650	6 @ 6⅞			615	7 @ 7¾	2015		
South Chariot	*	660											100	1½			10		
Trench	*	20	250																
Teomuech	*			100	1½		30	1½			100	1½	150	1½			380		
Wash. & Creole	$	200	110						370	2 @ 3	200	3	100	3¼	100	3¼	770		
Woodville	*	1000	20	800	7¾@ 8		1225	7⅞@ 8	115	7 @ 7¾	320	8¾	200	6½@ 6¾	650	6 @ 6⅝	3335		1⅞
War Eagle	*	1000	10																
Utah	*	1000	20																
Yellow Jacket	*	1200	25	322	110 @115		110	110 @113	170	102 @ 103	140	93 @ 101	230	105 @ 112	165	104 @ 112	1137		3
Yule Gravel	*	400	25																

NOTE.—†—California. *—Washoe. ‡White Pine. §—Ely District. ¶Eureka District. ‖—Idaho. !—Nearly.?—Over.

S. F. Stock and Exchange Board.

THURSDAY, November 14th, 1872.

The stock market has been irregular this week and generally rather depressed. The salee last week amounted to 2,418.700—a fair amount taking into consideration the holiday on the 5th. The unusual numher of assesements recently, with the few dividends, hae a depressing influence on the mining share market, but we are promised a change by a number of companies. Thus far thie month, the Raymond & Ely mine, after some difficulty, paid its dividend of $7, amounting to $210,000. The details of the litigation about thie mine will be fonnd in another column. The Black Diamond Coal Co. paid a dividend of one-half of one per cent., and the Eastport Coos Bey Co. a dividend of $5 per ehare. The Providence G. S. M. Co. have declared a dividend of $1, payable tbe 12th inst. Thie is the first dividend of this Co. The Cederburg also paid a dividend of $12,000. The influence of the Boston fire on the stock market was not great, althongh a depreseing influence was felt. The featnre of the week has been the Raymond & Ely euit.

On Friday, the businese in stocks wae good, hut prices were weak. Business at the afternoon Board wae, however, light, and prices lower at close. Belcher fell $1; Crown Point, $2; Chollar, $5; Con. Virginia, $6; Gould & Curry, $16; Hale & Norcroee, $3; Ophir, $1; Seg. Belcher, $2: Yellow Jacket, $8. Eureka Con. fell $2; Meadow Valley, 2; Raymond & Ely, $3; Pioche, $1.

On Saturday, the market was dull at lower prices. Belcher declined $4; Con. Virginia, $9; Caledonia, $1; Hale & Norcross, $3; Overman, $3; Savage, 4; Seg. Belcher, $6; Jacket, $3. Gould & Curry roee $3; Crown Point, $1.

On Friday, the market was firm, hut the "bear" influence brought prices still lower than on the previous day. Belcher declined $2; Crown Point, $2; Con. Virginia, $14; making a fall of $34 since Thursday; Chollar, $1; Caledonia, $2; Empire Mill, $1; Gould & Curry, $2; Hale & Norcross, $4; Opbir, $4; Savage, 5; Jacket, $8; Overman, $1; Raymond & Ely fell to $118 under the effect of the restraining order mentioned in another column. It recovered to $124. Meadow Valley fell $1; Pioche, $1.

Monday, stocks were a little steadier, and in some cases prices recovered. Yellow Jacket fell $10 in the morning, but recovered it in the afternoon Board. Con. Virginia rose $13 over previoue day's sale. Raymond & Ely, $3; Meadow Valley, $1. Belcher fell $3; Crown Point, $5; Gould & Curry, $15; Hale & Norcross, $1; Savage, $6.

Wednesday, the mining share market wae better, and pricee higher, although tbere was not much husinee done. Belcher roee $3; Confidence, $2; Overman $4; Savage, $4; Yellow Jacket, $10; Raymond & Ely, $5; Con. Virginia fell $9, and Eureka Con., 2.

To-day, there wes a fair husiness, hut at irregular prices. The difference in prices this week aud last will be eeen hy a glance at our "Stock Tahlee."

Below will he found news from tbe prominent minee later that in the our "Mining Summary:"

CHOLLAR.—During week ending Nov. 9tb, 60 toue of ore were extracted; 1,019 tons sent to mill and 469 tons remain on the dumpe.

SAVAGE.—During week ending Novemher 9th, 289 tone of ore were extracted assaying $34.62 per ton; 595 toue were delivered at the mills and 14 tone remained on dump.

RAYMOND & ELY.—On the 11th inst., the Superintendent shipped $30,274; previoue shipments this month amounted to $65,338, which makes a total of $95,612, equal to $10,623.55 per day. The dividend of this compauy was paid on the 13th. The mills have recently been repaired aud cleaned.

HUHN & HUNT.—From this mine $1,853 was shipped on the 9th inst.

PHOENIX.—Ten tons of bullion were shipped on the 8th, valued at $4,000; on the 10th 10 tons of hullion were shipped, valued at $3,950. Mine developing favorahly.

SILVER PEAK.—A rich strike is reported in thie miue; two hars of bullion were ehipped on the 11th, and two more on the 13th.

EUREKA.—Letter of the 9th says the clean up for tbe week's run of 15 etamps is 1,500 ouncee of amalgam.

CEDARBURG.—From this mine $6,350 in bullion bas heen received.

MINING SUMMARY.

THE following is mostly condensed from journals published in the interior, in proximity to the minee mentioned

California.

ALPINE COUNTY.

GLOBE.—Monitor *Miner*, Nov. 2: The workmen yesterday hroke into quartz and are now 4 ft. into the lode.

THE main tunnel of the Monitor is 561 ft. long.

OUR MINING SHAREHOLDERS' DIRECTORY.

ASSESSMENTS.

Name of Co.	Location.	Secretary,	S.F.Office,	Assm't.	Levied.	Delinq't.	Sale.
Alamo G. & S. M. Co.	Washoe.	G. W. R. King.	411 Cal. St.	25	Nov. 2	Dec. 5	Dec. 26
AMAZON S. M. CO.	Ely District.	M. J. McManus.	609 Sacramento St.	50	Oct. 27	Dec. 2	Dec. 23*
Alpine G. M. & M. Co.	Amador Co.	W. L. Usick.	438 California St.	1.50	Oct. 16	Nov. 16	Nov. 30
ALTURAS G. M. CO.	Crass Valley, Cal.	David Wilder.	28 Merchants' Ex.	10	Oct. 3	Nov. 2	Nov. 25*
Arkansas M. Co.	Ely District.	J. H. Applegate.	729 Monte'ry St.	50	Nov. 6	Dec. 16	Jan. 10
Atlantic & Pacific Con. M. Co.	Cal.	A. Nel.	419 California St.	10	Nov. 8	Dec. 11	Dec. 30
Bellevue M. Co.	Placer Co., Cal.	T. F. Cronise.	438 California St.	75	Oct. 12	Nov. 13	Nov. 30
Buckeye M. Co.	Washoe.	Chas. H. Fish.	419 California St.	2 00	Oct. 28	Dec. 2	Dec. 23
Baltimore Con. M. Co.	Washoe.	D. T. Bagley.	401 California St.	50	Nov. 2	Dec. 18	Jan. 11
Caledonia S. M. Co.	Washoe.	R. Wegener.	414 California St.	3 00	Nov. 9	Dec. 13	Jan. 3
Chapman M. and M. Co.	Ely Dist.	F. Swift.	415 Montg'ry St.	50	Sept. 16	Oct. 24	Nov. 15
Consolidated Virginia.	Washoe.	D. T. Baley.	401 California St.	3 00	Sept. 26	Nov. 1	Nov. 21
El Dorado M. Co.	Amador Co., Cal.	E. McFadden.	Express building.	50	Oct. 4	Nov. 10	Nov. 25
Eliza M. & M. Co.	Siskiyou Co., Cal.	T. F. Cronise.	438 California St.	1 00	Oct. 11	Nov. 12	Nov. 28
Emerald Hill M. Co.	Utah.	F. Madge.	Merchants' Exchange.	50	Oct 17	Nov. 20	Dec. 17
Empire M & M. Co.	Washoe.	W. E. Dean.	419 Cal. St.	1 00	Oct. 8	Nov. 10	Dec. 2
EXCELSIOR S. M. CO.	Nye Co., Nev.	W. A. Kollmyer.	640 Washington St.	10	Sept. 28	Oct. 29	Nov. 22
Gen. Lee S. M. Co.	White Pine.	C. F. Schultze.	426 Montg'ry St.	10	Oct. 29	Dec. 3	Dec. 27
GOLDEN RULE M. Co.	Tuolumne Co.	J. B. Russell.	432 Mon'gry St.	50	Nov. 2	Dec. 3	Jan 4*
Granite Tunnel M. Co.	El Dorado Co.	W. G. Holmes.	443 California St.	6	Oct. 1	Nov. 5	Nov. 18
Greenville M. Co.	Plumas Co., Cal.	H. C. Kibbe.	419 Cal. St.	50	Oct. 1	Nov. 5	Nov. 26
Hale & Norcross M. Co.	Washoe.	J. F. Lightner.	438California St.	5 00	Oct 18	Nov. 21	Dec. 11
Howard Hill G. M. Co.	Nevada Co.	B. L. King.	411 California St.	1 00	Oct. 23	Nov. 26	Dec. 16
HUDSON G. M. CO.	Cal.	J. L. King.	411 California St.	7½	Nov. 11	Dec. 16	Jan. 6
Hermes M. Co.	Ely Dist.	B. B. Minor.	411½ California St.	1 00	Nov. 7	Dec. 13	Jan. 6
Hahn & Hunt S. M. Co.	Ely Dist.	L. Kaplan.	Merchants' Ex.	1 00	Nov. 12	Dec. 18	Jan. 8
Ida Elmore M. Co.	Idaho.	Wm. Willis.	418 California St.	2 50	Oct. 25	Nov. 30	Dec. 21
Imperial M. Co.	Washoe.	W. E. Lean.	419 California St.	1 00	Oct. 1	Nov. 6	Nov. 29
Independent G. M. Co.	Butte Co., Cal.	G. T. Grimes,	240 Montgomery St.	40	Oct. 15	Nov. 19	Dec. 10
INDUS G. & S. M. Co.	Virginia City, Nev.	David Wilder.	28 Merch'ts' Ex.	50	Oct. 19	Nov. 23	Dec. 16*
Julia G. & S. M. Co.	Washoe.	A. Noel.	419 California St.	2 50	Nov. 6	Dec. 10	Dec. 28
Justice M. Co.	Washoe.	T. Wegener.	414 California St.	2 00	Oct. 2	Nov. 6	Nov. 27
KINCAID FLAT M. CO.	Tuolumne Co.	R. H. Cornell.	220 Clay St.	3 00	Oct. 18	Nov. 21	Dec. 10*
Knickerbocker M. Co.	Storey Co., Nev.	Henry Boyle.	Stevensons' Build'g.	1 00	Oct. 7	Nov. 9	Nov 28
LADY FRANKLIN G. & S. M. Co.	Cal.	J. S. Lutz.	507 Montgomery St.	50	Sept. 24	Oct. 28	Nov. 18
Lemon M. & M. Co.	Eureka District.	J. T. Milliken.	605 Merchant St.	1 00	Oct. 26	Nov. 30	Dec. 20
LOUISE M. CO.	Lincoln Co., Nev.	Wm. H. Watson.	302 Mont'gry St.	50	Sept. 14	Oct. 18	Nov. 9
Mammoth S. M Co.	White Pine.	J. L. King.	411 California St.	10	Nov. 12	Dec. 18	Jan. 8
Mahogany M. Co.	Idaho.	T. J. Owens.	Express Building.	2 00	Sept. 25	Nov. 4	Nov. 20
National M. Co.	Nye Co. Nev.	B. B. Minor.	411½ California St.	50	Sept. 26	Oct. 28	Nov. 18
Newark S. M. Co.	Ely District.	T. T. Bailey.	401 Cal. St.	75	Sept. 24	Oct. 30	Nov. 23
NEVADA L. & M. CO.	Elko Co., Nev.	Wm. H. Watson.	302 Monte'ry St.	8	Nov. 10	Nov. 10	Nov. 23*
New York Con. M. Co.	Washoe.	H. G. Kibbe.	419 Cal. St.	25	Nov. 6	Dec 12	Dec. 30
NOONDAY S. M. CO.	White Pine.	Chas. H. Fish.	419 California St.	50	Oct. 11	Nov. 15	Dec. 4*
NORMAN G. M. Co.	Amador Co	W. H. Watson.	302 Montgomery St.	5	Nov. 11	Dec. 12	Jan. 4*
National M. Co.	Nye Co. Nev.	B. E. Miner	411½ California St.	50	Nov. 7	Dec. 12	Jan. 6
OLD PROVIDENCE M. Co.	Lassen.	Frank Swift.	415 Montgomery St.	25	Nov. 7	Dec. 14	Jan. 6*
OHIO CONS. G. M. CO.	Calaveras Co.	W. A. Knapp.	432 Montg'ry St.	10	Sept. 24	Nov. 2	Nov. 23*
O. H. Treasure M. Co.	White Pine.	D. A. Jennings.	401 Cal. St.	1 50	Oct. 9	Nov. 15	Dec. 6
Ophir S. M. Co.	Washoe.	E. F. Stone.	Merchants' Exchange.	5 00	Oct. 22	Nov. 26	Dec. 13
Pacific Coal M. Co.,	Contra Costa Co.	A. Lachman.	First and Market.	10 00	Sept. 25	Nov. 4	Nov. 20
Panper M. Co.	Idaho.	J. L. King.	411 California St.	50	Oct. 1	Nov. 19	Dec. 16
Peavine S. M. Co.	Ely District, Nev.	C. F. Balcom.	426 Montgomery.	25	Oct. 11	Nov. 20	Dec. 16
Peter Walter, M. Co.	Placer Co., Cal.	T. J. Owens.	Express Building.	50	Oct. 21	Nov. 26	Dec. 17
Picton M. Co.	Washoe.	S. Phillips.	415 Montgomery St.	12½	Oct. 18	Nov. 18	Dec. 6
POCAHONTAS M. Co.	El Dorado Co.	D. A. Jennings.	401 Cal. St.	50	Sept. 1	Oct. 24	Nov. 18
Pioche S. M. Co.	Ely District.	C. E. Elliott.	419 Cal. St.	1 00	Nov. 6	Dec. 12	Jan. 6.
Phœnix S. M. Co.	Eureka District.	J. Maguire.	419 California St.	50	Nov. 8	Dec. 16	Jan. 6
Pacific Borax Co.	Nevada.	E. Lenha.	607 Montg'ry St.	35	Nov. 12	Dec. 12	Dec. 27
Placer M. & C. Co.	California.	J. L. King.	411 Cal. St.	25	Nov. 11	Dec. 14	Jan. 4
Rising Star M. Co.	Idaho.	Wm. Willis.	419 California St.	1 00	Oct. 28	Dec. 3	Dec. 23
Schell Creek M. Co.	Schell Creek, Nev.	P. W. Van Winkle.	201 Cal. St.	10	Nov. 1	Dec. 3	Dec. 23
Shipley M. & M. Co.	Placer Co., Cal.	W. L. Ustick.	438 California St.	1 00	Oct. 16	Nov. 18	Nov. 30
Senator S. M. Co.	Washoe.	Henry Boyle.	Stevenson's Building.	50	Oct. 29	Dec. 2	Dec. 21
SILVER WAVE M. CO.	White Pine.	J. W. Gaik.	418 Cal. St.	1 00	Sept. 21	Oct. 26	Nov. 25*
St. Patrick M. Co.	Placer Co., Cal.	H. A. Jennings.	401 Cal. St.	2 00	Oct. 31	Dec. 3	Dec. 24
STATE OF MAINE M. Co.	Amador Co.	H. B. Congdon.	306 Montgomery St.	5	Oct. 17	Nov. 26	Dec. 16*
Star Consolidated M. Co.	Eureka Dist.	G. R. Spinney.	320 Montg'ry St.	25	Nov. 1	Dec. 6	Dec. 27
Succor M. & M. Co.	Washoe.	W. H. Watson.	302 Mont'gry St.	1 00	Sept. 20	Oct. 21	Nov. 21
Tecumseh G. S. & C. M. Co.	Calaveras Co.	J. Washington.	634 Washington St.	25	Oct. 10	Nov. 16	Dec. 6
Utah S. M. Co.	Washoe.	W. E. Dean.	419 California St.	1 00	Nov. 7	Dec. 12	Jan 4
Wellington M & S. Co.	Utah.	R. Wegener.	414 California St.	10	Nov. 12	Dec. 18	Jan. 7
War Eagle M. Co.	Idaho.	C. F. Balcolm.	426 Montg'ry St.	2 00	Nov. 4	Dec 10	Jan. 6
Washington & Creole M. Co.	Ely Dist.	F. D. Tilney.	Merchants' Ex.	50	Sept. 9	Oct. 9	Nov. 11
Yuba Gravel M. Co.	Nevada Co., Cal.	J. A. Gordon.	108 Battery St.	25	Sept. 17	Oct. 21	Nov. 11

MEETINGS TO BE HELD.

Name of Co.	Location.	Secretary.	Office in S.F.	An'l or Sp'l.	Date.
Bacon M. & M. Co.	Washoe.		411 California St.	Special.	Nov. 19
Consolidated Amador.		D. D. Colton, Trustee.	402 Mont'gry St.	Annual.	Nov. 16
Heckerdorn M. Co.		L. Leorne.	513 Jackson St.	Special.	Oct. 26
Lemon M. & M. Co.	Ely District.	J. T. Milliken.	605 Merchant St.	Special.	Nov. 26
Keystone M. Co.	Washoe.	Frank Swift.	415 Montgomery St.	Annual.	Nov. 27
Old Providence M. & M. Co.		Frank Swift.	415 Montgomery St.	Annual.	Nov. 12
Deseret Cons. M. Co.		J. L. King.	414 California St.	Special.	Dec. 2
Cottonwood Creek G. M. Co.		J. L. King.	414 California St.	Special.	Dec. 2
Tehama Cons. M. Co	White Pine.	W. W. Stetson	414 California St.	Annual.	Nov. 26
Sidney Brooks Tunnel Co.			Merchants Exchange.	Special.	Dec. 7

LATEST DIVIDENDS—Within Three Months.

Name of Co.	Location.	Secretary.	Office in S. F.	Amount.	Payable.
Belcher M. Co.	Washoe.	H. G. Kibbe.	419 California St.	$3.00.	Sept. 10
Black Diamond Coal Co.	California.	F. B. Cornwall.	Or. Harrison and Spear.	½ per cent,	Nov. 11
Cederburg G. M. Co.	California.	D. M. Bokce.	420 Montgomery St.	50c.	Oct. 31
Crown Point G. & S. M. Co.	Washoe.	C. E. Elliot.	419 California St.	$3 00	July 5.
Eastport Coos Bay Coal.	Oregon.	J. L. Pool.	Merchants' Ex.	$5 00	Nov. 12
Mahogany G. & S. M. Co.	Idaho.	T. J. Owens.	402 Mont'gry, St.	$1 50	Aug. 7
Raymond & Ely M. Co.	Ely Dist., Nev.	A. J Moulder.	419 California St.	$7 00	Nov. 11
Pioche S. M. Co.	Ely Dist., Nev.	C. E. Elliot.	419 California St.	$1 00	Aug. 10
Providence G. & S. M. Co.		J. M. Buffington.	Merchants Exchange.	$1 00	Nov. 12

* Advertised in this journal.

CALAVERAS COUNTY.

NEW MILL.—Calaveras *Chronicle*, Nov. 9: A 5-stamp mill is being erected on the Wolverine Railroad, and will he in readinese to commence cruehing in about a month.

MACHINERY.—C. J. Garland, who recently purchased the old Vance mill, Mosquito Gulch, is having the machinery overhauled and thoroughly repaired.

RICH ROCK.—Tbe Horse-thief and Jesus Maria, contiuues to pan out ae well ae ever. A recent clean-up, after crushing 10 tons of rock, yielded $380.

ITEMS—RAILROAN FLAT DIST.—The main shaft of the Wolverine is going down one ft. per day. The ore in the bottom ehowe pleuty of free gold. The lower north level of the Petticoat is in 60 ft. The level will have to he extended prohably 800 ft. to reach the knowu chimneys of pay ore.

WEST POINT DIST.—The Bartola has been freed of water and ie awaiting the arrival of prospective purchasers.

MOSQUITO DIST.—Grasehopper extending the lower nortb level for prospecting purposes. Some 30 tons of fair ore on dump. Dowling & Co. crushed 60 tone of qnartz yielding $24 per ton. The new building for the nse of the Good Hope mine and mill are nearly completed. Litle progress ie made in the lower tunnel of the San Bruno. The new shaft of S. Smith & Co.'s mine is down 50 ft., vein 3 ft. wide. The Cuha, first east exteneion of the S. Smith & Co. mine, is being opened. A Co. of Chilenos are takiug out very handsome ore near the San Bruno.

NEVADA COUNTY.

EMPIRE.—G. V. *Union*, Nov. 5: A har of gold was brought in yesterday valued at $8,000. Total produce for the month $14,000—with expenses $9,000.

ITEMS.—The Empire, Ophir Hill, is doing magnificently. A few days ago a new, large and rich ledge was struck in the 8th level. It is fully 3 ft. thick and shows well in heavy sulphurets and in free gold.

The Idaho has started its 35 stamps with plenty of rich ore on hand.

PLACER COUNTY.

AUBURN MINE.—Placer *Herald*, Nov, 9: Fine, rich milling ore has heen struck in the eaet drift. The western drift has heen run from the 175-ft. level, through fabulously rich rock, some 80 ft. wheu another force was put to work running an east drift from tbe same level, and at about 40 ft. they struck a rich hody of milling ore.

PLUMAS COUNTY.

STRUCK IT.—Quincy *National*, Nov. 2: The workmen in the Baker ledge, Cherokee, have recently been sinking a sbaft to open out another level in the mine, and the lode has attained a width of 4 ft., the rock paying at the rate of $16 per ton. The 12-stamp mill is running steadily, and making good returus.

THE NEW DITCH CO.—Kelly, Garland & Co., have recently commeuced operatione on their new ditch, leading the waters of Indian Creek, from a short distance below the old Blood sawmill, to their claime eome 4 milee below, or near Soda Point. The ditch will be 6 ft. wide on top, 3 ft. deep, aud with the grade given, ie to ruu 3,000 inches of water.

EUREKA.—Several hundred men are hard at work on the Eureka mountain, and timee are very lively in that section.

BIG CHUNE.—Jo. Rock and partner, whose claime are on Yellow Creek, discovered a few daye ago

Nevada.

ELY DISTRICT.

Review—Bullion.—Ely *Record*, Nov. 2: The shipment for Oct. amounted to $454,557.07. The shipment for the week amounted to $87,458.29.

Silver Peak.—An incline has been sunk on this ledge 120 ft., showing a well developed vein averaging 5 ft. in width. At the 90-ft. level 2 drifts have been run, the north drift being in 30 ft., and the south 75 ft. At this depth stoping has been commenced. The body of ore is from 6 to 6¼ ft. in width. In the 120-ft. level the ledge shows as large and is of the same grade of ore as the above.

Excelsior.—The ledge in many places is 4 ft. wide. In the winze, which is 80 ft. below the 200-ft. level, some extremely fine ore has been discovered. The new working shaft is down 100 ft. The 5 stamp mill at Bullionville is working steadily on this ore and is making excellent returns. Last week, bullion to the amount of $5,000 was shipped, and another shipment will be made on the 5th inst. The bullion is 935 fine.

Phœnix Phenix.—On Thursday work was resumed on the shaft, which is down 130 ft. with some improvement in the rock. A portion of the hoisting machinery has arrived.

Sunbeam. — The new hoisting machinery works satisfactorily and commenced raising ore last Saturday. There are 100 tons on the dump of first-class ore.

Caroline.—Capt. Hardy has let a contract to sink a shaft 100 ft.

Meadow Valley.—The yield for Oct. will be fully $115,000. It is expected the product of the present month will fully reach $150,000. The production of ore for the past month was nearly 1,200 tons. A full complement of men is steadily employed in No.s 3 and 7, and the product of ore for this month will not fall short of 1,800 tons. In shaft No. 3 the workings are being most vigorously prosecuted, and the results past and prospective are most encouraging. In No. 7 work has been resumed in the western drift on the 4th level, and in a few days sinking will be commenced on the same incline which is 740 ft. in depth.

Raymond & Ely.—The shipments for Oct. reach $342,000.

Mazeppa.—The shaft is 90 ft. in depth and has cut several streaks of fine ore. The ledge is somewhat broken and not very well defined.

Ivanhoe.—The working shaft is down 220 ft. The ledge at the bottom is 2 ft. wide showing a high grade of soft decomposed ore. The old shaft is 320 ft. deep, and the ledge in that portion is 3 ft. in width.

Marion.—The drift on the line of the lodge is 100 ft. in length. The ledge has improved from the start. In the face of the drift it looks very well.

Chief East Ex.—Three shifts are employed. The winze being sunk in the 90-ft. level is 40 ft. in depth.

Page and Panaca.—In the 360-ft. level, which is in 183 ft., the indications are good for speedily cutting a vein of ore. The shaft has reached 463 ft. The ledge near the bottom is from 2 to 3 ft. in width.

Alps.—The shaft is 194 ft. deep. At this point a station has been opened and a drift will be commenced on Monday. It is expected to reach the ledge in about 30 days.

Pioche.—During the past week, sinking has been commenced upon the ledge below the fifth level.

Huhn and Hunt.—Seven bars belonging to this Co., valued at $8,969.63 are ready for shipment.

Amador Tunnel.—The face is 320 ft. from the mouth. A station has been formed in the winze about 35 ft. from the level of the tunnel, and a drift opened along the line of the ledge. It is in some little distance, and a very fine body of ore was struck last Friday.

Bowery.—The shaft is down 230 ft. and still sinking. The new machinery works to a charm.

Jolly Traveller.—Sinking the shaft. It is thought that the ledge is close at hand.

HUMBOLDT COUNTY.

Bullion. — Unionville *Silver State*, Nov 2: Amount shipped from the Arizona since our last issue, was $6,833.

Dun Glen.—Work progresses on the Leng Syne, Empire, Tallulah, Gem and others. On the Empire 6 men are engaged. The Leng Syne producee sufficient ore to supply Sprague & Co.'s mill steadily. A new 5 stamp battery has been placed in Sprague & Co.'s mill, to which 5 more stamps will be added soon.

REESE RIVER.

Bullion.—Reese River *Reveille*, Nov. 2: W. F. & Co. shipped from this city during Oct. 70 bars weighing $6,912 lbs. valued at $101,939.99.

BELMONT.

Monitor Co.—Have their lower tunnel within a few feet of the main ledge. The rich body of ore struck last week in lower south level has been stripped for some distance, and proves as good as it was when it was first opened.

El Dorado Co.—Has its 400-ft. level run 33 ft. southerly. Several large patches of very rich Stetefeldt ore have been cut through. The stopes in north 340-ft. level show a 6-ft. breast of splendid milling ore. The foundations of the El Dorado mill are all laid, and the framing nearly ready to raise. This mill will be of 20 stamps, 6 pans and settlers in proportion, and a first-class Stetefeldt furnace, with all the latest improvements. Working on the Co.'s 2 mines 50 men, and on the mill 20 men.

Belmont Co.—Are building a new house over their hoisting works on the Canfield. The levels are being run by contract, and are progressing finely. Working 30 men.

Combination Co.—Taking out some fine ore from the Transylvania. Working 20 men.

El Dorado North Co.—Have had their mine surveyed with a view of sinking a vertical shaft to cut the vein at a greater depth than any of the present workings.

WASHOE.

Summary.—Gold Hill *News*, Nov. 7:

Belcher.—Daily yield 300 tons, all of which is hoisted through the company's own shaft, having no further use for the Yellow Jacket shaft except in getting timbers, men, etc., through into the ore stopes of the 1,000 ft. level. The main incline is down 115 ft. below the 1100-ft. level. The main south drift at the 1200-ft. level is in 176 ft. from the Crown Point line, with the face in fine ore. A cross-cut east is commenced at this point. The old cross-cut or drift east from the winze is being reopened to extend farther east. The ore breasts of the 1100-ft. level yield and hold out admirably. At the 1000-ft. level the drift south from the ore stopes is in 252 ft. from the Crown Point line, toward the shaft, and from the shaft the drift north to connect is 229 ft.

Hale & Norcross.—All the improvements in the hoisting machinery have been completed.

Silver Hill.—The prospecting drifts on the first level are vigorously pushed forward.

Utah.—No work has been done in the new shaft for the past week. The reopening of the closed chambers in the old mine is continued through the old upper adit. A fine looking vein has been opened, but the ore is not of sufficiently high grade to be redneed with profit.

Virginia.—Work has been resumed on the hoisting works. The shaft is down 30 ft. below the 500-ft. level in good working ground. The cross-cuts and drifts south on the 500-ft. level show no change. The main west drift on the 1167-ft. level from the Gould and Curry is driven ahead.

Yellow Jacket.—Daily yield 20 tons from the old workings, above the 1000-ft. level. The new pumping arrangement works splendidly.

Occidental.—The northern adit is pressed vigorously forward.

Julia.—Sinking the shaft is making excellent progress. The main east drift is in 800 ft.

Caledonia.—The south drift on the 300-ft. level of the old works is again in ledge matter.

Imperial Empire.—Sinking the incline and prospecting the various levels goes steadily on.

Insurance.—The incline is down 52 ft., the entire size of the shaft in good ore.

Senator.—The shaft is down 265 ft. in good sinking ground. The new hoisting works are finished.

Sierra Nevada.—Prospecting the 500-ft. level is still vigorously prosecuted.

Crown Point.—Daily yield constantly increasing. The ore breasts and stopes of the 1,100 and 1,200-ft. levels continue yielding splendidly. The various cross-cuts at the 1,300-ft. level are in fine ore. The body at that point will doubtless prove fully as good and extensive as in the levels above. There is no present indication of the bottom of this immense ore body being yet found. Neither is its extent south or north fully ascertained.

Baltimore Cons.—The shaft is down a little over 300 ft. At the 250-ft. station a drift for the ledge was commenced week before last which is in 45 ft.

Buckeye.—The fine body of ore developed recently between the second and third levels is looking splendidly. It is 10 ft. wide. The stopes between the first and second levels are yielding excellently, and the mill is kept steadily running.

Justice.—The drift east at the 400-ft. level is in promising quartz, and the drift south is in porphyry and clay.

Daney.—The drift at the 700-ft. level is in 42 ft. from the shaft. Cross-cutting is being commenced to more fully test the ledge at that point.

Knickerbocker.— The main west drift is in 300 ft., running through porphyry with occasional seams of clay and quartz.

Crown Point Ravine.—The work of cleaning out and re-timbering the shaft, is making good headway.

Union Cons.—The main west drift is in 330 ft. in good working ground.

WHITE PINE.

Bullion.—White Pine *News*, Nov. 2: The shipment during the past week, was $5,939.09.

Treasure Hill Mines—Eberhardt & Aurora Co.'s Mines.—The Eberhardt, Blue Belle and Attwood shafts have connected at the lower level, and sinking for better ventilation. Prosecuting the drift from the bottom of the North Riedele chamber to the north. Central shaft down 144 ft. Running a drift from the Lady's chamber south to connect with the Central shaft. In the Beecher, ore of a fair grade is being taken out of the disputed ground.

Beecher Cons.—The ore in the old Blesdel works holds out. In the Beecher works it is supposed a body of ore will be struck.

O. H. Treasure.—The various workings are looking well. The Wheeler tunnel is being pushed ahead in spar and vein matter, which is dipping downward. The ore in the shaft below the tunnel continues in quality and quantity.

Sunbeam.—Sinking in the Moscow shaft, and running a little to the South in quartz and black spar. The mine shows improvement since last review.

Mammoth.—The bottom of the shaft is looking well, and down about 55 ft. in good ore. Shipping ore to the Big Smoky mill.

Silver Plate.—Running in the tunnel which is over 50 ft. deep, in good ore.

Noonday.—Resumed work on the cross-cut in the lower tunnel, and shipping good ore to mill.

East Sheboygan.—Prospecting and forming connection between the air shaft and South drift, and prospecting into the hill.

Copper Glance.—Working in the northwest drift, from which good ore has been extracted during the past week.

Outside Ists.—Robinson.—The Canton Co.'s furnace will start up in about 5 days. A large body of high grade ore has been struck in the Old Bachelor. The Emma shows a large body of high grade ore. The Cecelia shows a ledge of high grade ore, rich in gold, assaying from $100 to $200 per ton, without being assorted. The Rathburn is down 45 ft. in good ore, showing assays from $100 to $500 per ton.

A contract has been let to run a ditch from the shaft of the Old Bachelor. At 27 ft. after running on the drift 4 ft. from the shaft, a ledge of A No. 1 rock has been found. They have gone in 10 ft. on the ledge, and have not yet got through the body of ore, which assays $750 per ton.

Western Slope White Pine Mt.—Trench.—The west drift has struck a body of rich ore, which appears to be of considerable extent.

Schell Creek.—Schell Creek *Prospect*, Nov. 2: McMahon.—The shaft is down 100 ft. below the croppings and shows the foot wall at this depth to be nearly vertical; a fine body of ore in the face. They will soon commence a cross cut and run for the hanging wall; levels will then be run from the shaft in both directions along the ledge for the purpose of stoping out; the tunnel is in 170 ft.

Jupiter.—Shaft and tunnel look better than ever. The shaft shows good average ore at the bottom.

Kavanagh Tunnel.—Is in 108 ft.

Tehama.—Are working 20 men. Work on the upper and lower tunnel is being pushed with vigor; taking out considerable ore from the Allen No. 2, War Eagle, and other locations on the hill. The mill will be completed about the 20th inst.

Schell Creek.—Tunnel in 238 ft. Working 2 shifts.

Queen Springs.—Labaoss Tunnel.—In 210 ft. Working 2 shifts.

Caffrey.—Sold last week to a S. F. Co.

Ruby Hill.—Silver Wreath and Lookout Co.'s commenced work on the 29th; force of 3 men; running tunnel to Silver Wreath.

Wide West.—Running tunnel to strike the ledge; expect to strike it next week; in 60 ft.

Monitor.—Will commence work next week.

Cow and Calf, No. 2.—Working day and night; large body of good ore in sight.

Tambien.—Shaft down 47 ft; south drift in 40 ft.; at this depth rich ore has been taken out.

The 5-stemp mill at Ruhyville is running on ore from the Birch.

Arizona.

Mines and Mining.—Prescott *Miner*, Oct. 26; Mohave Co.—The shaft on the Fairfield is down 115 ft.; the vein is 8 or 9 ft. thick; rich rock.

The Empire Co. has two shafts on the Empire, each over 100 ft. deep; ledge some 12 ft. thick.

The Cupel, Little Tiger and other lodes are producing very valuable ore.

Maricopa Co.—Rich rock is every day being found in the mounteins near Phœnix and other points.

Pima Co.—The people are in great glee over recent rich finds of gold and silver.

Colorado.

Mt. Lincoln.—Denver *Tribune*, Nov. 2: The owners of the "Moose" have engaged 12 men to work day and night throughout the entire winter.

Over 1,000 tons of ore that have been taken out of the different mines, are stored at different points ready for smelting.

The "Moose" has 275 tons averaging over $400 per ton—the "Lincoln" 75 tons, averaging $300, per ton, the "Aztec," Mt. Bross, 30 tons, averaging $150 per ton.

Idaho.

Local Record.—Silver City *Avalanche*, Nov. 2: Red Jacket.—Work on the edit tunnel is steadily progressing, showing a vein 12 inches wide of very fine ore. It is the intention to drive this tunnel till it connects with the north shaft, where a large body of stoping ground will be opened. This ground will yield from 6,000 to 8,000 tons of ore. The South shaft shows a vein averaging 15 inches wide. The north shaft is down over 90 ft. on a vein equally good. A milliug of 80 tons, taken as an average from all parts of the mine, yielded $40 per ton.

South Mt.—The blower and other machinery for the S. M. S. Co.'s furnace arrived at Bullion last Thursday, and will immediately be put in position.

War Eagle.—Is being thoroughly prospected. The vein in the 5th level north, both in the stopes and drifts is of good size and quality. South in the same level it is smaller, but the prospects are good. The 3d level stopes show finely throughout, and it is estimated that there are at least 1600 tons of good milling ore there.

Empire.—The shaft is well timbered on the 3d level, and the drifts at that point started north and south. A contract has been let to sink the shaft 100 ft. for the 4th level. The Cosmos mill is crushing Empire ore at present with good results.

Mahogany.—The 5th level drift south is in 120 ft., showing a 15-inch vein of good ore. The 6th level drift south is in 115 ft., showing upon the face a fine vein of ore, rich in silver and permeated with free gold. Ten tons of ore are being daily hoisted. They have 350 tons in the ore-house, and will commence hauling to the mill to-day.

Minnesota.—They have a splendid ledge in the 4th level south. Within two weeks the 4th level drift and the south winze from the 3d level will be connected.

Pauper.—They are busily engaged in putting up buildings.

Golden Chariot.—The 9th level drift south is in 50 ft. showing a 2-ft. vein of fine looking ore. The Ellmore mill will commence crushing Golden Chariot ore to-day.

Ina Ellmore.—The shaft is going down rapidly. Splendid ore is being taken from the 8th level stopes and 9th level winze.

Montana.

The Jefferson Smelter.—Helena *Herald*, Oct. 31: The smelting works at Jefferson are engaged in cupelling 15 tons of rich silver bullion.

Ten Mile Silver Dist.—A lead, with a 15 ft. crevice, and rich ore, has recently been struck.

Legal Tender.—Work is being vigorously pushed. They are working 3 8-hour shifts in sinking. They have 26 inches of ore in the bottom of the shaft, 14 inches is of first class, assaying $700, the balance—second class—averaging about $200 per ton.

Utah.

Big Cottonwood.—S. L. *Tribune*, Nov. 7: The Konigsberg consists of argentiferous galena, yellow and bluish-green chlorides. The discovery shaft and tunnel have been worked 30 ft. and exhibit a width between well-defined walls of 5 to 8 ft.

The Venus vein exhibits well-defined quartzite wall rock 4 ft. apart, at present only showing a few inches of solid galena, carbonates and chlorides. On this vein a shaft has been sunk a few feet and a tunnel, 300 ft. apart, both exhibiting evideuces of a good mine.

The Thoa exhibits a vein between well-defined wall rocks of 16 inches in width, carrying 12 inches of mineral consisting of galena, yellow carbonates and chloridee. Ore from this vein assayed $200 silver per ton.

The Surprise vein has been opened by a tunnel 21 ft. and shows a vein of 2 ft. in width of decomposed quartz carrying $40 in silver and $10 in gold per ton, with a smell per cent. of lead.

New Incorporations.

Tintic M. and M. Co.—Nov. 11. Location: East Tintic Mining District, Utah Territory. Capital stock, $3,000 000, in 30,000 shares. Trustees—John F. Miller, William H. Patterson, O. H. La Grange, N. Hamilton and O. C. Miller.

James Point Gravel M. Co.—Nov. 13. Location: James Point Mining District, Placer County. Capital, $240,000. Trustees—W. F. Leon, J. F. Gruman, and R. H. Rogers.

Cummings G. M. Co.—Nov. 13. Location: Mount Slusi District, Kern county. Capital, $2,000,000. Trustees—W. F. Leon, R. H. Rogers and S. Riddel.

Meetings and Elections.

At a meeting of the Trustees of the Washington Quicksilver Mining Company, held on the 13th, Dr. George E. Hinckley was elected President, and H. B. Congdon Secretary. Captain James White, late of the New Almaden, was elected Superintendent. The mines of this company are located in Trinity county.

Confidence S. M. Co.—Trustees: R. F. Morrow (President) A. K. P. Harmon, J. H. Dobinson, Geo. W. Beaver and W. W. Stetson. R. Wegener Secretary.

San Jose Cons. M. Co.—Trustees: Alexander Osselli, M. Waterman, E. L. Gould, Chas. E. Hoffman and J. H. Applegate.

Mining in Butte.—The Garden ranch, consisting of 420 acres, recently changed owners, the purchesere paying $5,800. A number of Chinemen worked there some twelve or fourteen years since, but were driven off by the proprietore of the ranch. They have since been mining in Tuolumne county, but remembering the gold fields of Butte, have returned and invested where they feel confident of reeping a rich reward, and fear no danger of being again disturbed. They paid last week $2,500 to the new owner of the ranch for two and one-half acres from the upper end of the ranch, to Chinamen as mining ground, for the sum of $2,500, the ground to be leveled off and left in good shape for seeding, and revert to the ranch when mined out.

Coal in West Virginia.—There are 16,000 square miles of coal land in West Virginia. Its fields are perhaps as rich as those of Pennsylvania. Hitherto almost inaccessible, they are rapidly being opened by railroad and river transportation. The coal deposits are about 100 miles seperated from the iron ores, which are rich, varied and in close proximity to exhaustless stores of lime. The development of these mines and the growth of an active iron manufacture in that State is a mere question of time. If the coal famine in England, and the excitement it has produced both there and here, should cause these rich treasures of our material wealth to be developed from the mines and made available a few years earlier than would have otherwise occurred, both this country and England will be gainers by the achievement.

English Capital to the amount of $3,500,000 is said to be invested in mining operations in this country. We had an idea that the amount was much larger.

Lecture Upon Scale Insects.

Delivered Before the Oakland Farming, Horticultural and Industrial Club, Oct. 25th, 1872, by Dr. Wm. P. Gibbons of Alameda.

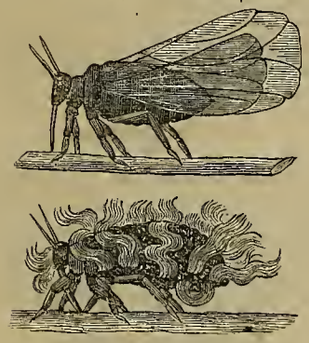
While pursuing occasional investigations into the habits of predaceous insects, I find the subject so expansive as to require more time and labor than I can now appropriate to it. My observations will therefore be directed to 3 or 4 species only, which are prominent on account of the great mischief which they commit in our orchards and gardens. We will commence with the

Aphides.

The aphides, or plant lice are so universally diffused, that everybody knows them. In the United States there are about 40 species enumerated. They belong to the sub-order *Hemiptera*, which includes all insects whose mouth is furnished with stylets, with which they pierce the vessels of plants and animals, and suck in their food. Thus, besides plant-lice, the order includes bed-bugs and body-lice, locusts, coccidæ or scale insects, chinch bug, and many others.

Our interest lies in the species commonly known as the Wooly Aphides; it differs from some others in being without a pair of honey tubes, which some have projecting from the 6th segment of the body. Bonnet discovered that aphides were parthenogenetic; *i. e.* able to produce offspring without the presence of the male. To some extent, the observation of Dr. Burnett will apply to our California species. He states "that in early autumn the colonies of plant lice are composed of both male and female individuals; these pair, the males then die, and the females begin to deposit their eggs, after which they die also. Early in the spring, as soon as the sap begins to flow, these eggs are hatched," and the young lice soon come to maturity. "In this state it is found that the whole brood, without a single exception, consists

Figs. I and II.



solely of females, or more properly of individuals who are capable of reproducing their kind. This reproduction takes place by a viviparous generation." The second generation pursues the same course as the first, the individuals of which it is composed having no trace of the male among them. The same conditions are again repeated, and according to Bonnett, he carried them through 9 generations under these conditions. Duval obtained 11 generations in seven months, and Kyber states that a colony of *aphis dianthi* continued to propagate for four years, without the intervention of males. Dr. Burnett considers this anomolous mode of increase as a process of budding, and that the whole series, like the leaves of a tree, constitutes but a single generation, which results from the union of the sexes during the preceeding fall.

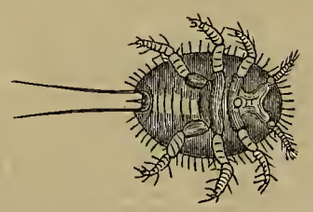
Our California winters are scarcely ever so severe as to destroy those animals which enter into a state of hybernation, and though I have watched closely during the present season, I have never been able to detect a solitary male upon an apple tree. Numerous broods of young, however, were apparent from time to time, and as the community was piled up by those coming to maturity, some friendly wind would transport a woolly group to another tree, which, happily might be on my neighbor's premises.

Hence, I entertain no doubt of our species maintaining its perpetuity without the presence of males. The only group of the two sexes which I have succeeded in finding, was on a pear tree. There were not more than fifty in the community, about one-half of which were males. The figures here referred to give a correct diagram of each sex. These aphides are now on the look out for winter quarters. A loose scale of bark—an old adherent bud envelope—a scratch or cut into the bark— the projecting edges of new wood over the surface from which a branch has been pruned, all constitute localities where they can snugly winter. To be sure, some are more fastidious and make their way down below the surface of the ground, and settle among the roots of the tree, where they continue to propagate with marvellous rapidity; so that when the careful husbandman starts in on his vernal tour through the orchard, and removes the soil from around each tree, he not unfrequently finds ten times more heads of of live stock within a few inches square, than he has of *civilized herbivora* on the entire ranch.

The Aphis, as is well known, commences its career either on the trunk of a tree, or on a small branch. It appreciates all the careless habits of a gardener, by selecting such spots for colonies, as have had bark bruised or torn; or such rough places which may have been left by clumsy pruning. From these points it gradually sends forth its pioneers to the next leaf axil, and continuing this process, it soon takes entire possession of the tree, if left alone. During the fall, in our climate, if it does not secrete itself in the manner heretofore stated, the female deposits her eggs in such places as have been already indicated, from which points they begin to hatch out in February.

The other genus belonging to this sub-order, which we will here notice, is the *Aspidiotus* or scale insect. In the Eastern States the most generally diffused and destructive species is the *A conchiformis*, so named from its scale cover representing in shape an oyster shell. As I am not certain of the identity of this species with that of California, I will pass over any effort at description till a more convenient season; sim-

Fig. IV.



Young female *Aspidiotus* from a pear tree.

ply premising that our list of the number of species, sustains the established reputation of the Pacific Coast, there being not less than five.

There is no necessity for me to repeat the account which I gave some weeks ago, of the habits of this insect. It is probably the most destructive and aggressive of any which infest our orchards. Should a single female once gain foothold on a tree, her progeny never leave it till growth and vitality are destroyed.

Our present object is to deal with the question in its practical aspects. And while giving full importance to the injury inflicted on orchards by predacious insects, we must not overlook other causes which impair the vigorous growth of trees. Most prominent among these, is insufficient or careless cultivation. Neglect this, and you neglect the fundamental conditions which produce healthy trees and perfect fruit. With vegetation as with animals, imperfect or arrested nutrition lays the foundation of disease, and gives easy development to parasitic or fungoid growth; the presence of which, reacting on the vegetable tissues, soon destroys them. How many of your orchard trees are now literally covered with a common lichen, the *Cetraria Californica!* Now, pull off a plant of this, which has been rooted on the bark for two years, and what will you see? 1st, a large pupa of an hemipterous insect; 2d, the *aspidiotus*, or scale insect; 3d, the larvæ of a neuroptera; 4th, an acarida, or mite insect; 5th, one or more spiders. And were it not for making the record appear unreasonably large, I would add a small worm which I have not diagnosed. Take the lichen, gentlemen, examine for yourselves the happy family which it contains; number these various animals on the trunk of a small pear tree one inch and a half in diameter, and five feet long, and when you reach the record of 30,000, say whether you have completed the census. Without doing this, you would hardly believe that you have scarcely an apple or pear tree in your garden which does not sustain a living population of 100,000 insects. Nay, don't be alarmed; this is a very

Fig. III.

small number even for a careful gardener. Let me treat you to a twig of almond or peach tree. Do you see that beautiful red tint which is spread round the angle of the branchlets? It looks as though some rural artist had been practising on lights and shadows. Now bring your eye glass to bear upon it, and you will see an aggregated mass of beautiful little eggs, round as a sphere, and sparkling as rubies. Count an inch of them in linear dimensions—you can't make less than 200 eggs, which will yield 40,000 to the square inch. Next number the branches and the twigs of that small tree twelve feet in hight, and by the time you finish your estimates with the greatest care, you will have over 5,000,000 of those little eggs figured out on your account book. Do you think you have them all? Then take a few leaves of the tree, and bring your eye glass in requisition once more. Of course you perceive those little animalcules which are busily striding along on four legs, apparently not knowing what to be at, yet very anxious to make themselves useful in some manner. Count again, but don't overtax your arithmetical genius. One, two, three, four and five hundred you find on a single leaf, saying nothing of an extra one hundred eggs which mamma forgot to leave below on the branches. I might as well here tell you that there are 30,000 leaves on that tree; and if we make a fair average, and estimate two hundred animalculæ to a leaf, there will be a living population of 6,000,000 of these *arachnida* with the 5,000,000 of eggs in expectancy, to be supported on that small arborial territory.

Having now got all these animals together and they present quite a formidable array—the next question is to dispose of them in an advantageous manner. The last named insect belonging to the spider family, though probably producing some little injury to trees, on account of its great numbers, is of especial benefit to the garden; it feeds upon the aphis and the scale insect. I must confess however that my acquaintance with it is of so recent date, that I am not yet prepared to demonstrate its habits, without a liability of making some errors. I first discovered them about the 1st of June, in limited numbers; two months afterward they greatly multiplied and by September they had attained their greatest development. A stream of water from the hose exterminated most of the animals and repeated once a week it almost cleared a tree on which I found the greatest number. Though found on almonds, peach, cherry, plum, apple and pear trees, they are only in quantity on the first three and I have been unable to find a live aphis or aspidiotus on either cherry, peach or an almond tree. The cause of this exemption may not be owing to the presence of the acarina, but it is strongly suggestive. Next season I propose to cultivate the crop on apple and pear trees in order to determine the true relation which they hold to other insects.

It is still an unsolved problem how to deal with our apple and pear trees; I have been prying into the experience of writers and gardeners, without deriving any substantial results. After numerous experiments I am induced to believe the most effective treatment for the scale insect, is a solution of caustic potash. Four ounces of water to one of potash, will kill the animals and the tree also. Sixteen ounces of water to an ounce of potash may be applied without injury to tender bark or buds. The entire tree may be washed over with a whitewash or paint brush. One of my neighbors extolled the use of tobacco juice, as a certain poison. As he used tobacco largely in his own system, he could speak advisedly of its toxical properties; and I shall hereafter adopt the combination in full faith that should the reduced strength of the potassa liquor fail to kill the insect, the narcotic combination will surely settle the question.

This mixture is also the best which I have found to kill aphides. These animals have a film of resinous matter over their hide, which

Fig. V.

prevents a liquid, not alkaline, from coming in close contact with their absorbant surface. Whale oil soap water is much used for the same purpose, and probably with good results. Under no conditions, however, will the result be satisfactory, unless the applications are applied often enough to destroy the last animal or egg that may be living on the tree. The proper time to do this work is during early autumn, soon as the leaves fall, or before. Every trunk, branch, twig and bud should be carefully washed with the liquid. True, the process involves considerable outlay of time and some little money. But how much did your trees cost you in the first case; how much money and labor have you bestowed upon them already? How many years have you been waiting for them to bear fruit? And will you now let them die for lack of two hours culture over each tree and five cents' worth of potassa? Try the experiment on one tree, and if the foregoing plan will not clean off every particle of moss and kill every insect, and insure a good, healthy, productive tree, instead of that diseased runt which can hardly hold on to life on account of its one hundred thousand parasites, then bring your bill of expenses into the Farmers' Club, and I will pay it for you.

One more remark will conclude my paper. There are some nurserymen within a thousand miles of this locality, who sell from one to five hundred insects with every tree that leaves their premises. This is especially true in respects to plants and shrubbery raised under glass. Every horticulturist and amateur gardener should avoid such establishments as he would a pest house. No young tree nor shrub should ever be transplanted to your garden without being closely inspected and thoroughly cleansed of all insect life. Care and watchfulness will protect your fruit trees and gardens, as perfectly as it will keep vermin and itch from your children.

It will be observed that the cuts illustrating the above lecture are larger than life size.

Fly Paper.—Boil together equal parts, by weight, of glue and molasses, spread it over common brown paper, with a brush, while hot. Place a sheet of paper in every room in your house. It will capture every fly in the room within a day. The paper can be thrown in the fire and a new one used, when covered with captured flies. So says an exchange.

Wit does not take the place of knowledge.

Virginia and Truckee Railroad.

The cave which occurred in the American Flat tunnel on the Virginia and Truckee Railroad, had a very serious temporary effect on the mines of Virginia, and the Gold Hill *News* estimates the damage not less than $1,000,000. The road has regulated the price of wood, lumber, etc., and reduced prices to a reasonable figure, so its stoppage has caused considerable trouble.

The following extract from the report for 1872 of George W. Chedic, Assessor of Ormsby county, through which a good portion of the road runs, will be read with interest, as giving some idea of the importance and business of this road, as well as of the mining, milling and other interests and resources of the country in connection therewith. This report is published in the Carson *Register* of the 27th instant.

The Virginia and Truckee Railroad is now completed from Virginia City via. Carson City to Reno in Washoe county, connecting at that point with the Central Pacific Railroad, and is now proving of great advantage and convenience to the citizens of this portion of the State. This road is fifty-one (51) miles in length, over which 22 trains run daily, and transporting about 200 tons of merchandise per day, besides carrying about 600 tons of quartz from the mines in Storey county to the various mills located on Carson river, daily. There is annually transported over this road about 110 thousand cords of wood and about 20 million feet of lumber, taken principally from Ormsby and Douglas counties to Storey county.

The railroad company have now in use eleven (11) locomotives, and will add from 3 to 5 more first-class engines to this number by the 1st of January next—the car capacity of the road being about 160 cars, embracing all kinds.

There are now within the borders of the county about 17 miles in length of track belonging to this road.

The various wood and lumber flumes are engaged to their utmost capacity, while the mills for manufacturing and preparing lumber for the market are in constant employment.

The quartz crushing mills in this county are located on the Carson river, at and near Empire City, in the eastern portion of the county.

The Mexican mill, located at Empire City, is worked by water power, superintended by D. B. Lyman, has 44 stamps, 20 pans and 10 settlers, and works 120 tons of ore in 24 hours; is now at work on Crown Point rock, with an average yield of $45 per ton.

The Yellow Jacket mill, located at Empire City, is worked by steam power and superintended by John Hanson; its capacity is 40 stamps, but only 25 are in use, with 13 pans, 6 settlers, and crushes 75 tons of Crown Point rock per day, with the average yield of $45 per ton.

The Brunswick mill, worked by water power, is located on the Carson river, about two miles below Empire City, under the superintendence of M. R. Elstner. Its capacity is 53 stamps, 26 pans, 13 settlers, and 4 agitators; crushes 150 tons of Crown Point rock daily, which yields $45 per ton.

The Merrimac mill, worked by water power, has 20 stamps, 13 pans, and 6 settlers, with capacity to work 45 tons of ore per day; has been working on slum and tailings for some months past, under the superintendence of Frank McCollough.

The Vivian mill, propelled by water power, under the superintendence of D. H. Brown; has 16 stamps, 8 pans and 7 settlers, capable of crushing 40 tons of ore per day; not at work at the present time.

The Santiago mill, worked by water power, under the superintendence of D. C. McKay, has 34 stamps, 9 settlers and 18 pans, and works 80 tons per day, on Belcher ore, with an average yield of $36 per ton.

Monster Beehives.

A correspondent of the *Commercial Herald* gives the following description of a monster beehive on the eastern slope of the San Fernando range, Los Angeles county, Cal.:

The hive is located in a rift, which penetrates the rock to the depth of, probably, one hundred and sixty feet. The orifice is thirty feet long and seventeen feet wide; four passages. This rift was discovered to be the abiding place of a swarm of bees, that is represented as coming out in a nearly solid column, one foot in diameter. Certain parties have endeavored to descend to the store of honey collected by these bees, but were invariably driven back, and one man lost his life in the effort. Others have, at the expense of much labor and money, built a scaffold one hundred and twenty-five feet high, in the hope of reaching a place whence they could run a drift into the rock, and extract its well hoarded sweets, but finally ceased their work. Within four years the bees have added not less than fifteen feet to their treasure, as ascertained by actual measurement, and it is thought that at the present time there can be no less than eight or ten tons of honey in the rock. A man named B. Brophy, who lives in a cabin not far from the spot, obtains from the melting of the honey by the sun's heat, more than enough for his family requirements.

He hath riches sufficient who hath enough to be charitable.

Useful Information.

The New York Underground Railroad.

The delay in undertaking the construction of the underground railway, for which Mr. Vanderbilt obtained a charter last winter, is attributed to the difficulty experienced by the projectors of the enterprise in obtaining right of way at 56th street. At this point the underground road will unite with the Harlem road, which, according to the plans that have been adopted for improving its present condition, will be several feet above the street level. To this the property holders in the neighborhood object, and insist that not only shall the tracks be sunk below the level of the street, but also the depot which is to be erected at this point for the temporary terminus. Until these demands are complied with, the owners refuse to part with their property, as they hold that the present arrangements will endanger the lives of the citizens. Negotiations are now making to obtain control of this property, and, if there are a few changes made in the original design, they are likely to be successful.

Difficulties have also arisen in regard to some property required in the vicinity of the Five Points. Here, however, the trouble is a question of price; but commissioners will be appointed to appraise the property in question, and their decision will, of course, be final.

It is expected that nearly 3 years will be required to complete the road, and when the difficulties to be overcome are taken into consideration, the time is by no means too long. Between 13th and 18th streets, the road must be tunnelled through solid rock, and when the present tunnel through Murray Hill is reached, the entire flooring must be undermined, for the underground road will pass directly under it. The new road will be on an average 3 feet below the surface of the streets; the tracks will be 19 feet below, and the arched covering will be 2 feet in thickness throughout. This will give the interior of the tunnel a hight of 14 feet.

The terminus of this new road, coming as it does within but a few feet of the new Post Office, it has been suggested that the tunnel be continued into the basement of that building. This plan has been regarded favorably by the government architect, and the foundations on the north side of the building have been constructed in accordance with it, so that at any time the connection can be made. By this plan, all mails arriving over the Hudson River, New York Central, or Albany roads can be sent direct to the Post Office by steam, and thus avoid the innumerable delays that now occur in the delivery of the mails to the wagons, and their subsequent driving through the city. If this arrangement is made, these mails can be delivered very much earlier, and the departing mails can be kept open later than at present.

Pure Iron.—It is a remarkable fact that pure iron is an article unknown. What is called iron is a mettle combined or associated with other elements, which, though present only in small quantity, may, according to their number and proportion, communicate to it widely different properties—it being a simple variation in the proportion of carbon, say within the limit of about five per cent., which causes the metal to appear in the three well known states of wrought iron, steel, and cast iron, and just as the proportion of carbon increases the metal passes insensibly through these successive stages. One part in a thousand of any one of these elements will produce a decided effect on the quality of the iron, either separately or combined; hence the endless diversity in quality of the iron, steel, and pig iron met with in commerce. So far as our knowledge extends, iron is the only metal which is capable of thus acquiring such varied and useful properties by the operation of such simple and apparently trivial causes.

Curiosities of Motion.—Is any change produced on a man by a change in the velocity of his motion round the axis of the earth? If a dweller in latitude 60 degrees were suddenly to change his residence to the equator, he would double his velocity. At latitude 60 degrees he travels round with the earth at the rate of 500 miles an hour; at the equator, 1,000 miles an hour. Again, at latitude 72 degrees the Greenlander is lazily carried round 130 miles an hour; while the man at the North Pole calmly revolves once in 24 hours. Of course the motion is unfelt, because all things move together; but the change from the tropical to an arctic climate is so great that it may possibly produce physical or mental effects of which we are as yet unconscious. Of course the steering of a ship from north to south must be sensibly affected by the constant acceleration from west to east. On the long railways of Russia, too, it is said that the rails are uniformly more worn on one side than on the other, in consequence of this force.—*Boston Journal of Chemistry.*

In order to prevent the ebullition of boiling liquids a small fragment of sodium amalgam or of sodium tin, is added, when the solution is acid. The efficacy of these depends on the evolution of a small amount of hydrogen during the process.—*Dingler's Polytech. Journal.*

The brittleness of drawn wire may be obviated in a short time by subjecting it to a glowing heat or it loses this at the ordinary temperature within two to four months.—*Oesterreich Ztsch.*

Prevalence of Dust.

Dust is such a thorough Paul Pry, so intrusive, so all-pervading, that there is some foundation for Night Thought Young's hypothesis of a universe of dust, except that each particular atom does not dance, as he imagined, according to its own devices, but according to law. The air on the top of Mount Blanc contains dust; but the acme and concentration of dirt is the atmosphere of London, enveloped by which it is impossible for anybody to be quite clean, outside or in. Solar light, in passing through a dark room, reveals its track by illuminating the dust floating in the air; if there were no dust, no track would be visible. Professor Tyndall, who has a keen eye for the beautiful, says that on a day of transient shadows, there was something almost magical in the rise and dissolution of the luminous beams among the scaffolding poles of the Royal Albert Hall, in London.

Dust is the cause of the lovely color of the azure firmament. In fact, sky-blue may be produced by exceedingly minute particles of any kind of matter. To the same cause are to be ascribed the effects by which distance lends enchantment to the view. Professor Tyndall makes an artificial sky more perfect than a real one. In mountainous countries hills at no great distance are rendered almost invisible by haze. It will be understood that it is not the interposition of the haze as an opaque body that renders the mountains indistinct, but that it is the light of the haze which dims and bewilders the eye, and thus weakens the definition of the objects seen through it. Artists take notice of these phenomena under the name of aerial perspective. The haze varies with the temperature and humidity of the atmosphere. At certain times and places it is almost as blue as the sky itself, but to see its color the attention must be withdrawn from the mountains and from the trees which cover them. In point of fact, the haze is a piece of more or less perfect sky; it is produced in the same manner, and is subject to the same laws as the firmament itself. We live in the sky, not under it; and the "blue arch" turns out to be a greater delusion than was imagined.—*Ex.*

Insect Life in a Coal Pit.—Of late, the miners employed at Muiredge Coal Pit, a little to the north of Buckhaven, and on the Vemyss estate, have felt considerable annoyance in consequence of large-winged insects fluttering around the flames of their lamps and often extinguishing them. A miner, named William Semble, had his attention directed to several gimlet-like holes in the wooden props that support the workings, and, on closely examining the same, discovered live moth-like insects in the cavities. They are evidently foreigners. The wood of which the props were made came from abroad, and they have been in the pit for between three and four years. The insects are, in many cases, just emerging from their birth places into active life underground, and resemble wasps, but are not altogether like those in this country.—*English paper.*

A Solvent for Shellac.—Dr. I. Walz describes the following process for obtaining a neutral solution of shellac in water. The shellac is broken up and covered with a concentrated solution of carbonate of ammonia, and boiled upon the water bath until the ammoniacal smell has disappeared. More of the solution is added, and the boiling is continued until the shellac forms a coherent, sponge-like mass. The carbonate of ammonia is then expelled by further boiling, and the mass will readily dissolve by pouring boiling water upon it. A kind of soap will be found floating on the surface, which may readily be removed by straining. The solution, brought on paper, cloth, etc., dries rapidly, and leaves a thin, lustrous and adherent film of shellac behind.

Experiments in Exploding Dynamite.—Certain experiments recently conducted with dynamite, in France, lead to the conclusion that the condition under which this explosive is employed exercises a most important effect upon its value as an explosive agent in engineering. These experiments indicated that when the match entered deeply into the cartridge, the dynamite simply burned without explosion. It was further observed that when the match but slightly entered the cartridge, the explosion was in all respects satisfactory, and that nothing was left to be desired when the cartridge was primed with fulminating mercury.

Irradiation of Light.—It is a curious fact, that if the same letters of the same size precisely are painted on two boards, the one white on a black ground, and the other black on a white ground, that the white letters will appear larger, and be read at a greater distance than the black. This is owing to what is called the irradiation of light. It depends on this: That the impression made on the bottom of the eye by bright objects extends a little wider than the actual portion of the organ struck by the light, and, invading the space occupied by the darker objects, makes the brighter appear larger than they really are.

Sweet Fern for Tanning.—Thousands of acres of land in Michigan are covered with a growth of sweet fern, which has hitherto been supposed to be worthless, but it has been found that for tanning purposes it is unequalled, and that it yields forty per cent. extract, while hemlock yields but fourteen. It promises to be very valuable.

Good Health.

Locality and Cause of Ague and Fever.

Intermittent fever is known to prevail (except in sporadic cases) only is districts where there is a large amount of vegetable matter in a state of decomposition, and this occurs more especially in times of drouth. In dry seasons rotting wood and other vegetation, usually innocuous because under water, is exposed to the atmosphere, which it taints with the emanations of decay. We have no evidence that any amount of decaying vegetable matter on a dry soil, though it may be very unwholesome, is especially conducive to the intermittent form of fever. Moisture is an essential factor in the causes. But all swampy lands are more or less productive of this type of fever in dry seasons, and the prevalence of intermittents in their vicinities always corresponds with the quantity of decaying organic matter.

Another source of the disease not often thought of, and seldom alluded to in medical books is rotting wood and other decaying vegetable matter in the cellars and door-yards of houses which are situated in damp places. If wood, or any other decaying vegetable matter, and water are allowed to accumulate in the immediate vicinity of houses or stables, the water will become stagnant, and malarial gases will be generated, causing intermittent fever in the occupants of the houses, and a more obscure, though analogous affection in the domestic animals.

The malaria of swamps and other places is sometimes carried, mostly in a given direction, by the prevailing winds or breezes, so that persons residing a mile or two distant, and in high altitudes and salubrious localities, are more subject to intermittent fever than are those who reside in their immediate vicinity. It is, therefore, of much importance in the neighborhood of malarious places, or districts subject to this disease, to ascertain the prevailing atmospheric currents before constructing buildings, either for human beings or animals.

It may be an interesting question with many who are obliged to reside in malarious localities, at what hours of the day or night is the atmosphere best or worst? There can be no doubt, I think, that early and late in the day are the worst times to be exposed. From day-dawn until a little after sunrise (and still later in cloudy or damp weather), and from sunset until a little after dark, the air is damper, heavier and more loaded with malarial emanations, which the sunshine and heat of the day dissipate and destroy, and which the colder air of the night condenses and keeps down to the surface of the earth. Those who live near any source of pestilential miasma would do well, as a preventative measure, to avoid exposure as much as possible during the hours above indicated.

But it may be said that persons must breathe such air as surrounds them; that the malaria will pervade the indoor as well as the outdoor atmosphere; and that, therefore, nothing is gained by remaining within. The objection is well taken; but by keeping the air of the apartments occupied during the above hours warm and dry with a brisk fire (even though the time be July or August and the thermometer at fever heat), the objection will be obviated.

Treatment.

The main point and the universal rule in medicating all cases is: to keep the temperature and circulation as nearly balanced as possible during all stages of the paroxysm. On the first appearance of the symptoms of the cold stage, the patient should have hot fomentations applied to the abdomen, bottles of warm water or something equivalent to the sides and armpits, and warm applications to the feet. By these means the duration of the cold stage will be lessened, the severity of the hot stage diminished, and the entire paroxysm abbreviated and rendered milder.—*Phrenological Journal.*

An Effect of Chloroform.—A singular effect which chloroform has upon some persons is its dulling the brain and destroying the intellectual faculties for months after it has been taken, and after physical health has been restored. One gentleman of active mind, a ready thinker and fluent writer, might be named who has been under the influence of chloroform three or four times for surgical purposes, and each time his intellect has been torpid for months, though his surgical recovery was rapid. *Scientific American.*

A Remedy for Dysentery.—The following simple remedy has been known to cure the most obstinate and malignant forms of dysentery, when all the ordinary methods were ineffectual. Take hot water, one-fourth of a pint; vinegar, half pint; mix; then continue to add common salt as long as it will be dissolved, stirring and irritating it freely and frequently.

More men grow old from having nothing to do, than from over-work. The running machine will keep bright for years—the idle machine will soon rust out.

Quack Doctors.

From every section of the country we are constantly receiving intelligence of the most foul murders having been committed by men calling themselves doctors. There is nothing about which the great mass of the people are so ignorant as the human system, and the means necessary to preserve it in a state of health, or relieve it from disease.

Knowing this, unprincipled men, and women too, who have become so depraved and dead to the instincts of humanity that they are willing to jeopardize the lives of fellow-beings that they may obtain money, put forth their signs as doctors, flood the country with circulars and advertisements filled with accounts of their unprecedented skill, and the work of death commences. A considerable portion of the people have educated themselves that everything they see in print is true. They read these quack advertisements, which are gotten up to order by uninterested parties (for be it known that quacks, as a rule, cannot write) and are at once struck dumb with astonishment to think that such wonderful physicians have by chance been thrown within their reach. They rush to these quacks by the thousand, and are assured that their cases, though very critical, can be cured only by careful treatment by them. The prices charged are fabulous, and the poor victims rob their families of the necessaries of life, and mortgage their property to raise money to pay the impostors. In most cases they are given harmless compounds, and are fed on hope until their money is exhausted; then they are turned away—kicked into the streets, with the information that their cases are beyond remedy. The more adventurous charlatans experiment with strong drugs, and knowing nothing of their effects upon the human body, accidental deaths are frequently the result. Numerous instances have occurred where good-paying patients, after being copiously bled of their finances, have suddenly gone to their long home.—*Ex.*

How the English Bring up Children.

The English bring up their children very differently from the manner in which we bring up ours. They have an abundance of outdoor air every day when it is possible. The nursery maids are expected to take all the children out airing every day, even the infants. This custom is becoming more prevalent in this country, and should be pursued wherever it is practicable. Infants should be early accustomed to the open air. We confine them too much and heat them too much for a vigorous growth. One of the finest features of the London parks is said to be crowds of nursery maids with their groups of healthy children. It is so with the promenades of our large cities to a great extent, but is less common in our country towns than it should be.

In consequence of their training, English girls acquire the habit of walking that accompanies them through life, and gives them a healthier middle life than our women enjoy. They are not fatigued with a walk of five miles, and are not ashamed to wear, when walking, thick soled shoes, fitted for the dampness they must encounter. Half of the consumptive feebleness of our girls result from the thin shoes they wear, and the cold feet they must necessarily have. English children especially girls, are kept in the nursery and excluded from fashionable society and all the frivolities of dress, at the age when our girls are in the heat of flirtation and are thinking of nothing but fashionable life.—*Ohio Farmer.*

Remedial Mud.—"Grace Greenwood" has been astonishing the people "down East" by the accounts of the mud-baths which she has seen or heard of during her late travels on the Pacific coast. Mud-bathe are said to be a popular remedy with certain uncivilized copper-colored savages. The barbarous beings, when sick are said to burrow in the mud, very much as certain nameless scavenger quadrupeds do in civilized countries, of a hot day, whenever they can find a puddle large enough. Some of our contemporaries seem to think that a prescription that is good for pigs is for that very reason bad for humans. But we beg leave to differ. A cleansing, or cooling, or other remedial process may be equally applicable whether the patient be hog or the "higher animal." At first thought there may be something vividly suggestive of dirtiness in the idea of mud-bathing. But we are prepared to show that mudopathy is just the cleanest treatment in existence. The reader is respectfully requested not to confound the idea of mud-medication with mud-spattering. No one would like to have mud thrown into his face nor on his clothes; and he would resent a similar application of water. Yet, instrinsically, nothing is cleaner than earth, nothing purer than water; and the admixture of the two constitutes mud.—*Science of Health,*

Buttermilk is an aid to the digestion of any food taken with it; and by many hygienists is regarded as an excellent substitute for fruit in Winter, and a prevention of Spring sickness. It is especially recommended to invalids who suffer from indigestion—drink it at meal times,

MINING AND SCIENTIFIC PRESS.

W. B. EWER.....SENIOR EDITOR

DEWEY & CO., Publishers.

A. T. DEWEY, GEO. H. STRONG.
W. B. EWER, JNO. L. BOONE.

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One inch	2.00	5.00	14.00	38.00

Large advertisements at favorable rates. Special or reading notices, legal advertisements, notices appearing in extraordinary type or in particular parts of the paper, inserted at special rates.

San Francisco:

Saturday Morning, Nov 16, 1872.

Gold and Legal Tender Ratee.

SAN FRANCISCO, Thursday, Nov. 14th, 1872.—Legal Tenders buying, 88; selling, 88⅛. Gold in New York to-day, 113¾.

Table of Contents.

EDITORIALS.—The Great Fire in Boston; Life Assurance Forfeitures; Vienna Exposition; Cleaning of Iron-Amalgam. 305. The Raymond & Ely Mining Suit; Our Home Industries, 312. Representative to the World's Fair, 313. The Diamond Fields, 316.

ILLUSTRATIONS.—An Improved Self-Coupler for Cars, 305. Scale Insects. 310. Peteler Portable Railroad, 313.

MINING SUMMARY from various counties in California, Nevada, Arizona, Colorado, Idaho, Montana, and Utah; Mining Shareholders' Directory, 308-9. Market Reports, 316.

MECHANICAL PROGRESS.—Carriage Wheels—Where is the Weak Point; Selenitic Mortar; Staining Veneers, 307.

SCIENTIFIC PROGRESS.—An Important Nautical Invention; Cannon Powder; Cement Mixtures for Steel; Ethnology in Hair; Future Eclipses of the Sun; Interesting to Iron Builders, 307.

USEFUL INFORMATION.—The New York Underground Railroad; Pure Iron; Curiosities of Motion; Prevalence of Dust; Insect Life in a Coal Pit; A Solvent for Shellac; Experiments in Exploding Dynamite; Irradiation of Light; Sweet Fern for Tanning, 311.

GOOD HEALTH.—Locality and Cause of Ague and Fever; An Effect of Chloroform; A Remedy for Dysentery; Quack Doctors; How the English Bring up Children; Remedial Mud, 311.

MISCELLANEOUS.—Pre-historic Remains in the Aleutian Islands; Richmond Consolidated Mining Company (Limited); The New Atlantic Cable; Butte County Mines; The Yuba Gravel Mining Company, 306. Virginia and Truckee Railroad: Monster Beehives, 310. Ely District and Its Mines; Clark Mining District, 314. California State Fair Awards. 316.

MECHANICS' INSTITUTE.—It is announced that the popular lecturss decided npon hy ths Board of Regents and the Mechanics' Instituts, ths programme of which we published recsntly, will bs hsld on Saturday svenings during the wintsr. A small fee will be charged—$1 for fourtesn lectures or ahout seven cents psr lsctnrs—to dsfray sxpenses. These lectures have prsviously proved very satisfactory and linstructive and, with the very comprehensive programme proposed, will probahly be even better than formerly.

PROFESSOR TYNDALL.—A subscribsr signing himeslf G. L. P., requeets ne to call the attention of the Mechenics' Institute to the propriety of ohtaining the presence of Professor Tyndall on this coast. We are happy to say that ths Institute has forestalled our correspondent, for by order of the Board of Truetece President Hellidie hae placed himself in communicetion with Professor Tyndall in order to secure from him a series of lectures in this city. It is to he hoped that the Inetitute will hold out sufficisnt inducement to the gentleman to visit Sen Francisco, for ws are eure that eftsr ths appreciative reception of Profeesor Agaesiz, any other light of the scientific world will be heartily welcomed and attentively listsned to.

TIN.—A rumor is prevalent in ths city that rich deposits of tin have been discovered near hers. The discovery of tin ore anywhere on this Coaet, in peying quentities, would be of the greatest importaancs, hut we fear the newe is too good to be true. Nothing definite ie known as yet, hnt we have heerd of so many bogue tin diecoveries that ws are inclined to he skeptical nntil good proofe are shown.

GOVERNOR BOOTH hae appointed Thnrsday, ths 28th of Novembsr, ae a day of Thanksgiving for California—the same day which had been previously fixed upon hy Prseident Grant as the day of National Thanksgiving.

ON FILE.—Letter from C. F. J., from Tintic Dietrict, Utah; also letter from Pioche.

The Raymond & Ely Mining Suit.

Ths Raymond & Ely mine is in troubls. Let auy mins hecoms a prosperous one, and it is surs to get into soms kind of litigation. We seldom heer of eny trouble ahont third rate mining property, but just as soon as a mine proves its worth and hecomes a representetive of its district then is the tims for soms one to step in with some claim upon it, which would otherwiss havs never besn thought of. This particular suit will, liks others before it, he decided hy the Courts, which of course have a hetter opportunity of judging of ths msrits of ths case than any one outsids has. Moreover, we know nothing of ths claims further than what the affidavits averr still it ssems very provoking that ths only mins of prominence of all the great number called at ths Stock Board which has paid any dividend for the pest thres monhts, should be even temporerily deterred from so doing this month, hy an injunction from the Court. More or lsss litigation, however, was expected to spring out of the stete of things in Ely District sincs it is infested with "soldier titles," and a good deal of property is in dispute. Mr. Raymond, United States Commissioner, who recsntly peid a visit to this district, says that he is sure there is not a mining company there, concerning which he has not heen wisely assured hy some knowing outsider thet, "in reality, sir, thsy don't own a foot of their own ground." This is surely a dsplorabls state of effairs, but it is nevertheless hettsr for such mines as have auy hopes of heing first-class ones to settle their difficulties hefore the value is enhanced hy increased bullion product.

This suit involves a large amount of property, the cleim heing for upwards of $1,500,000. As steted in a former issue, C. F. McDermott instituted suit against ths Company, alleging that he was a tenant in common with ths defsndant, and owned 800 feet undivided of 1350 feet of the Panaca lode, on Ely Miuing District. He further allegsd thet ths Company had excluded him, and misappropriated the proceeds of the mins, sxceeding the sum of $1,500,000. This has now almost reached ths sum of $2,000,000. The suit has been going on for soms time, hut as is usuel iu preliminery legel procsedings, attracted but little attention until it assumed its prssent phase. A few weeks sincs the demurrer to ths complaint was argued, ths defendaut demurring to ths complaint on the ground thet one tenant in common could not hring his bill for accounting in equity, and that the Court had no jurisdiction, the ground heing in the State of Nsvade.

Befors this argument wes concluded the Compeny declared its nsual dividend of $7 per share, amounting in all to $210,000, which was to have been paid on the 11th inst. Bsfore this emount could be disbursed ths plaintiff procured en order from the Judgs, which was served on the Presidsnt of the Company requiring the Compeny to show cause why an injunction should not be served, restraining them from paying ths dividend announced, or any dividsnd at all, while the suit was pending. The payment of the dividend was therefore postponed until the demurrer was argusd. After this was done the case was submitted, and on the 13th, Judge McKinstry sustained the demurrer end dissolved the restraining order; so the dividend hes been paid.

The hasis of McDermott'e claim to a shere of the proceeds may hs seen by the following:

Whsn Piochs, or Ely District, was diecovsred, the discovery, or Williem Hamhlin claim, of 200 fset on the ledgs was the first one located. Next on the west ceme the claim of —— Pulsifer, end then in proper order those of Thomes Box, Thomas M. Box, Stephen Sherwood, J. N. Vandermark, and S. S. Shutt, sach 200 feet, except Pulsifer's, which was 150 fest, making in all 1,350 feet. In July, 1864, these men agreed to consolidate their claims in ons company, each to hold an undivided interest. In this agreement they were each to have en equal proportion of the proceede of ore from any or all cleims; hut at the seme time each hed power to dispose of hie own proportion of the ground, as he saw fit, without the consent of others. Thie agreement was signed and recorded. About two yeare since, Raymond and others hought the William Hamhlin claim, organized the Raymoud & Ely Company, which afterwards hought the Pulsifer claim, next adjoining, and worked it as their property. Both locations proved very rich, as the large and eteady dividends of the company show. Three of the other owners meanwhile hsld on to their claims, and recsntly sold out to McDermott, who, undsr ths terms of the ahovs-mentionsd agresmeut, desires a shars of the profits of ths Reymond & Ely Company. Hs claims thet in purchasing the Pulsifer ground ths company did not buy the whole, hut only ninety thirteen hundred and fiftieths, and ths rest is ths property of ths original consolidation. As McDermott has purchased the rights of ths other claimants and whatevsr portions of ths Hemhlin and Pulsifsr trects the original ownsrs may cleim, he claims 800 feet of 1,350.

On sustaining ths dsmurrsr and dissolving the order rsstraining the payment of the dividend hy the company on Tuesdey, Judge McKinstry decided that the poiut teken by the defendants as to ths jurisdiction of the Court was well taken. This point was that one tenent in common could not hring hie bill for accounting in equity, end that ths Court hed no jurisdiction, the ground being in Nevade.

The Judge said thet the plaintiff sst up in his original hill that he was a tenant in common with the Raymond & Ely mine, but that the latter held adverse possession—*i. e.*, would not let ths plaintiff enter his possssion of that portion of ths property which he cleims as his. Suhsequently he loses sight of his latter position, and says that he is an acknowledged tenant in common and is only suing for a division of the profits, of which his portion has heen legally withheld. This creatss an inconsistency in the record. If ths latter position wers true, ths cess would bs a proper ons to bring hefore the court; hut as ths tenantcy in common is denied it hecomes necsssary to make proof of ths fact, and that can only be dons in a Court having jurisdiction, *i. e.*, a Court in ths State of Nevada. The proper courss to pursus is to hring an actiou for sjectment in Neveda.

It is uuderstood that ths plaiutiff will push the suit and prohably a suit in ejectment will he commenced in Nevada to ohtain possessiou of thet part of the mins which is alleged to bs owned by him.

Our Home Industries—The Foundries.

Ths city foundries have had their hends full of work for the pest few months, but business is now beginning to slack np a little on eccount of the approech of winter. The high price of iron has somewhet affected their work, hut pig iron has come down considerably of lete and made it easier. Rolled and har iron is, however, very high and retards business metsrially since consumsrs will mske their mechinery, etc., last as long as possible to avoid purchesing at high rates, when if they wers rsesonahle, more repairs and new machinsry would be ordered. Ths foundrymsn all appear to he in good spirits over the rssult of ths season's businsss aud thers is plenty of work in the shops to keep thsm husy for some tims. The past eix monthe has heen the most proeperous for a numher of years, end although business has not decreased mnch as yet, it looks as if it would. At the

Risdon Iron and Locomolive Works

A largs force of men is employed and everything looke prosperoue. These worke have the contrect for the building of two veseels and engines, the result of which will he importent to our coast. One of them ie a eteemer for the transportation of coal from Orsgon—500 tons burden; engiue 34x30, with all modern improvements. The other ie a steamer for the Revenus eervice, of 235 tons; engine 34x34. One of these vessels is heing huilt to tsst the qusstion whethsr coal can he transported by steem cheaper then hy sail. It is probahle that if the experiment is successful other vessels will hs huilt for the eame purpoee and kept running on ths coast. The veesel heing huilt for the Revenue ssrvice is to solve the question whether California mechanics and California meterial and lumher will meke ae good a ehip as can he huilt in the East. The carpenter work is being done by Dickie Bros., but the Risdon Iron Worke heve the contrect for ths whole joh and we are glad that ths work ie in such ahle hands.

At thie foundry they are also refittiug the steamer "Prince Alfred" and putting in a new surfacs condenser of the most approved etyle and putting a new surfacs condenser, for fresh water alone, into the steamer "Buhne," giving her a general overhauling. Thie firm has just completed five of the heavieet hoisting engines on the Comstock lode, and also two on the Sutro tunnsl—capeble of hoisting from a depth of 2,000 fest. Thsre has just heen shipped a 30-stemp quartz mill for the Sierra Butte mine, driven by a new kind of tangentiel turbins wheel made after the first ons huilt six months ago, which on au extended trial hes proved so very satisfactory as to warrant them in adopting this style of wheel in preferencs to any other. Another tangential turhine wheel is also heing huilt here for ths Originel Amedor mill. One hoisting engins 12x24 for the Ivanhos, ons for the Phœnix, one for the Eris and ons for ths Original Amador mine. A lerge and complete quartz mill, for the Floral Mill at Pioche; also, 25 cars for ths Central Nsvada Railroad. A very hsavy pumping engins is bsing mads for ths Imperial mine, Washoe, capahls of pumping from a depth of 3,000 feet. The hed plats of this engine alone weighs 1,800 pounds, and the two geers for pumping will weigh 1,800 eech. Two incline cages, made on a new principle of adjustahle bottom, ers being constructed for ths Ideho mine, Grass Vallsy. These ars some of ths mein jobs on hand, but they ere meny other smeller ones of the sams class. The Risdon Iron and Locomotive Works have due a number of the largest class tools mads, and are fitting up to mest the ordsrs for the largest class of machinery likely to be ordered.

At the Miners' Foundry

They are building a 20-stemp mill to go to Celeveras Connty. They are also putting up three of Paul's Amalgamating Mills to work hy the Paul process, one of which goes to Austrelia, oue to Uteh, end ons to Nevede. There are three of these mills now in operetion on this coast. They havs just finished thrse Goodwin & West pumps, the one which received a gold medal at ths last Stets Fair. Thess are ell intsnded for deep mining purposes, ons for ths Crescent City mine, Plumas county, ous for the Vallsy Mining Company, Nepa county, and the other to Virginia City for the Crown Point mill. We notice that they are making a small sizs of this pump for household and farming purposes. Thsy are constructing at this foundry some machinery to be used iu this city for ths manufacture of whits lead. Also making a tunneling machins for cutting tunnels seven feet in diameter, aud from that down. This mechins cuts a circls outside and a hole in the middle, iu which a blast is put. At this foundry, thsy, like all ths others, have heen running full for the pest six months.

The Etna Iron Works

Ars at work putting up a largs steam plow, Hyde's petent; huilding house front for Tallant's nsw hank building. They ers also arrenging steem machinery for plowing tule lands near Sherman Island. This is on the sams principls es that illustrated in the PRESS recently, sxcept that only one sngine is nsed on one side of ths field, and a clip pulley on the other, so thet ths plow is drawn hack and forth hetween them. They are constructing a numher of Varney pans, and mixing machinery for the Bay Sngar Refinery; also doing flour mill work for W. D. Tullock at Knight's Ferry. They ere building a White's furnace to go to Utah, the tenth put up at this foundry. They are making shafting and pulleys for ths Navy Yard, and doing the nsual amount of miecelleneous johbing.

The San Francisco Boiler Works

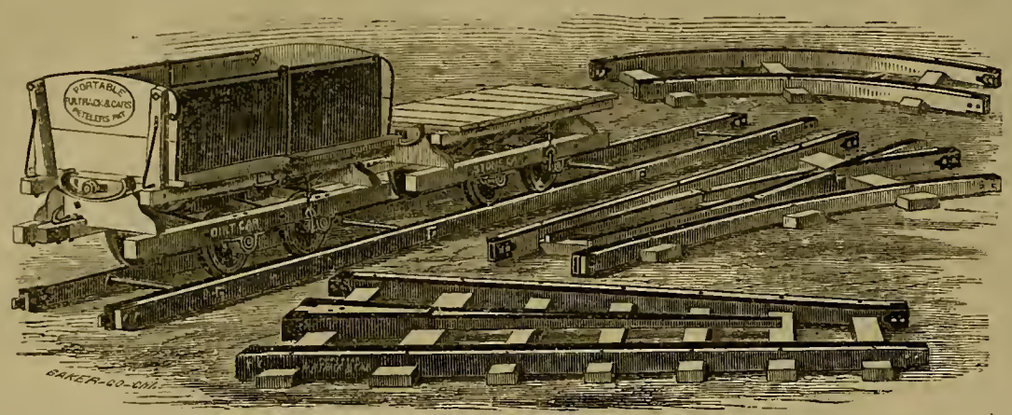
Are constructing two boilers for the Original Amador mine, 50x16, with all appurtenances, heater, stc; two boilers for the Erie mine, seme as above, and two for the Markley mine of a similer size; also meking two boilere of the eame sizs for the Black Bear mine, which is made in sections for convenience in shipment. A largs flus boiler, 60x26, is being made for T. Lemmen Myer & Co., to go to Mexico; two hoilers 48x16 for the Bellinghan Bey Coal Co.; two hoilere, 52x16 for the Bay View Distillery; and one hoiler for Huntington'e ehingls machine, 42x12, all complete.

A very large, low-pressure, marine boiler ie being conetructed for the eteemer Pelicau, which ie 13 feet in diameter of shell, 21 feet 6 in. in extreme length; diemeter of eteam chimney, 7 feet 2 inches; hight of steem chimney 7 feet 6 inches; containing three furnaces. Juet completed two hoilere for the Steam Plow Propelling Company. In addition, they are making 200 three-wheeled eugar wagone, 4 feet square hy 2 feet deep, for the eugar refinery; aud welding hoiler tubes for the Pacific mail Steamship Company and the North Pacific Transportation Company.

We will mention the work going on at the other foundries in next week's issue, our report being unusually long.

The Peteler Portable Railroad.

The illnstrations shown represent the manner in which the Peteler railroad is operated and its adaptibility for the work for which it is intended. It is more specially nsed for bnilding railroads, making excavations, filling low grades, for work in quarries, on farms, etc. In many localities in our mining regions it wonld he fonnd of great utility when large quantities of dirt are to bs removed. It can he used of course in all weather, and ia light and at the same time durable, and is so arranged that it can be operated without requiring any particular akill. It is generally estimated that it reqnires three drivers, three horses and three carts to movs one cnbic yard of earth, bnt admitting that two of each can do it, it will therefore take ten horses, tsn drivers and ten carts to movs five cubic yards of earth.



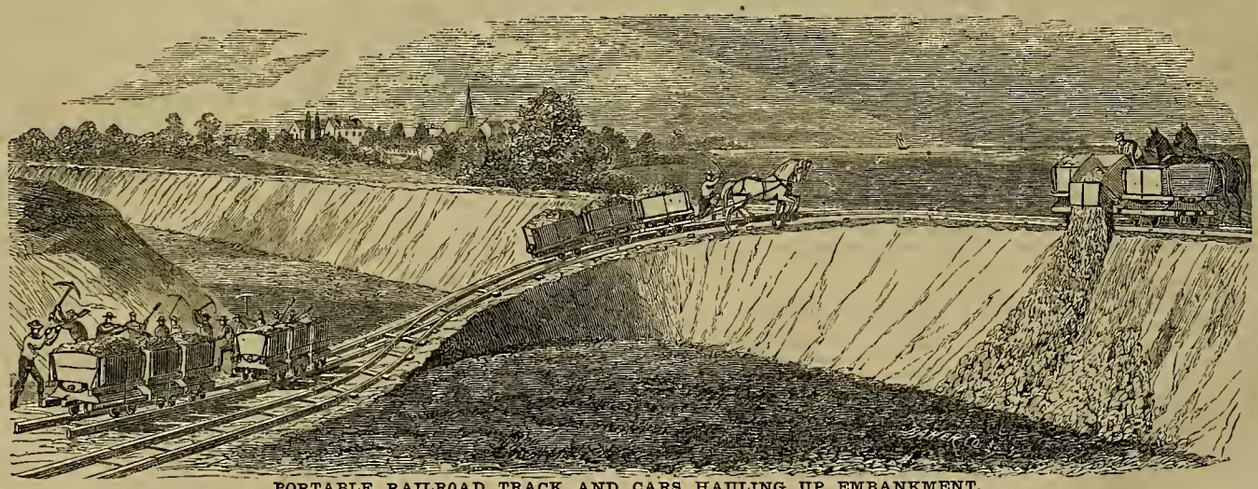
DIRT CAR. STONE CAR. SWITCH SECTIONS. CURVED SECTIONS.

Whils a No. 3 of the above portsbls track and cars, on a level grade, it is claimed one driver and one horss will move five, sometimes six cars, each containing a cnbic yard.

There are sixteen wheelbarrow loads of earth in a cubic yard, it therefore requires sixtesn msn with sixteen barrows to move it, or one man mnst go to and fro thirty-two times to do so. With a No. 1 half yard car and No. 1 track of this construction one man in one journey can move half a yard of sand or earth. The economy therefore in the saving of lahor, time and expense is evident. The main track is made up of twenty feet sections, each consisting of two parallel wooden rails hound together at proper distances by cross ties with a strong screw-tie bolt passing through each, and also with strong iron bolts to fit in the sockets secured on the end of the rails, snd all securely bonnd together. To the upper snrface of these wooden rails is rivited a strap of wrought iron, oval on its upper surfacs, on this the car wheels run. Short pieces, curves, cross roads, turn tables, etc,, are also provided.

GAUGE OF TRACK SIXTEEN TO THIRTY INCHES.

Ths rails are laid on the snrface of the ground, without sleepers, and with great rapidity. For short distances the cara can hs moved by hand. On a track one horse usnally hanls fivs cars. On down grades a horse is only necessary to hring the empty cars back. The track with all its appliances can bs easily transported in common wagons or railroad cars. To complete the road, curves, branch-roads, frogs and tnrn-tables are addsd, whereby the road can assume everywhere and at all times ths reqnired form and shape. For the purpose of transporting, various kinds of cars are used, of a form snited to ths different purposss for which they are employed, and being light and strong, they can be readily transported to any desired locality, and be ussd on stsep grades without difficnlty.



PORTABLE RAILROAD TRACK AND CARS HAULING UP EMBANKMENT.

The railroad conld, we think, be used to great sdvantage in onr monntsinous districts for many pnrposes, snd ahont mining property wonld bs extremely convenisnt. The csrs sre constructed with referencs to lightnsss, strength and fscility of handling and nnloading. Its sdvantages are not limited to transportation of material by man power, or as a snbstitute for wheelharrows. In hauling by horses, one horse csn be made to do the work accomplished by many, as will be seen from the fact that it requires about twenty times the power to drawa load on a gravel road that is required on a railroad. For further particulars those interestsd may andress the Peteler Portabls Railroad Co., 42 Broadway, New York,

American Flat Tunnel.—The workmen engaged in retimbering this tunnel, which was burned out a short time since, are making rapid progress and the work will be completed shortly. The accident to the tunnel has seriously interfered with work in the Comstock mines, cutting off supplies of timber and fnel, and numbers of miners wers discharged in consequence.

The Crown Point and Belcher dividends were passed again this month, contrary to expectation.

Future Course of American Trade.—To judge by the magnitnde of our imports and exports ws ars entering on a csreer of nnprecedented prosperity as a nation. Hitherto, though, our trads has lain chiefly in the direction of England and Frsnce. But ths immense development of our mannfactnres and industrial resonrces will change tho current of trado altogethsr. West of us we havs a continent waiting for our manufactures. There in the fntnre our trade mnst lie. But we must have an outlet for it, and to have it ths trads uniting the two countries must be secured hy a csnal which shall unite the Atlantic with the Pacific, and which shall bring the rsmotest part of our territory within two months of China and Japan.

Scientific Lectures.—Ths Sunday evening course of geological lectnres being delivered by Prof. Joseph Le Conte, of the State University, at Rev. L. Hamilton's Church, in Oakland, has been interrupted by the Professor's illness. We are pleased to learn, however, that he is convalescent, and has resumed his interesting and appropriate discourses.

The Sacramento and Vallejo railroad is being put in excellent condition hy snbstantial trestlings wherever the floods of last winter carried away the embankments.

Representative to the World's Fair at Vienna.

Guido Kustel, M. E., of San Francisco, well known as the author of ssversl of the latest snd best hooks pnblished in America on Mining snd Metallurgy, has been appointed by the Mechanics' Institute of this city, as Commissioner to the Vienna Fair, which opens in May next. Mr. Knstel is hoth a scientific and practical man, thoronghly interested in, and well acquainted with, the industries of this Coast. A native of Gslicia, in the Austrian Empire, Mr. Kustel has been for the past twenty years a resident of this Coast. His education, experience and observations, in this and other countries, together with his long and constant identification with California, render him eminently suited for this appointment, which we consider a pecnliarly fortnnate one. It is his intention to leave for Enrope early in the winter, snd we would urge thoss who are willing to frnish articlcs for exhihition to correspond at once with the Commissioner. Until further arrangements are made he can bs addrssed, care of this office. Packages for the Exhibition must he prepaid to this city. They will be forwarded from here and exhihited free. We urge npon onr inventors, miners and farmers, to do their best to make a good showing for California at this Exhibition, which is one worthy of mnch greater attention than it has yet received in the United States. We shall speak more fully of it hereafter.

Mineral Wealth in the Indian Country.—The scientific and exploring expedition which left Wssh-ington last May, under command of Colonel W. C. McCarty, of Texss, for the pnrpose of exploring Northwestern Texas, has retnrned, after a successful trip of five months in the Indian country. Copper ore has been fonnd in large qnantities of a very snperior qnality, having assayed as high as eighty-four per cent. of copper, the remainder being silver and other matter. The coal discovered is also of a snperior nality, resembling the best Pennsylvania anthracits. The Great Sonthern Pacific Railroad and the Pacific and Great Eastern Railroad pass through or near these banks. Colonel McCarty is now fitting ont a more extensivs expedition, to penetrate what is known ss ths "Llano Estacado" or "Staked Plains," and thence through the eastern mountain range of Northwestern Texas, and will leave New York about the 1st of Novemher.

San Diego Foundry.—Measures are on foot for the establishment of a foundry in the neighborhood of San Diego, and we understand that a portion of the machinery has already been shipped.

Ely District and Its Mines.

A *Bulletin* corrsspondent writee as follows from Pioche, Ely District, Nevada, under date of Oct. 31:

In no district west of the Rocky Mounteins has vein mining provsd more succeesful and gsnerally satisfactory than hsre—a fact that tends somswhat to relieve the businsss from tbe distrust with which it has come to be eo justly regarded. Few mines elsewbers have besn placsd so speedily and cheaply on a paying basis or afterwards been conductsd with euch economy and profit as the leading ones in this district. It is not yst quits three ysars sincs ths Meadow Valley, thsn the principal company hsre, commenced operations. Eight months were spent in a costly attempt at smelting the ores, for which purposs extensive works were erected on the ground, it being supposssd that they could hs successfully treated only by this mods of reduction. With greatsr depth attainsd in the mine, ths smslting orss gave place to others of a pnrer kind, requiring treatment by the mill process. About the middle of July, 1870, ths company completed a 20-stamp steam mill, but not for soms time after did this gst fairly at work, owing to causss of delay iucident to localities eo iealated and remote.

Up to the 1st of Angust, 1872, the income of ths company, including $210,000 raised from assssssmente, had amounted to $1,869,183, and their expsnditures to $1,657,910, of which $1,020,000 consisted of dividsnds paid etockholders—the nst profits realizsd by the latter during this tims having been $810,000. The Piochs, a much younger compauy, makes nsarly as good, and the Raymond & Ely a far better showing than this. To the latter must be accorded the merit of a specially good menegsment, this company having opsned and equippsd their mine from its own net procesds, no assssssmsnt svsr having been levied. Although tbsy had a 5-stamp mill up and running before the Msadow Valley Company, yet not much was accomplished prior to 1871, their bullion yield haviug been only about $400,000 previous to August 1st of that year. In ths precsding month of Jnne, very valuable discovsries wers made in thcir mins, whicb, from this time on, continusd to yield large quantities of high grads ore; ths total production to date having heen ovsr $4,500,000, of which more then onshalf has been clsar profit. The out turn for the currsnt year will reach about $3,500,000—the prospects of ths mins for continued and profitabls production bsing considsred better now than ever hsfors. Tbs aggregate yield of this district for the year will not bs less than $5,250,000, and may evsn excsed tbat sum, and it is safe to sey that a like amount of bullion has nsver besn sxtracted from any portion of the Nevada mines with so large a margin for profits. Ths total yisld of the Ely District, up to this time, amounts to a littls over $8,000,000—nsarly all of it extracted during ths past two years.

Troubles at the Outset.

At ths bsginning, some blundere leading to discomfiture and loss, were made hers as slsewhers. First, was ths mistake of attempting to smelt ths ores, whereby the Meedow Vallsy Company sunk some $60,000 bsfore discovering their error, or rather that only the upper stratum of their ores, to ths depth of 175 feet, was not adaptsd to reduction by this method. Ths Raymond & Ely proceeding on ths other band to mill their top orss, lost more than half ths silvsr they contained, owing to the pressnes of so much lead; 15,000 tons of this class, worked for them undsr contract with the owners of ths Mee Mill, having yielded up 43 per cent. of tbe silver it was known to carry.

Then, ths pioneers hsrs had to contend against the troubles arising from an entire waut of water in ths vicinity of the mines—from excessively high freights, owiug to ths long distancs suppliss hed to he hauled on wagons, and, against the so-callsd "Soldiers' titles," a description of claim, not, perhaps, very firmly grounded in justice, but which, having obtained judicial recognition, might bs, and in soms instancss was, used to harass the owners of good propertiee. Of that species of lawlessness, common in frontier communitiee, they had, of course, the usual amount to contend with.

The first of these difficultiee has been overcome through the construction of tbe Pioche Water Works, bringing water through wood and iron pipes from Big Cañon Springs, situate uine milee distant in the mountains. The supply for the present is ample, and furnished to the inhabitants of tbe town and to the mines and hoisting worke, where needed, at reasonable prices. Freights are still maintained at high figures, while the evils caused by conflicting titles and disorderly conduct are gradually diminishing.

Bogus Claims and Blackmail Operations.

The location of worthlees claims for the market, and frequent attempts at extortion under tbe pretence of adverse title must always be expected in a district like this; and when Commissioner Raymond, during his late visit to Pioche, steted that these casee were numerous here, he paid the minee a merited compliment while annonncing a well recognized fact. To the inexperiencsd the remark of ths Commissioner might eeem ungracions; but not such is the construction put upon it by the eagacious minsr. Bogus claime and black-mailing operations are not common where ths miues ars poor; hencs, to his mind, an absnes of thsse arguss a poverty of mineral wealth, and he will hs the last to resent a charge of this kind, preferred against the district in which hs is interssted. And yet these disreputable cases are not speciaily numsrous here, there haviug been but comparatively few attempts at downright fraud, while judicial procesdings have been almost wholly epared thoss infamies that disgraced alike the courte, ths bar, and litigants themssives, in the early days about Virginia. The suit of the Kentncky against the Raymond & Ely is generally looked upon here as an unjust procseding, and Mr. Raymond undoubtedly had tbat cass more especially in viswwhsn commenting on thie particular phase of affairs in Pioche.

The First Prospecting in these Parts

Was done by the soldiers stationed at Rush Valley near Great Salt Lake, in 1864, and although thssè men organized districts and made soms locatione, thsy performed but littls work upon thsm, being unable to remain, as is falleged, on acconnt of the hostility of the Indians. The Mormons wbo, about 1853, settled at Panaca, in Dry Valley, about ten milss from hsrc, had besn in the habit of working these miues, extracting and smelting ths surface orss for the lead they contained. Their object being to obtain metal for bullets, they made uo effort at ssparating the silver from ths lead, though it would look as if thsy wers awars of its presence, Panaca, the name of their sattlement, being said to signify silvsr in the Indian tongue. Thsss psople also had several small settlemeuts sxtenliug into Steptos vallsy, 140 miles north of this place; hut ths inhabitants, upon the boundary between Utah and Nevada being established, abandoned thsir homes and moved over the line on finding they were thrown into this State. Thosè of Panaca and places farther south, however, rsmained where thsy wers submitting to Gentils rule rather than give np thsir homss. Owning teams and cultivating the land, they constituts here a useful elsment, supplying the mining community with farm produce of various kinds and doing a greater part of the bauling. Beiug thns enabled to maks mouey out of their ungodly neighbors, tbsse saints have ceased to regard, as aforstims, the Gentils presencs as an umitigatsd evil.

Making Haste Slowly and Keeping Down Expenses.

Although not much work or even thorough prospecting was done in this vincinity until 1869, no district in Nevada has ever made such rapid and at ths same tims healthy progress as this. Others have built up towns more speedily and caused a greater amount of excitement, hut nowbere else have snch solid and judicious improvsmsnts bsen mads in so short a time as here, the growth of the principal towns and the srectiou of mills having kept even pace with work on the mines, and not as in many otbsr districts hsen grsatly in advance of ore developments.

Besides this steady and wholssome growth, and a compartive freedom from litigation and excitement, the proceeds of the orss sxtracted from ths minss here in the course of prospecting operations, have gone far towards defraying the cost of their plant and dsvelopment, the owners gensrally having been assessed vsry lightly, and in some cases not at all, to mest thsee expensee.

Mills and Hoisting Works.

Thsrs are now here nins mills, all nearly new, well-built aud appointed, and running on ths ores of the district. They ars located at or near Bullionville, in Dry Valley, twslvs milss distant, a little south of eaet from Piochs, tbis being the nsarest available point having a sufficient natural supply of water for milling purposee. These establishments consist of the Pioneer, five stamps, belonging to the Raymoud & Ely Company, and built in 1869. It has lately besn overhauled and put in a more efficient condition; the Meadow Valley, thirty stamps; two others belonging to the Raymond & Ely Company—ons of twenty and the otber of thirty stamps; ths Bowery and the Excelsior, each ten stamps, and the Ameican Flag and the Condor, each 15 stampe. Thsre are also hsre ssveral Stetsfeldt furnaces and smelting works. Ths value of the base bullion extracted duriug the current year is eetimated at about $130,000. The erection of several additional mills has been provided for, the machinery of some being on the way, the constructiou of still others at an early day being contemplated. It is the opinion of many here, that if the mines already opened continue to improve as tbey have done of late, and others develop according to expectation, that the present number of stamps will be doubled within the next eighteen or twenty months. About twenty steam-hoisting works have been erected on the mines in this neighborhood, and almost every week the machinery for others arrives on the ground. Tbese vary from 15 to 35-horse power, and like the mills, are mostly new and modeled after approved patterns.

The Vein System—Ores, Etc.

The main mineral belt, carrying the system of veins here, runs uearly southeast and northwest, it is abont two miles wide and 10 or 12 long, the town of Pioche being situated near the middle. Within this area the bnlk of the more extensively developed mines are located, although many claims have been taken up and some work done outside of it. Ths veins thsmselves mostly cut this belt diagonally, running nearly east and west, though some trend towards other points of the compaes. The vein matter is chiefly quartz, and the conntry rock quartzite. The lodes, though generally regular and well-walled, ars not massivs, varying from two or three to eight or ten, and, occasionally, 15 and 20 feet in thickness. They pitch mostly to ths south, at angles ranging from 45 to 80 dsgrees—the averags being about 60. As a general thing, they carry more or less ore from the surface, a good deal of lead being mixed with it to a depth of 150 or 175 feet, after which the ores bccome frser, and can be worked tolerably closs without roasting. Ths most of ths ore in the district is of good average and much of it of very high grade, turning out under the stamps from $100 to $200 per ton.

Towns, Population, Local Industries, Etc.

Pioche, is ths largest town in Eastern Nevada, and in point of population, ths fourth in ths State, and lies central to the priucipal mines here. It contains about 3,000 inhabitants, exclusive of the miuers ontsids its limits. The placs is named after the lats F. L. A. Pioche, of San Francisco, who helped to fit out ths first explorers, and was largely interested in the early locations made here. This term is often applied to ths district itself, the proper nams of wbich is the Ely, it having been called after John Ely, a pioneer in these parts, and ons of the owners of the Reymond & Ely miue. Ths town is well built up, contaiuing a uumbsr of largs fire-proof stores and other substantial buildings. It has a thrifty trade, is growiug steadily, and has a promising future befors it.

Bullionvills has about 500 inhabitants in aud around it. Its position as tbs great milling csnter of the district renders the origin of its name snfficiently obvious. It is also a prosperous town, and beiug the terminus of the narrow-gauge railroad now being built to counect it with ths mines, must soon grow into a place of importance. Panaca, lying one mile southeast of Bullionvills, is a hamlet of abont 300 inhabitants, nearly all of whom are eugaged in farming and kindred pusnits. There is a tract of fine arabls land about their settlement, much of which is devoted to raising vegetables and grain. These psopls also keep a good deal of stock, and snpply ths minsrs with fresh beef, butter, chesss and milk, which they gensrally furnish at fair prices. They are quiet, industrious aud frugal, and being so far removsd from tbs authoritiss at Salt Laks, are gradually falling into the ways of the hsatheu rouud about them.

Excessive Cost of Everything Here—Need for a Narrow-Gauge Railroad.

Good miners are in demand here at $4 psr day; mill-men, blacksmiths, teamsters and wood-cboppers can also get employment at good wages. The prices of nearly everything in this regiou are bigh owing to ths general barrsnuess of ths country and the cost of transportation. Ths necessity of a new narrow-gauge railroad connecting tbis placs with Salt Lake or some point on ths Csntral Pacific is greatly felt. If San Francisco sxpects to securs the trade of this section she shonld see to it that ths latter is speedily built. A more favorable routs than cxists for a road of this kind could not hs desired. Constructed from Humboldt Wells or Toano it would run all the way through a smooth, open valley, containing a great amount of good farming and grazing lands, and skirted on either hand with mountains abounding in water, timber and infinite storss of mineral wealtb. Nowhere in the world could a route of this length be found affording snch natural facilities for constructing a road or sucb abundance of resources to sustain it whsn built. Ths country being all the way nearly level and witbout rocks, trees or other obstructions, and almost without creeks or ravines, the road bed could bs prepared expeditiously and at littls cost. A road on this line would run through or vsry closs to the Silver Zone, Sprucs Mountain, Egan Cañon, Hunter, Sebell Creek, Robinson and many othsr important mining districts, any ons of which would almost warrant its being built. When such a road had rsacbsd tbis point it might advantagsously be continued on to ths Colorado, as the whols intervening country is rieb in minerals and will havs to procurs most of its lumber from points uorth of hers.

An Important Trade in Jeopardy—San Francisco's Opportunity.

But if San Francisco is to move in this matter it should be done at once. Already the Mormons are pusbing their narrow-gauge road rapidly south from Salt Lake. In another year it will have passed a point opposite to and less than a 100 miles distant from tbis place. That a branch will he thrown out from eome eligible poiut to Pioche may be expected. Being thus placed in railroad communication with Chicago and other Eastern cities, the business of this and adjacent districts must inevitably be diverted that way. Nothing can be clearer than this; and if the people of San Franciso intend to defeat tbat result, or hope to secure even a portion of a trade that must soon grow iuto enormous proportions, they should be up and doing—there is not a moment to be lost. Here is a railroad project on which all can be united, and in which even the Central Pacific Company would, no doubt, co-operate with the citizens of the metropolis in carrying to a speedy consummation. A nerrow-gauge track from the Central Pacific to Pioche should be the next thing in order on the railroed programme of California.

Clark Mining District.

A correspondent of the *Alta* writes ae follows concerning ths mines in this district:

The fact of railways soon penetrating our dessrt wilds will necessarily attract public attention to the vast mineral wealth that has for ages laid hidden in this long neglscted and almost unknown silvsr regiou. Ths large and continuons shipments of rich silver orcs for the last two years from this district to Sau Francisco has scarcely been noticed in our leading public journals. Even the exact locality of the Clark Mining District is quite unknown to ths outside world. This district is situated on ths State line of Nevada and California, half-way between Death Valley and Fort Mohave. The nearest points are: to Steamboat Landing, on the Colorado river, forty miles; to San Bernardino, two hundred miles. There is a good road and easy stages between water—the greatest distancs not to exceed twsnty-five miles—and plenty of stations with good accommodations and at resonable rates. The district is well watered; numerous springs furnisb an abundant supply of good water for all practical purposes. Ths climate is mild, with no sxtremes of heat or cold.

Timber.

An inexhaustible supply of cedar, fir, and nut pine, covers Clerk Mountain from base to summit, around wbose base the extraordinary rich ores ars extracted.

The Principal Mines

Worked at present are the Beatrice, Nos. 1, 2 and 3, and tbs Snowstorm, owned by McFarland Bros. They smploy six to fifteen miners. Within ths last year thsy have run over ons mile of tunnel on their mines. The entire expense hae been covered by selling tbe ore extractcd, in San Francisco.

Work on ths Lizzis Bullock mins, owned hy Hight & Chalfield, is vigorously pushed. They havs a tunnsl on this extraordinary vein of rich coucentrated ore, 240 feet, without showing a siugle fault or break in the lead. The main shaft is down 125 feet, and still sinking on ore that will sell in San Francisco for the silver alone, $1,500 per ton, to say nothing about the other valuable metals it is known to contain. Ths air shaft was sunk 93 feet without breaking either foot or hanging wall. What is most extraordinary in rsgard to this mius is the dsmonstrated fact of its being a true fissure vein, cuttiug the limestons formation at right angles without a break or fault, and also that the parties who owu it, both having been poor men, laboring undsr the disadvantages of a new country, have, by their indomitable will, not only opened their mins in a thorough aud workmanlike mannsr, hut actually realized a small fortune wbils doiug it.

About 100 tons of assorted ors has been shipped from this district, varying from $400 to $2,000 per ton, besidee abont 1,000 tons of milling ore on tbe dumps that will average $200 per ton in silvsr. Following ars a fsw extracts from returns of ore shipped by Hight & Chalfield and assayed by J., A. Mars: 30 sacks, $1,995 per ton; 24 sacks, $1,744.11, and 90 sacks, $1,127.54 per ton, marked (IxC).

Copper Ores

Are in great abundance. Tbs "Copper World" mine belonging to the Piute Company—perhaps the largest dsposit of copper in the world—assays from 60 to 85 per csnt. in copper; also nativs silver can be plainly seen with ths naked eys.

Rich Galena Ores

In large and well defined leads intsrlacs the whole district. Ths Umbahcet, Joeephus, Mohawk and Arizona owned by the Piute Company, ere large and promising mines, but for some reason ths Company has shown no disposition to develop them. The deepest shaft on any one of their minss will not excsed 30 feet. This Company operated in this district eight months.

Ths New Act Mins, owned by McCullongh & McIntyre, is a three-foot ledge on tbs surface. Ore smelted in a gaso of their own construction, yicldcd bullion worth $2,500 per ton.

Rich Lead Ores

In Cogoweep cañon. The principal mines are owned by Hight & Chalfield. Specimens taken from ths Chrysopolis and Sparkling Gem mines assay from $150 to $1,265 per ton in silver, aud 80 per cent. lead. Ths ors is very tractable and smelts readily in an open camp fire, tbe metal ssparating freely from the elag by this primitivs process. Thess energetic miners have establisbed a camp of twelvs or fiftesn men, and are now rapidly developing these rich mines.

In the early history of the district it was currently reported by interested parties that tbe rich ores were refractory. Subsequent working of the ore by the rudest process proves this to be utterly false. As proof of the tractability of tbe very richest ore, here is a circumstance: Mr. Holt was shot in the leg hy a renegade from Arizona; there wae no physician or surgical instrnments in the district, and to save the man's life the wound must be probed. Thomas McFarland, an ingenious miner, concluded he could make the desired instrument; he took some ore from one of his mines, smelted it in a blacksmith's forge, molded it into a bar and beat it into shape witb a wooden hammer, and probed the wound, all in the same day. The probe is eight and a half inches long, nice knob at the small end, and bends with the lightest touch. Now tbe question may be reasonably asked, How is it that there has been no reduction worke put up in the district? You have all the natural facilities for running such works, and the highest grade ores on the Pacific Coast.

Business Cards.

H. C. BENNETT,
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Reports and estimates made about all departments of Production, Commerce, and Manufacture, of the Pacific Coast. 5v24-tf

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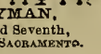
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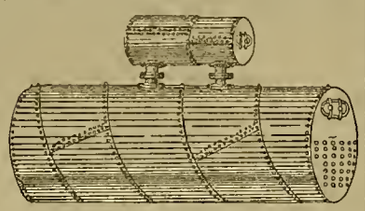
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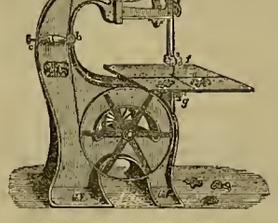
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21v24-eow6m

REMINGTON'S
BREECH-LOADING
Sporting, Hunting, and Target Rifles.
Same system as the "Remington" Celebrated Military Rifle, of which over half a million have been sold. Its simplicity unsurpassed. For strength and durability unequalled. In accuracy unrivalled. In range, penetration, and ease of manipulation, without comparison.
The "Sportsman's" Delight, the "Hunter's" Favorite, the "Target-Shooter's" Pride. Also
REVOLVERS FOR HOUSE USE.
In these days of thieves and Burglaries, every householder should have a revolver for home protection.
REMINGTON'S RIFLE CANE.
Every gentleman should have one for protection against dogs and rowdies, and for field use.
E. REMINGTON & SONS,
19v24-6m 193 Broadway, N. Y.

AVERILL'S
CHEMICAL PAINT,
Of any desired Shade or Color,
Mixed ready for application, and sold by the gallon.
It is Cheaper, Handsomer, more Durable and Elastic than the best of any other Paint.
Office, corner Fourth and Townsend streets, San Francisco. Send for sample card and price list.
15v23-3m HELY & JEWELL, Agents.

Varney's Patent Amalgamator.
These Machines Stand Unrivaled.
For rapidity pulverizing and amalgamating ores, they have no equal. No effort has been, or will be spared, to have them constructed in the most perfect manner and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.
They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.
This Amalgamator Opsrates as Follows.
The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the apperture and between the grinding surfaces.—Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.
Setlers made on the same principle excel all others They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.
Mill-men are invited to examine these pans and setlers for themselves, at the office, 229 Fremont Street, San Francisco

S. W. HOWLAND & CO.,
Crushers and Samplers of Ores,
No. 16 DRUMM STREET,
BETWEEN CALIFORNIA AND SACRAMENTO STREETS.
S. W. HOWLAND, the Pioneer Crusher and SAMPLER of Ores and Pulverizer of Mineral and Chemical substances, has returned to San Francisco and resumed business at the above, his original stand. He wishes it to be DISTINCTLY UNDERSTOOD that having several months ago dissolved partnership with Mr. Thurman at the Mission Street Mill, he has now NO CONNECTION WITH THAT ESTABLISHMENT whatever.
The Same Faithful Sampling
Formerly performed by him may be relied on, and such is guaranteed. oc1915p3m

Important to Miners and Mill Men.
Silvsr-Plated Copper Amalgamating Plates, for Saving Gold.

Of all sizes and in any quantity, furnished to order. Full instructions sent for operating.
Particular attention given to plating goods for Builders, Plumbers, etc. Hotel and Restaurant work replated.
SAN FRANCISCO GOLD AND SILVER PLATING WORKS,
655 Mission street, San Francisco.
2v25 3m E. G. DENNISTON, Proprietor.

BURLEIGH
ROCK DRILLS
AND
AIR COMPRESSORS.
The Burleigh Rock Drills, which have stood the test of five years constant use at the Hoosac Tunnel, and which are now in use in nearly every State in the Union, as well as in Europe and South America, are unequalled in efficiency and economy by any other Drilling Machine. They are of various sizes, and equally well adapted to Tunnelling, Shafting, Open Cut or Quarrying, and will drill six to ten inches per minute in granite. They are driven by steam above ground, or compressed air when under ground. The Burleigh Air Compressor is the best engine yet devised for furnishing the "air motor" for the many purposes to which it is now being applied.
Send for illustrated pamphlet to
BURLEIGH ROCK DRILL CO.,
FITCHBURG, MASS.
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NELSON & DOBLE,
AGENTS FOR
Thomas Firth & Sons' Cast Steel.

MANUFACTURERS OF
Sledges, Hammers, Stone Cutters', Blacksmiths' and Horse-Shoers' Tools.

13 and 15 Fremont street, near Market, San Francisco
16v1s0r

SHEET IRON PIPE.
THE
Risdon Iron and Locomotive Works
Corner Howard and Beale Streets,
Are prepared to make SHEET IRON AND ASPHALTUM PIPE, of any size and for any pressure, and contract to lay the same where wanted, guaranteeing a perfect working pipe with the least amount of material.
Standard sizes of railroad Car Wheels, with special patterns for Mining Cars. These small wheels are made of the best Car Wheel Iron, properly chilled, and can be fitted up with the improved axle and box—introduced by this company, and guaranteed to outlast any other wheels made in this State.
☞ All kinds of Machinery made and repaired.
24v22-3m JOSEPH MOORE, Superintendent,

MILL STONES.

Portable Mills, Eureka Smut Machines
Bran Dusters, Dufour & Co.'s Celebrated Dutch Anchor Bolting Cloths, and General Mill Furnishing.
TRAVIS & WAGNER,
18v24-3m 41 First street, San Francisco.

LEA & PERRINS'
CELEBRATED
Worcestershire Sauce.

Declared by Connoisseurs to be the only good SAUCE
Caution Against Fraud.
The success of this most delicious and unrivalled Condiment having caused certain dealers to apply the name of "Worcestershire Sauce" to their own inferior compounds, the public is hereby informed that the only way to secure the genuine is to ASK FOR LEA & PERRINS' SAUCE, and see that their names are upon the wrapper, labels, stopper and bottle.
Some of the foreign markets having been supplied with a spurious Worcestershire sauce, upon the wrapper and labels of which the names of Lea and Perrins have been forged, L. and P. give notice that they have furnished their correspondents with power of attorney to take instant proceedings against manufacturers and vendors of such, or any other imitations by which their right may be infringed.
Ask for LEA & PERRINS' Sauce, and see name on wrapper, label, bottle and stopper
Wholesale and for export by the Proprietors, Worcester; Crosse & Blackwell, London, &c., &c., and by Grocers and Oilmen universally. 15v24-tf

Agents Wanted for Zell's Encyclopedia.
Z.E. is a Dictionary of Language. It contains every word in the English language with its derivation and definition.
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Z.E. is a complete work on Mechanics. It describes all new inventions, engines, machinery, tools, etc.
Z.E. is a complete Church History. It describes impartially the various divisions of the church of all ages.
Z.E. is equal to a whole library of works. It describes every material or non-material thing that is capable of description in the language.
Z.E. is well illustrated. It contains nearly three thousand engravings of persons, animals, plants, trees, flowers, machines, buildings, etc.
A specimen number, containing forty pages, will sent to any address on the receipt of ten cents. Sold only by subscription. Apply to
FRANCIS DEWING & CO.,
542 California street, San Francisco.
7v4-4m General Agents for Pacific Coast.

SAN FRANCISCO
SCREW BOLT WORKS,
PHELPS BROTHERS, Proprietors
MANUFACTURERS OF ALL KINDS OF
Machine Bolts, Bridge Bolts, and Ship or Band Bolts,
13 and 15 Drumm Street, San Francisco. 4v24ly

McAFEE, SPIERS & CO.,
BOILER MAKERS
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ALL KINDS OF
Office Desks and Book Cases
On hand and Manufactured to Order, by
JOHNSON & BEST,
No. 311 Pine street, opposite the Pacific Bank,
18v24-6m SAN FRANCISCO.

The Diamond Fields.

The "Arizona diamond fields," according to late accounts, are not in Arizona at all, hut in Colorado. Still it is satisfactory to know that they are located eomewhere, and even if deluded individuale have gone hastily to the former Territory it is not far for them to travel to get into Colorado after all. The definite location, ae now underetood, was pointed out by Ex-Governor William Gilpin, of Colorado, who has delivered an addrese on the "diamond fields of Colorado and New Mexico," which is reported in the Denver (Col.) *News* and Denver *Tribune*. The Governor maintains the existence of an itacolumite, or precious stono formatiou, along the entire Rocky Mountain range, as distiuct and palpahle as the veins and lodes of thc precious metals, or the rocks themselves. The country is described as magnificent in scenery and wonderful in climate and probable mineral productiveness. The Governor stated that the existence of diamonds and other precious stones in the Rocky Mountains, was coufirmed alike hy recent discoveries and old traditions, and spoke of the correspondence existing between this portion of the country aud the "Esmcralda Moutains," and salt regions of Bolivia and Colombia in South America, and of the diamoud regions of Brazil and Hindoetan.

The *News* thinke that prohably no one is more competent to speak on this subject than the gentleman referred to, from the fact of his ecientific knowledge and his personal examinatiou of the country where the precious etones exist. He traced out on maps the location of the diamond fields, and located them in the San Juan Country, near Poncho Pass, in Colorado Territory, saying that hefore long that section of country would develop more diamonds than any other in the kuown world. The southern portion of the Territory, near the New Mexican line he considered prolific in the most precious of minerals, and the largeet and purest of diamonds; the climate is warm and there is a euperahundance of water for mining operations. This geutleman has been at the fielde and the local papers give credence to all his etatemeuts without hesitation. The description of the country is highly colored aud conveys the idea of a new El Dorado.

The *Tribune* meutione that in the report of Major Powell, commanding a Government exploring expedition of the Colorado River, from where the Union Pacific crossee it to the mouth of the Grand Cañon, it is etated that the formation through which the Colorado cuts its way is eandstone of varied colore, similar to the itacolumite of the New Mexico and Brazilian diamond region. This itacolumite formation is mentioned ae runniug lengthwiee through the valley of the Colorado while it strikes the eouthern boundary of Wyoming. This valley is houuded on the west hy the Wahsatch range of mountains, and on the east hy the Rocky Mountain range, and gradually narrowe down to a point at the head of Green River, (the upper branch of the Colorado) on the eaetern border of Idaho, near the forty-fourth parrallel of latitude. The distance indicated by the surveys is about 1,000 miles, hut the character of the productions of the formation is a matter which future explanatione and surveye are necessary to solve.

There are so mauy conflicting statements as to the locatiou of the fields aud the value of the stones found, that the excitement in regard to them has suhsided in a measure. Nevertheless it ie generally thought that a large nnmher of men will go in the direction indicated, hy next epring. No douht that diamond fields have really heen discovered some where in the Territories spoken of, and ae geológical features are not of conrse restricted by arbitrary houndary lines, the fields may lie partly in Colorado, Utah, New Mexico and Arizona, or near the corner where they join. Without doubting the statements of Goveruor Gilpin as to the richnese aud situatiou of the fields, the statemente of partiee well kuowu in this city, would have more weight with our community than any made by peoplo living iu the Territory which will be most benefitted hy the discovery, and consequent increase in population.

The people at the African diamond fields have caught the "Arizona fever," and some of them propose bettering their fortunes by changing their diggings. Some fifty or eixty diamonds have been received here this week hy G. A. Treadwell, Secretary of the Origiual Diamond Discovery and Mining Company, which are pronounced to he genuine geme by prominent jewellers in thie city. The locality from which they came ie a eecret. A real (?) diamond field ie eaid to have beenfound near Hot Creek, British Columbia. A man named B. F. Woodward has arrived in Denver from Arizona with a package of "stones," and of them the Denver *News* eays:

"The collection is said to have heen gathered iu Arizona. It could have been gathered as well in almost any of the Territories. The gernets were of euch an order as can be purchased in the London market for a cent aud a half apiece. Not a single epecimen in the whole collection is entitled to he rated as a stone of any commercial value."

As indicating the nncertainty attending thie matter a diepatch dated Salt Lake, Nov. 11th, states that a party of prospectors have returned with eamplee of precioue etones, including what experts positively pronounce diamonds. Theee were said to have heen found southeast from the Uintah Reservation in Utah. Another dispatch from same place, eame date, saye that a party arriviug there say the fielde are 150 miles from Cheycnne, and that they found Janin's locations and brought back copiee of notiicee. As will be eeen from what we have given, the location of the fields is etill uucertain to the public, though indications point to Colorado. We will endeavor to get what reliable information on the suhject we can for our readere, but hesitate to puhlish the current rumors, many of them without foundation, as they are calculated to mislead many interested in the question.

California State Fair.

Gold Medals Awards.

The committee met, as per adjournmeut, at the Secretary'e office on Saturday and proceeded to read and discuss the claims filed hy the different applicante for the gold medale. The committee had carefully examined all the exhibitions during the fair, but adjourned to give all an opportnnity the more fully to explain the especial merits of each, by filing written statements. Many of these were very interesting and instrnctive, and eviuced a considerable skill in the writers. The medal in the firet department had already beeu awarded to Col. C. Youuger, of San José, for his breed of Short-horn Durhams, so that thie committee commenced with the second department, embracing machinery.

The committee found many articles of great merit, hut the contest was soon narrowed down to the Goodwin pnmp, exhihited hy the inventors, Goodwin & West, and a new turbine wheel, invented and exhihited hy Dr. James Cummings, of Amador county. The medal was finally won hy the former by a ballot of one majority.

In the third department the contest was also quite spirited, and on the first hallot each member of the committee voted for different exhibitione, the hallot etanding one for the exhibition of wax flowers, wax fruit and other wax representations, exhihited by Mrs. Anna Gettz Lucas, of San Francisco; one for millinery—and especially for home-manufactured wire honnet aud other frames, made and exhihited hy Mre. W. C. Barrett, of Sacramento; aud one for the Jute Manufactnring Company, of Oakland. Had the latter filed a etatement euch as they might have done, it is quite prohable they would have been the snccessinl parties, hut the medal wae awarded to Mrs. Lucas hy a unanimous vote.

The fourth department brought ont more applicants than any other, and many exhibitions eeemed very nearly equally meritorius; three, however, were developed to be the favorites of the committee; beet sugar, by the Sacramento Valley Beet Sugar Company, the home mauufactured glaes, of various kinds, exhibited hy the San Francisco Glass Company, or the manager, Carltou Newman; and artificial stone, manufactured by an Eastern company, hut represented here by George W. Morgan, of Sacramento, and who is contemplating the eetahlishment of a factory for its manufacture in this State. The medal was finally awarded to the Glass Company, and the Artificial Stone Compauy, and the Beet Sugar Company were each recommended to the Board for a special medal.

The fifth department had not so many applicants, but here aleo there were three that seemed to the committee pretty evenly divided as to merit. Theee were James T. Stratton, of Alameda, for artificial forests of Australian gum trees; Wm. M. Haynie, of Sacramento, for hops, and Rohert Williameon, of Sacramento, for a very full variety of very superior vegetablee. The latter proved to be the lncky man.

Iu the sixth department E. F. Aiken, of Sacramento, and L. A. Gould, of Santa Clara, were the only coutestante—the former for dried and preserved fruite, and the latter for dessicated fruits or fruits dried by heated air. Both exhibitions were very valuahle and meritorious, but there heing a douht in the minds of the committee ae to the quality of the fruit dried by the deesicated process, Aiken was awarded the medal.

The eeventh department—that of fine arts—embreced etatuary, paintings and deeigns. The artists, beiug proverbially a modest class of people, left the committee to make the decieion pretty much without comment. However, J. C. Devine & Bro., of Sacramento, gave an essay on marble and the ert of working on the same. George G. W. Morgan eet forth the merits of bis idea of a narrow gauge railroad and canal combined, as illustrated in a design exhibited by him at the fair, while Alfred Hart, of San Francisco, entertained the committee with a very interesting and well-writ ten criticism on fine arts, and especcially upon the merits of the portrait and landscapes exhibited by him, and the committee awarded him the medal.

The committee recommended the Board to offer hereafter a gold medal for the most meritorious invention made within the State during the year.—*Union.*

A Frear Stone Front in Oakland.—A three-story building, of about 60 feet frontage, faced some six inchee in thickness with Frear Stone ie heing completed opposite the Railroad depot, on 7th etreet, in our neighboring city. Its color ie light grey, and the molded blocks form a good and subetantial looking front. A considerable number of first-class huildings are now heing erected in Oakland. The city has steadily improved during all the dull times of the past three years. Still more rapid development is anticipated for the next twelve months.

Rich Discovery.—A dispatch dated Eureka, Nov. 11th, etates as follows: The old Lookout ground, owned by the Eureka Conealidated, which has heen worked four months by the Richmond Consolidated, without the knowledge of the former, wae opened to-day by an order from the District Court and shows the largest aud richest body of ore ever opened on Ruby Hill. Great excitement prevails here among mining men.

Insure in the Connecticut Mutual Life.—The late Hon. G. W. Mowe, State Insurance Commissioner, held a life policy in the above Company for the sum of $20,000. Well versed in the etanding, management and ratee of all Companies in the United States, he chose to insure for a liberal sum in thie old Hartford Company.

Toland Medical Institute. — We acknowledge receipt of au invitation from R. Beverly Cole, M. D., to be present at the Commencement Exercises of the Toland Medical Iustitute, hut were unable to attend.

San Francisco Metal Market.

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, Nov. 14, 1872.

IRON.—			
Scotch Pig Iron, ₱ ton	$60 00	@	65 00
White Pig, ₱ ton	65 00	@	70 00
Refined Bar, bad assortment, ₱ lb	— 04½	@	— 5
Refined Bar, good assortment, ₱ lb	— 05	@	— 5½
Boiler, No. 1 to 4	— 05½	@	— 06
Plate, No. 5 to 9	— 06½	@	— 07
Sheet, No. 10 to 13	— 07½	@	— —
Sheet, No. 14 to 20	— 07½	@	— —
Sheet, No. 24 to 27	— 08	@	— —
Horse Shoes	8 00	@	
Nail Rod	10		
Norway Iron	8		
Rolled Iron	5		
Other Irons for Blacksmiths, Miners, etc.	5½	@	6½
COPPER.—			
Sheathing, ₱ lb	— —	@	— 45
Sheathing, Yellow	— 38	@	— 40
Sheathing, Old Yellow	— —	@	— 13
Composition Nails	— 28		— 30
Composition Bolts	— 28		— 34
TIN PLATES.—			
Plates, Charcoal, IX ₱ box	18 00	@	— —
Plates, I C Charcoal	14 00		— —
Roofing Plates	18 50		— —
Banca Tin, Slabs, ₱ lb	— 50		— —
STEEL.—English Cast, ₱ lb	— 19		— —
Drill	— 19		— —
Flat Bar	— 19		— —
Plough Points	3 75		4 00
Russia (for mould boards)	— 12½		— 16
QUICKSILVER.—₱ lb	— 55		— 87½
LEAD.—Pig, ₱ lb	— 5¾		— 6
Sheet	— 10		— —
Pipe	— 9		— 10
Bar	— 6½		— 7
ZINC.—Sheets, ₱ lb	— 11		— 11½
BORAX.—Refined	— 28		— 30
Borax, crude	— 5		— —

Leather Market Report.

SAN FRANCISCO, Thursday, Nov. 14, 1872.

City Tanned Leather, ₱ lb	26@28
Santa Cruz Leather, ₱ lb	26@29
Country Leather, ₱ lb	25@28
Stockton Leather, ₱ lb	26@28

French skins continne firm. All California skins are scarce and bring full prices.

Jodot, 8 Kil., per doz	$60	00@	
Jodot, 11 to 19 Kil., per doz	66	00@	85 00
Jodot, second choice, 11 to 15 Kil. ₱ doz	56	00@	76 00
Lemoine, 16 to 18 Kil., ₱ doz	75	00@	77 50
Levin, 12 and 13 Kil., per doz	68	00@	70 00
Cornallian, 16 to 19 Kil., per doz	63	00@	65 00
Cornellian, 12 to 14 Kil., per doz	56	00@	60 00
Ogerau Calf, ₱ doz	54	00@	
Simon, 18 Kil., ₱ doz	60	00	
Simon, 20 Kil. ₱ doz	65	00	
Simon, 24 Kil. ₱ doz	72	00	
Robert Calf, 7 and 8 Kil	35	00@	40 00
French Kips, ₱ lb	1	10@	1 30
California Kip, ₱ doz	55	00 to	70 00
French Sheep, all colors, ₱ doz	8	00@	15 00
Eastern Calf for Backs, ₱ lb	1	15@	1 25
Sheep Roans for Topping, all colors, ₱ doz	9	00@	13 00
Sheep Roans for Linings, ₱ doz	5	50@	10 50
California Russett Sheep Linings	1	75@	5 50
Best Jodot Calf Boot Legs, ₱ pair	5	25	
Good French Calf Boot Legs, ₱ pair	4	50@	5 00
French Calf Boot Legs, ₱ pair	4	00	
Harness Leather, ₱ lb		36@	37½
Fair Bridle Leather, ₱ doz	48	00@	72 00
Skirting Leather, ₱ lb		34@	37½
Welt Leather, ₱ doz	30	00@	50 00
Buff Leather, ₱ foot		18@	21
Wax Side Leather, ₱ foot		20@	22
Eastern Wax Leather		26	

Mining and Other Companies.

Owing to the time necessary to mail the present large edition of the M. & S. Press, we are obliged to go to press on Thursday evening—which is the very latest hour we can receive advertisements.

Altona Gravel Mining Company—Location

of works, Graaa Valley, California.

Notice.—There are delinquent upon the following described atock, on account of aasesament (No. 4) levied on the third day of October, 1872, the several amounta aet opposite the namea of the respective ahareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Boynton, O W	20	200	$20 00
Boynton, O W	254	18	1 80
Carman, William	102	100	10 00
Carman, William	155	35	3 50
Carman, William	259	12	1 20
Coffman, Mary	230	10	1 00
Coffman, Mary	278	1	10
Dodge, D F	14	400	40 00
Grant, Emanuel	231	40	4 00
Grant, Emanuel	232	20	2 00
Grant, Emanuel	233	10	1 00
Grant, Emanuel	234	10	1 00
Gray, Mrs. L B	220	50	5 00
Gray, Mrs L B	254	5	50
Jeffree, E B	29	100	10 00
Jeffree, E B	30	100	10 00
Jeffree, E B	154	70	7 00
Jeffree, John T	15	400	40 00
Jeffree, John T	16	200	20 00
Jeffree, John T	35	100	10 00
Jeffree, John T	36	100	10 00
Jeffree, John T	37	100	10 00
Jeffree, John T	38	100	10 00
Jeffree, John T	238	370	37 00
Jeffree, John T	268	125	12 50
Pinkham, S	143	100	10 00
Pinkham, S	258	9	90
Sparrow, S J, Trustee	208	25	2 50
Sterling, R W	61	100	10 00
Sterling, R W	62	50	5 00
Sterling, R W	63	50	5 00
Sterling, R W	64	25	2 50
Sterling, R W	65	25	2 50
Sterling, R W	67	25	2 50
Sterling, R W	70	20	2 00
Sterling, R W	71	20	2 00
Sterling, R W	73	10	1 00
Sterling, R W	267	36	3 60
Stokes, W C	215	10	1 00
Stokes, W C	260	1	10
Tardif, William	25	100	10 00
Tardif, William	174	35	3 50
Tardif, William	263	12	1 20
Thomas, Reuben	217	10	1 00
Thomaa, Reuben	279	1	10
Wilder, David, Trustee	281	2	20
Wilder, David, Trustee	291	500	50 00
Wright, H N	210	75	7 50

And in accordance with law, and an order of the Board of Trustees, made on the third day of October, 1872, so many sharea of each parcel of aaid stock as may be necessary, will be sold at public auction, at No. 327 Montgomery street, San Francisco, Cal., on the 25th day of November, 1872, at the hour of 10 o'clock A. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenaes of sale.

DAVID WILDER, Secretary.

Office, 28 Merchants' Exchange, California street, San Francisco, Cal. no9-3t

Excelsior Silver Mining Company—Location

of works, Yellow Pine District, Lincoln County, Nevada.

At a meeting of the Trustees of the above named company, held October 29th, 1872, at the office, No. 640 Washington street, San Francisco, it was, on motion, ordered that the following resolution, which was unanimously passed at a meeting of the Stockholders, held October 28th, 1872, be advertised for one month in the Mining and Scientific Press, and a personal notice served on each member:

Resolved—That we, the Stockholders representing in our individual names 4,480 shares of the Excelsior Silver Mining Company, do hereby mutually agree to return our individual certificate or certificates of stock now held by us and standing in our names, agreeing that upon a pro rata division of the entire stock between the stockholders, that we will individually pay a monthly assessment of ten dollars ($10) per month for one year, unless sooner rescinded by the Trustees of said mine.

Also, that said monthly assessment shall be paid on or before the tenth day of each month, commencing November 10th, 1872. By order of Trustees.

no2-1m W. A. KOLLMYER, Secretary.

Golden Rule Mining Company—Location

of works: Chili Hill, Tuolumne County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of November, 1872, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary at the office of the Company 432 Montgomery street, (Room No. 5) San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the third day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the fourth day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. B RUSSELL, Secretary.

Office, Room No. 5, 432 Montgomery street, San Francisco, Cal.

Hudson Gold Mining Company—Location

of works, Cherokee Mining District, Plumaa County, State of California.

Notice is hereby given that at a meeting of the Trustees of aaid Company, held on the 11th day of November, 1872, an assessment of 7½ cents per share was levied upon the capital stock of aaid Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 411 California atreet, San Francisco, California. Any atock upon which aaid aasessment aball remain unpaid on Monday, the 16th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 6th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expensea of the sale.

JCS. L. KING, Secretary.

Office, 411 California street, San Francisco, California. no16-4t

Indus Gold and Silver Mining Company—

Location of works, Virginia City, Storey County, Nevada.

Notice is hereby given that at a meeting of the Board of Trustees of said Company, held on the 19th day of October, 1872, an assessment of fifty cents per share was levied upon the capital stock of said company, payable immediately, in gold coin of the United States, to the Secretary, at No. 24 Merchants' Exchange, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 23d day of November, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 16th day of December, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees,

DAVID WILDER, Secretary.

Office, 24 Merchants' Exchange, California street, San Francisco, Cal oc26-4t

Kincaid Flat Mining Company—Location

of works, Tnolumne County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said company, held on the 18th day of Oc ober, 1872, an assessment of three dollars per share was levied upon the capital stock of said company, payable immediately, in United States gold coin, to the Secretary, at his office, No 220 Clay street, San Francisco, Cal.

Any stock upon which said assessment shall remain un-

paid on the 21st day of November, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the tenth day of December, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees. R. H. CORNELL, Secretary.
Office - No. 220 Clay street, San Francisco, Cal. ow18-4t

Lady Franklin Gold and Silver Mining

Company—Location of Works, Silver Mountain Mining District, Alpina County, State of California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 24th day of September, 1872, the several amounts set opposite the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
James Gallagher	45	5	$2 50
James Gallagher	46	5	2 50
Andrew J Field	66	5	2 50
Andrew J Field	182	2½	1 25
B L Ostareno	72	5	2 50
Myer Davidson	107	25	12 50
Josiah Legro	117	5	2 50
Josiah Legro	157	5	2 50
Josiah Legro	167	10	5 00
Josiah Legro	169	2	1 00
Richard Inch	128	10	5 00
Richard Inch	129	10	5 00
Richard Inch	130	20	6 00
Richard Inch	131	5	2 50
Richard Inch	132	5	2 50
Richard Inch	133	5	2 50
Richard Inch	134	16¾	8 12
Philip Welha	142	5	2 50
A McGregor	143	4	2 00
J K Lamar	144	15	7 50
G C McAllister	159	3	1 50
Georgu Day	171	5	2 50
D E Swinerton	177	3½	1 75
D E Swinerton	230	1½	75
D E Swinerton	232	5	2 50
P Lewie	184	4	2 00
Thomas Radford	187	10	5 00
William J Thomas	201	10	5 00
William J Thomas	202	6	2 50
W N Lee	200	5	2 50
J C E Klepzig	203	20	10 00
J C E Klepzig	204	10	5 00
J C E Klepzig	205	10	5 00
J C E Klepzig	206	10	5 00
J C E Klepzig	207	10	5 00
J C E Klepzig	208	10	5 00
J C E Klepzig	209	10	5 00
J C E Klepzig	210	10	5 00
J C E Klepzig	211	10	5 00
Lewis Fisher	214	10	5 00
Lewis Fisher	215	5	2 50
Frank Rabel	218	2	1 00
E J Bacon	231	10	5 00
William Gallagher	233	10	5 00
C R Callender	234	2	1 00
James Wilson	250	5	2 50
James Wilson	236	5	2 50
William Blacklock	249	5	2 50
John Swinerton	251	5	2 50
M Marks	255	4	2 00
P W Hogan	263	20	10 00
E Brian	264	70	35 00

And in accordance with law, and en order of the Board of Trustees, made on the 24th day of September, 1872, so many sharee of each parcel of sold stock as may be necessary, will be sold at the office of the Company, 507 Montgomery street, San Francisco, California, on the 18th day of November, 1872, at 1 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of edvertising and expenses of the sale.

Office, 507 Montgomery street, San Francisco, California. no9-2t

Noonday Silver Mining Company---Location

of works: White Pine Mining District, White Pine County, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment, No. 12, levied on the 11th day of October, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Barton, W H, Trustee	566	100	20 00
Barton, W H, Trustee	594	50	10 00
Barton, W H, Trustee	570	100	20 00
Barton, W H, Trustee	729	50	10 00
Barton, W H, Trustee	1028	200	40 00
Barton, W H, Trustee	1029	100	20 00
Bogart, O H	633	200	40 00
Child & Jones, Trustees	689	100	20 00
Child & Jones, Trustees	113	100	20 00
Crocker, J H, Trustee	723	60	10 00
Cribbins, Patrick	955	40	8 00
Cathcart, A B, Trustee	947	100	20 00
Cahill & Fox, Trustee	937	2	40
Cope, Geo W, Trustee	949	100	20 00
Cope, Geo W, Trustee	967	70	14 00
Copo, Geo W, Trustee	974	50	10 00
Cope, Geo W, Trustee	975	70	14 00
Congdon, George	545	100	20 00
Cohimen, Wm	959	50	10 00
Cohlman, Wm	1027	100	20 00
Davidson, W P	305	20	4 00
Downer, A J, Trustee	591	100	20 00
Deen, G A	759	25	5 00
Dean, G A	855	8	1 56
Dubriel, P	918	100	20 00
Drexler, L P & Co, Trustees	1015	50	10 00
Dougherty, B	1034	19	3 80
Fordham, R B	444	56	13 20
Farnam, E	79	100	20 00
Fenn, T W, Trustee	539	50	10 00
Forrest, J M	925	20	4 00
Hill, A E, Trustee	322	50	10 00
Hill, A E, Trustee	324	50	10 00
Hill, A E, Trustee	345	50	10 00
Hill, A E, Trustee	345	50	10 00
Hill, A E, Trustee	380	50	10 00
Hill, A E, Trustee	381	50	10 00
Hill, A E, Trustee	382	50	10 00
Hill, A E, Trustee	384	50	10 00
Hill, A E, Trustee	395	25	5 00
Hill, A E, Trustee	405	100	20 00
Hill, A E, Trustee	410	25	5 00
Hill, A E, Trustee	415	50	10 00
Hill, A E, Trustee	427	100	20 00
Hill, A E, Trustee	434	20	4 00
Hunt, G H, Trustee	944	200	40 00
Hall, N H, Trustee	718	100	20 00
Hall, N H, Trustee	720	100	20 00
Hall, N H, Trustee	1012	100	20 00
Hilliard, B F, Trustee	844	100	20 00
Hurley, Miss M J A	009	20	4 00
Howard & Lincoln, Tr	1015	50	10 00
Hoffman, August	1031	250	50 00
Hoffman, August	1032	250	50 00
Ives, R O, Trustee	227	20	4 00
Jonasson, J	657	50	10 00
Kibbe, H C, Trustee	825	100	20 00
Kratzenstein, O	911	100	20 00
Koenig, A	954	55	13 00
Ludington, H Y	102	100	20 00
Lowenberg, S, Trustee	788	00	12 00
Lowenberg, S, Trustee	790	40	8 00
Lowenberg, S, Trustee	958	50	10 00
Lowenberg, S, Trustee	969	20	4 00
Livingston, J M, Trustee	954	50	10 00
Lincoln & Howard, Tr	1007	50	10 00
Lincoln & Howard, Tr	1025	50	10 00
McDonald & Whitney, Tr	570	50	10 00
McDonald & Whitney, Tr	567	200	40 00
McDonald & Whitney, Tr	679	100	20 00
McDonald & Whitney, Tr	901	50	10 00
McDonald, M J	635	100	20 00
Mason, Thomas	798	50	10 00
Mason, Thomas	925	100	20 00
Martin, M S, Trustee	500	50	10 00
Martin, M S, Trustee	514	100	20 00
Martin, M S, Trustee	561	50	10 00
Martin, M S, Trustee	774	100	20 00
McDonald, M J, Trustee	870	2	40
McDonald, M J, Trustee	875	73	14 60
McDonald, M J, Trustee	878	100	20 00
McDonald, M J, Trustee	881	200	40 00
McDonald, M J, Trustee	989	100	20 00
McDonald, M J, Trustee	990	100	20 00
McDonald, M J, Trustee	991	100	20 00
McDonald, M J, Trustee	992	100	20 00
McDonald, M J, Trustee	993	100	20 00
McDonald, M J, Trustee	994	100	20 00
McDonald, M J, Trustee	995	100	20 00
McDonald, M J, Trustee	996	100	20 00
McDonald, M J, Trustee	997	100	20 00
McDonald, M J, Trustee	998	100	20 00
McDonald, M J, Trustee	999	100	20 00
Mitchell, J S, Trustee	571	80	10 00
Mitchell, J S, Trustee	897	200	40 00
Mitchell, J S, Trustee	973	50	10 00
Mitchell, J S, Trustee	975	57	11 40
Mitchell, J S, Trustee	1003	20	4 00
Meyers, A	946	116	23 20
McCullough, T J	1014	100	20 00
Neal, Chas S, Trustee	833	150	30 00
Norwood, W E, Trustee	873	100	20 00
Orne, W H	931	50	10 00
Orne, W H	932	50	10 00
Owens, T J, Trustee	1000	65	13 00
Page, Nathaniel	58	100	20 00
Page, Nathaniel	59	100	20 00
Page, Nathaniel	60	33	6 60
Peck, C S	979	300	60 00
Peck, O S	980	200	40 00
Rogers, R H	957	100	20 00
Richardson, E A, Trustee	880	100	20 00
Richardson, E A, Trustee	902	100	20 00
Richardson, E A, Trustee	910	50	10 00
Richardson, E A, Trustee	935	50	10 00
Richardson, E A, Trustee	938	50	10 00
Richardson, E A, Trustee	943	300	60 00
Richardson, E A, Trustee	971	50	10 00
Richardson, E A, Trustee	972	10	2 00
Richardson, E A, Trustee	1001	500	100 00
Stevens, C, Trustee	26	100	20 00
Sterkweather, J B, Tr	526	5	1 00
Schmitt, B L, Trustee	8 7	100	20 00
Soren, Geo S, Trustee	820	50	10 00
Soren, Geo S, Trustee	921	50	10 00
Tibbey, E S, Trustee	393	1 (hal)	20
Tibbey, E S, Trustee	700	50	10 00
Thomson, M	1033	600	120 00
Uhler, J Clem, Trustee	535	100	20 00
Uhler, J Clem, Trustee	639	100	20 00
Uhler, J Clem, Trustee	541	100	20 00
Uhler, J Clem, Trustee	647	100	20 00
Vessarie, Louis	634	100	20 00
Williams, Henry, Trustee	609	50	10 00
Woods, F H, Trustee	828	750	150 00
Wade, A P, Trustee	950	100	20 00
Wade, A P, Trustee	951	50	10 00
Woods & Freeborn, Tr	982	300	60 00
Woods & Freeborn, Tr	983	200	40 00
Woods & Freeborn, Tr	984	200	40 00
Woods & Freeborn, Tr	985	100	20 00
Woods & Freeborn, Tr	988	100	20 00
Woods & Freeborn, Tr	1006	50	10 00

And in accordance with law, and en order of the Board of Trustees, made on the eleventh day of October, A. D. 1872, so meny shares of each parcel of said stock es may be necessary, will be sold at public auction at the office of the Company, on the fourth day of December, A. D., 1872, at the hour of one o'clock, P. M., of said day, to pay said delinquent assessment thereon, together with costs of edvertising, and expenses of sale.

CHAS. H. FISH, Secretary.

Office, Room 26, Heyward's Building, No. 419 California Street, San Francisco Cal. no 16-3t.

Ohio Consolidated Gold Mining Company

—Location of works, West Point, Calaveras County, Cal.

NOTICE.—There are delinquent upon the following describ d stock, on account of assessment levied on the 24th day of September, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Sberes.	Amount.
Geo O Ecker	71	50	5 00
Geo O Ecker	184	500	50 00
I K Cerlton	12	500	50 00
D E Spencer	23	100	10 00
D E Spencer	24	100	10 00
D E Spencer	25	100	10 00
D E Spencer	26	100	10 00
D E Spencer	27	100	10 00
D E Spencer	28	50	5 00
D E Spencer	29	50	5 00
D E Spencer	30	50	5 00
D E Spencer	31	50	5 00
D E Spencer	32	50	5 00
D E Spencer	33	50	5 00
D E Spencer	34	50	5 00
D E Spencer	35	50	5 00
D E Spencer	36	50	5 00
D E Spencer	37	50	5 00
Joseph Fulton	210	550	55 00
E A Richardson, Trustee	50	490	49 00
E A Richerdson, Trustee	58	100	10 00
E A Richardson, Trustee	70	100	10 00
E A Richardson, Trustee	52	500	50 00
E A Richardson, Trustee	54	500	50 80
E A Richardson, Trustee	65	500	50 00
Chas E Fairbanks	52	500	50 00
Chas E Fairbanks	53	400	40 00
Chas E Fairbanks	54	300	30 00
Chas E Fairbanks	55	200	20 00
Chas E Fairbanks	56	200	20 00
Emma Hinck	57	100	10 00
Emma Hinck	58	100	10 00
Emma Hinck	59	100	10 00
Emma Hinck	60	100	10 00
Emma Hinck	61	100	10 00
Wm T Reynolds	234	250	25 00
W A Knapp, Trustee	75	50	5 00
W A Knapp, Trustee	77	50	5 00
W A Knapp, Trustee	80	100	10 00
W A Knapp, Trustee	90	100	10 00
W A Knapp, Trustee, unissued		850	85 00
A M Daley	82	50	5 00
A M Daley	83	50	5 00
Geo H Willard	88	100	10 00
D M Hosmer	89	500	50 00
D M Hosmer	158	100	10 00
D M Hosmer	169	100	10 00
D M Hosmer	170	100	10 00
D M Hosmer	171	100	10 00
D M Hosmer	172	100	10 00
A H Huhbard	94	100	10 00
D Macdonald	08	50	5 00
D Macdonald	99	50	5 00
D Macdonald	100	50	5 00
D Macdonald	104	50	5 00
D Macdonald	108	100	10 00
D Macdonald	109	100	10 00
D MacDonald	110	100	10 00
D Macdonald	111	100	10 00
D Mecdonald	113	100	10 00
D Macdonald	114	100	10 00
D Macdonald	118	25	2 50
D Macdonald	119	25	2 50
D Macdonald	121	25	2 50
D Macdonald	122	25	2 50
D Macdonald	123	25	2 50
D Macdonald	124	25	2 50
D Macdonald	125	25	2 50
D Macdonald	125	25	2 50
A Bateman, unissued		10	1 00
R P Franklin	186	50	5 00
R P Franklin	187	50	5 00
Jno F Taylor	188	200	20 00
A Bateman, unissued		10	1 00
R P Franklin	186	50	5 00
R P Franklin	187	50	5 00
Jno F Taylor	188	200	20 00
B Dore	8	100	10 00
B Dore	161	50	5 00
B Dore	162	100	10 00
B Dore	189	100	10 00
B Dore	190	100	10 00
B Dore	191	100	10 00
B Dore	192	50	5 00
B Dore	193	50	5 00
B Dore	194	200	20 00
Geo F Stewart	205	1500	150 00
Jno H Wood, Trustee	208	100	10 00
Jno H Wood, Trustee	212	100	10 00
Jno H Wood, Trustee	225	100	10 00
Jno H Wood, Trustee	227	300	30 00
Jno H Wood, Trustee	231	100	10 00
Jno H Wood, Trustee	232	200	20 00
W F Leon	228	500	50 00
W F Leon	229	250	25 00
W F Leon	230	250	25 00
Jas F Ward	217	500	50 00
Jas F Ward	218	100	10 00
Jas F Ward	219	100	10 00
Jas F Ward	220	100	10 00
Jas F Ward	221	50	5 00
Jas F Ward	222	50	5 00
Jas F Ward	223	50	5 00
Jas F Ward	224	50	5 00
H P Osgood	233	250	25 00

And in accordance with law, and an order of the Board of Trustees, made on the 24th day of September, 1872, so many shares of each parcel of said Stock as may be necessary, will be sold at public auction, at the office of the Company, room No. 1, 432 Montgomery street, San Francisco, Cal., on Setnrday, the 23d day of Novenuber, 1872, et the hour of 1 o'clock P. M. of said day, to pey said delinquent Assessment thereon, together with costs of edvertising and expenses of sale.

W. A KNAPP, Secretary.

Office, 432 Montgomery street, over Donohue & Kelly's Bank. no2-3t.

Norman Gold Mining Company—Location

of works, Aqueduct Mining District, Amador County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said company, held on the 11th day of November, 1872, en assesment of five cen s per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary, at the office of the company, Room 5 and 5, No. 302 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Thursday, the 12th day of December, 1872, shall be decreed delinquent, and will be duly advertised for sale at public auction; and unless payment shall be made before, will be sold on Saturday, the 4th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

W. H. WATSON, Secretary.

Office, Room 5 and 5, No. 302 Montgomery street, San Francisco, Cal. no15

Old Providence Mill and Mining Company,

Location of works, Bayden Hill Mining District, Lassen County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said company, held on the 7th day of November, 1872, an assessment of twenty-five cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin to the Secretary, at the office of the company, No. 415 Montgomery street, San Francisco. Any stock upon which said assessment shall remain unpaid on the 14th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 6th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees. FRANK SWIFT, Secretary.

Office, 415 Montgomery street, San Francisco, Cal.

San Francisco Co-operative Printing

Company.—Locetion: 411 Olay and 412 Commercial Sts., San Francisco, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of the San Francisco Co-operative Printing Company, held on the 5th day of November, 1872, assessment No. 4, levied on the 17th day of September, 1872, of $12 per share, having heen rescinded, on same day, an assessment of Five Dollars per share was levied on the Capital Stock of seid Company, payable immediately, in United States gold coins to the Secretary, at the office of the Company, 412 Commercial street, San Francisco, Cal.

Any stock upon which said assesment shall remain unpaid on Monday, the 9th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the 31st day of December, 1872, to pay the delinquent assesment, together with the cost of advertising and expenses of sale.

B. H. DAILY, Secretary

Office 411 Clay St. and 412 Commercial St., San Francisco, Cal.

Silver Wave Mining Company—Location

of works, White Pine Mining District, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment (No. 9) levied on the 21st day of September, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Name.	No. Certificate.	No. Sberes.	Amount.
Balcom, C F, Trustee	522	50	$50 00
Balcom, O F, Trustee	523	50	50 00
Barton, W H, Trustee	352	200	200 00
Barton, W H, Trustee	376	10	10 00
Barton, W H, Trustee	490	50	50 00
Breed, H L, Trustee	516	20	20 00
Crocker, J H, Trustee	489	50	50 00
Crocker, J H, Trustee	491	20	20 00
Crocker, J H, Trustee	492	100	100 00
Crocker, J H, Trustee	493	50	50 00
Croxall, J D	449	100	100 00
Eyre, E E, Trustee	507	50	50 00
Fogle, L O, Trustee	483	100	100 00
Fogle, L C, Trustee	484	100	100 00
Fogle, L C, Trustee	485	100	100 00
Holmes, H J	511	447	447 00
Hopkine, T R	521	00	90 00
Loveland, L F, Trustee	247	50	50 00
Martin, M S, Trustee	199	100	100 00
Martin, M S, Trustee	439	20	20 00
Perkins, J E	464	598	598 00
Perkins, J E, Trustee	337	500	500 00
Richardson, E A, Trustee	476	100	100 00
Richardson, E A, Trustee	485	80	80 00
Richardson, E A, Trustee	494	2000	2000 0
Richardson, E A, Trustee	496	50	50 00
Richardson, E A, Trustee	497	50	50 00
Richardson, E A, Trustee	498	95	95 00
Richardson, E A, Trustee	499	100	100 00
Richardson, E A, Trustee	504	75	75 00
Richardson, E A, Trustee	520	100	100 00
Richardson, E A, Trustee	524	300	300 00
Richardson, E A, Trustee	525	85	85 00
Robertson, Thos B, Trustee	519	300	300 00
Tibbey, E S, Trustee	512	100	100 00
Tibbey, E S, Trustee	513	100	100 00
Tibbey, E S, Trustee	514	100	100 00
Tibbey, E S, Trustee	515	100	100 00
Wblte, Jas T	399	12	12 00

And in accordance with law, and an order of the Board of Trustees, made on the 21st day of September, 1872, so many shares of each parcel of said stock as may be necesary will be sold at pnblic anction, at the office of the company, on Monday, the 25th day of November, 1872, at the hour of two o'clock, P. M., of said day, to pay said delinquent assesment thereon, together with costs of advertising and expenses of sale.

J. W. OLARK, Secretary.

Office, 418 California street, San Francisco. no2-3t

San Francisco Co-operative Land and Building Association.

Notice is hereby given that all installments due on shares in this association, are called in, and payment thereof is demanded. All shares delinquent at the expiration of thirty days from this date, will be advertised for sale. By order of the Board of Directors.

H. B. CONGDON, Secretary.

Office, 306 Montgomery street, San Francisco, November 15, 1872. no16-4t.

State of Maine Mill and Mining Company

—Location of mine, Amador County, California.

NOTICE is her by given that at a meeting of the Board of Trustees of said Company, held on the 17th day of October, 1872, an assessment of five cents per share was levied upon the capi al stock of said company, payable immediately, in United States gold coin, to the Secretary, at the office of the company, No. 306 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unp id on the 26th day of November, 1872, shall be deemed delinquent and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 16th day of December, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

H. B. CONGDON, Secretary.

oc26-4t

Office, No. 306 Montgomery street, San Francisco, Cal.

The North San Francisco Homestead

and Railroad Association Location of property: City and County of San Francisco, State of California.

Notice is bereby given, that at a meeting of the Board of Trustees of said Company, held on the 5 h day of Nov, 1872, an assessment of Three Dollars per share, was levied upon the capital stock of said Company, payable immediately in United S ates gold and silver coin, to the Secretary, at the office of the Company, No. 314 California street, San Francisco, California. Any stock upon which said assessment shall remain unpaid, on the sixth day of Decen ber, 1872, shall be deemed delinquent, and will be duly advertised for sale at pub ic auction, and unless payment shall be made before, will be sold on Monday, the twenty-third day of Decemher, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. D. SMITH, Secretary.

Office, 314 California street, San Francisco, Cal.

NOTICE.

To the Stockholders of the Sutro Tunnel Company.

At a meeting of the Trustees of the Sutro Tunnel Company, held at the office of the Company, in the city of San Francisco, on the 12th day of November, 1872, the following resolution was adopted:

"Resolved, That it is the opinion of this Board that the capitel stock of this Company should be increased up to Fifteen Million Dollers, and be divided into fifteen hundred thousand shares of the per velue of ten dollars per shere, and that a meetlng of the stockholders be end is bereby called to take place at the office of the Company, in the city of San Francisco, at No. 321 California street, at 1 o'clock P. M. the Fourteenth day of December, 1872, to determine upon this proposition."

(Signed)

JOSEPH ARON,
CHAS. W. BRUSH,
EDWARD N. HOOPER,
IGNATZ STEINHART,
SOLOMON HEYDENFELDT,
Trustees.

PELHAM W. AMES, Secretary. no16-4t

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To prevent infringements, notice is hereby given, that *Betts's name is on every Capsule he makes for the principal merchants in England and France,*

thus enabling vendor, purchaser, and consumer not only to identify the genuineness of the capsule, but likewise the contents of the vessel to which it is applied.

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And all other olasses of work generally done at first-class establishments, manufactured hy us at the lowest prices, and of the best quality.

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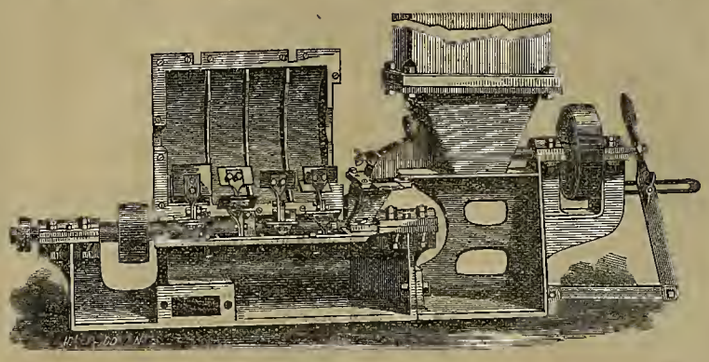

For Reducing Ores to Fine Powder.

OFFICE OF SWANSEA MELTING AND REFINING COMPANY OF CHICAGO.
CHICAGO, July 15, 1872.

L. P. DODGE, Esq., Agent for Messrs. WHELPLEY & STORER—Dear Sir: Your communication of the 10th instant is at hand. In reply would say that we have heen running a Whelpley & Storer Pulverizer for the last six months, grinding ores of different kinds, some of them exceedingly hard. The operation of the Pulverizer has been, in every respect, a complete success, grinding very fine, with hut little power required to drive it, and hut slight expense for wearing parts. We cordially recommend them to all parties requiring a Pulverizer for miningor other operations. Respectfully' J. W. JONES, Superintendent, etc.

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This Machinery has heen adopted hy nearly all the Eastern reduction works for reducing ores.

Parties purchasing machinery will find it for their interest to examine this hefore purchasing elsewhere.

9v25-3m GEO. D. WYMAN, Agent Pacific Coast.

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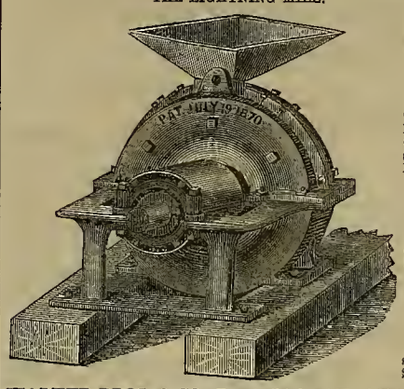

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For Pulverizing Quartz,

"Charleston Rock," and all Native Phosphates, Flint, Feldspar, Iron Ore, Manganese, Antimony, Carhon, Corundum, Old Crucibles, Barytes, Brimstone, Slate, Soapstone, Graphite, Glass, Marhle, Plaster, Anthracite and Bituminous Coals, etc.

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For Grinding Bones, Rock, Quartz, and all hard substances; also, Oorn, Wheat, Oats, Barley, Coffee, Spices, etc.

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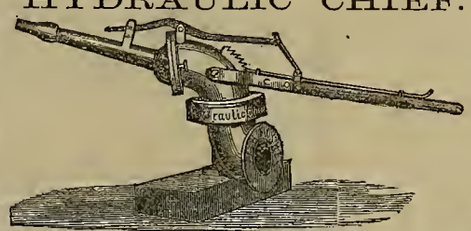

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HYDRAULIC MINERS, TAKE NOTICE—I hereby caution Miners and Manufacturers against making, buying, selling or using a Hydraulic Machine or Joint known as the Little Giant, manufactured and sold by R. R. & J. Craig and Richard Hoskin, as the same is an infringement upon the invention of the machine known as FISHER'S HYDRAULIC CHIEF, secured hy Letters Patent, No. 110,222, dated Dec. 20, 1870. All partics participating in such infringements will he rigorously prosecuted. Nevada, Jan. 13th. F. H. FISHER.

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MINING STEAM PUMPS.

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Notice is hereby given, that the copartnership heretofore existing hetween A. J. Severance, Charles W. Randall and J. Gus. Burt, under the firm name of "Severance, Holt & Co.," is this day dissolved by mutual consent. A. J. Severance, having purchased all the interest of his late partners, will continue the husiness of manufacturing and selling Diamond Drills as hefore, under the style of A. J. Severance & Co.

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Office, 315 California street. A. J. SEVERANCE, CHAS. H. RANDALL.

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Manufacturers of Steam Engines, Quartz and Flour Mill Machinery, Steam Boilers (Marine, Locomotive and Stationary), Marine Engines (High and Low Pressure). All kinds of light and heavy Castings at lowest prices. Cams and Tappets, with chilled faces, guaranteed 40 per cent. more durable than ordinary iron.

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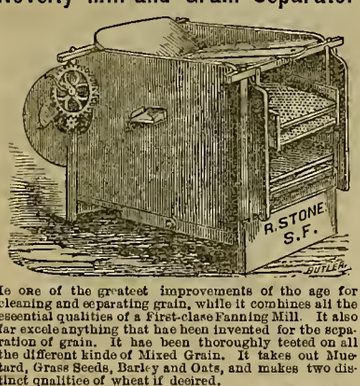

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This Pan is far superior to all others in several important particulars. The grinding mullers are near the center, requiring less power. The plow-shaped grooves raise the quicksilver with the pulp regularly, with less power, without violence, and with better amalgamating effect, besides admitting of a larger charge. The inclined-shaped housings of the muller-plate openings efficiently force the pulp directly under the mullers.

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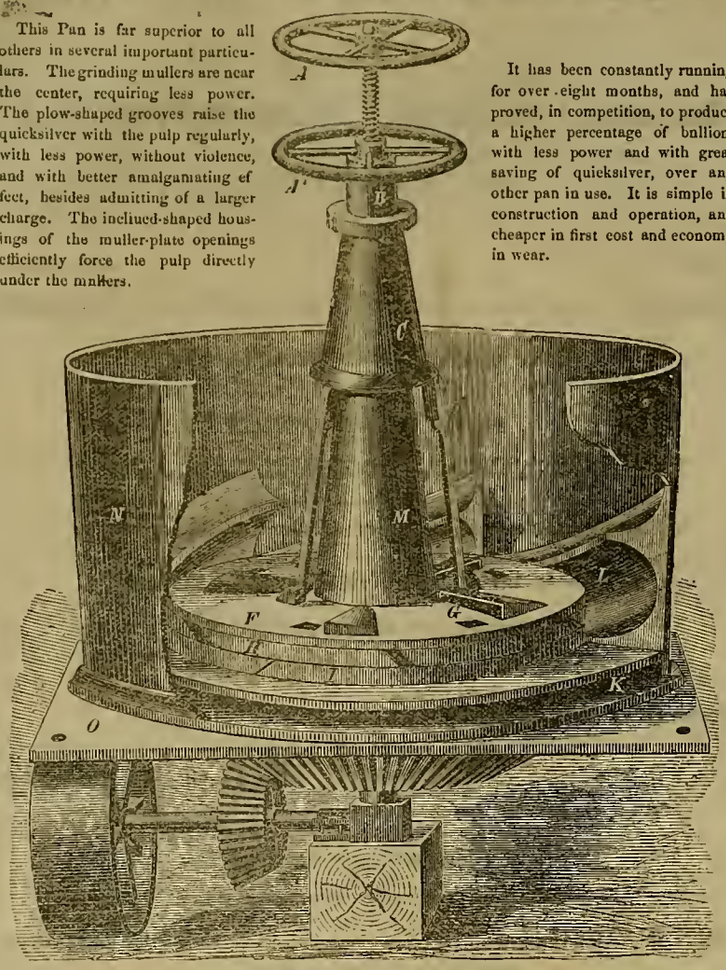

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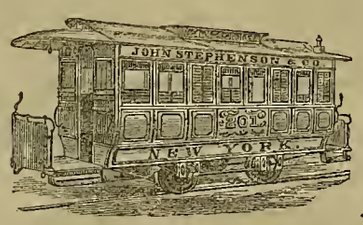

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COMMENCING

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7.15 A. M. (Daily). Cal. P. R. R. Steamer (from Broadway Wharf)—Connecting at Vallejo with Trains for Calistoga, Knight's Landing and Sacramento; making close connection at Napa with stages for Sonoma.

2.00 P. M. (Sundays excepted). S. F. & N. P. R. R. Steamer (from Broadway Wharf), connecting at Donahne with Trains for Cloverdale. Making close connection at Lakeville with stages for Sonoma.

2.00 P. M. (Sundays excepted). Stockton Steamer (from Broadway Wharf), touching at Vallejo, Benicia, and Landings on the San Joaquin river.

3.00 P. M. (Daily). San Jose Passenger Train (via Oakland), stopping at all way Stations.

4.00 P. M. (Sundays excepted). Passenger Train (via Oakland) for Lathrop, Merced, Visalia, Tipton, and Los Angeles, Stockton and Sacramento.

4.00 P. M. (Sundays excepted). Cal. P. R. R. Steamer (from Broadway Wharf) connecting at Vallejo with Trains for Calistoga, Knight's Landing and Sacramento.

4.00 P. M. (Sundays excepted). Sacramento Steamer (from Broadway Wharf), touching at Benicia, and Landings on the Sacramento river.

6.30 P. M. (Daily). Overland Emigrant Train (via Oakland)—Through Freight and Accommodation.

OAKLAND BRANCH.—LEAVE SAN FRANCISCO, 7 00, 8 10, 9 20, 10 10 and 11 20 a. m., 12 40, 1 50, 3 00, 4 00, 5 15, 6 30, 8 9.20 and *11 30 p. m. (9 20, 11 20 and 3 00 to Oakland only).

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SAN FRANCISCO, SATURDAY, NOVEMBER 23, 1872.

VOLUME XXV. Number 21.

Our Representative Arts.

About, or eoon after, New Yeare, Mr. Guido Knstel, the distinguished authority on California and Novada methods of reduction, by mill procees, eto., will take hie departure hence ae our representative at large to the great Vienna World Exposition of 1873.

This Exposition will differ from the French Expoeition of 1867, eix ycars ago, much in the samc manner as the German character differe from the French. It will represent the Industrial Arte and the Sciencee in their lateet stagee of advanccment as hearing thereupon, very methodically, if the German character cau guarantee it. The Expoeition includee in the plan, we are told, an historical view of the industries of the civilized natione from their earliest infancy, illustrated by modcls, placed in their proper order befor the eye.

Mr. Kustel desires to show the Old World the minere, mechanice and metallurgists who have been in thie bnsincss in Saxony, Bavaria and Moravia 1,000 or 1,100 years, in other placee 2,000 years, without interruption—in the continuously profitable occupation of mining—what the daring and adventurous blood of Californiane has developed in the antipodee of our race'e birthplace, and what we can contribute that may be new or good. That aseuredly is vastly better for *us* than much that ie done by those long-experienced anceetral etay-at-homes, and our coueine in the mining arts.

Mr. Kustel proposes to take with him a full set of modele of our California concentrating, milling and reduction devicee, representing to the underetanding the actual methode here practiced. While theee models are being made, in the couree of the next two or three months—provided our mining industry can afford to contribute the means for employing eeveral model makers for that length of time—Mr. Kuetel ie ready to deliver, in connection with the technological and special class lecturee of the Mechanice' Art College now heing provided for under the auspicee of the University, a course of practical demonetrations and lecturee extending over the whole ground indicated; lecturee from which eomething of practical operatione may he actually learned.

Ie there enough money or intelligence aeeociated with the mining industriee of California and Nevada, of Idaho and Utah, and Colorado, to raise a few thoueand dollara for the making of euch models? Especially, when the eame will be returned to ue and placed permanently in the University Museum, for eimilar illustrative lectures hereafter.

A meeting will shortly be held by the Chamher of Commerce, the Mechanics' Institute and the Immigration Society jointly, with repreeentativee, perhaps, of mining etocke, and other industries, when thia matter will be considered. In the meantime if there ia any living reeponee to be looked for from the quarters indicated, let it be expreesed decisively to the editor of this journal, or the President of the Mechanice' Inatitnte.

Boilers ann Boiler Making.—The extreme price of coal in England has etimulated scientific men to atudy the hest mode of iteeconomical application to manufacturing, naval, and mechanical purposes. We see that Mr. N. P. Burgh, the well-known marine engineer, ie ieauing a work on thia suhject, in which he waa aasisted by many engineers. The book ia illustrated and the London *Mining Journal* in apeaking of ita merita saya: "it hae heen received well by the ecientific and eeafaring public, hut it deeerveapopular eupport in the wideet eenee of the term.

Almond Culture.

We hava received eome fine specimene of the true Languedoc almoud, grown by Mr. B. D. T. Clough, of Washington, near Nilee Station, Alameda County.

Wc were aleo favored with a small branch from one of hie treee, full of leaves and almonde, of which we preeeut an engraving in miniature and which ie a good representation of the original, except that we could not find room for half the almonds—ae compared with the leavee—that grew upon the branch.

It wae early foreseen by the growere of the almond, that its commercial value would increase with the growth and exteneion of commercc and civilization, and the attempt to improve its quality has been thc aim of culturists for more than four centuriee. The result of theee persietent attempts at improvement, finally culminated in the "Prince'a Premium," of Languedoc, France, ae a variety unexcelled.

Mode of Culture.

Mr. C's method of culture differe bnt little from the usual routine adopted by others in

THE LANGUEDOC ALMOND.

the growing of etone fruite. The stones of the peach ae well as the almonds themselvee are planted in epring and cultivated in nnreery rowe the firet year. The almond ie grown ae we have intimated on both peach and almond etocks. Early in September the eeedlinge attain sufficient eize and are budded with the true Languedoc or other deeired variety. The following epring they are headed down to the bud, and allowed to grow one seaeon more unremoved.

They are then ready for transplanting in early fall, winter or epring as the eeaaon may prove most propitious, and if a good growth has been made, they will be from three to eeven feet high. They are then eet in orchard form in well prepared ground at thc rate of 150 trees to the acre or 16½ feet apart. The ground ie kept thoroughly cultivated, and almost any hoed crop except aquashea can he grown between the rowe at some dietance from the treea without injury.

The tree requires but little pruning or trimming for four or five yeare; but when it ceases to make a etrong lateral growth of limba, heading or cntting back to promote a new growth, will increaee the product ae well ae the eize and value of the almond.

Apparatus for Mixing Wheat with Bluestone.

We give herewith an illustration of a new and very convenient device for mixing bluetone (sulphate of copper) with wheat, preparatory to eowing. Referring to the engraving, the lower part of the device consieta of a box or hopper, made V-ehaped, with one side elongated for the purpose of more conveniently receiving a epout, which stands at a proper angle for operating a ecrew elevator.

The upper end of this epout ie closed and a shaft operated by a crank, paeing longitudinally through it, with a wide flange secured spirally around it, and extending down into the hopper as shown. A crank attached to the upper end eerves to work it eo ae to cause it to elevate whatever ie placed in the hopper. Midway hetweeu the middle and upper end a slot is made in the bottom of the spout covered with a perforated ecreen. To use the mixer thc hluestone, or sulphate of copper eolution is poured into the hopper and the wheat placed in

BEST'S BLUESTONE MIXER.

the solntion. The ehaft ie then revolved and by meane of the spiral flange stire up the wheat and elevatee it. During ite progrese up the epout the wheat partly draws off the eolution, hut in paeing over the ecreen, ae deecrihed, the water drains off through the slot, whence it may he carried back to the hopper by a conducting epout. The device is simple and inexpeneive. It hae been recently patented, through the Scientific Press Patent Aoency, hy Mr. Daniel Best, of Marysville, the well-known patentee of Best'e Separator.

Thanksgiving.

Before another number of the Press will have reached its patrons, that time honored day, hallowed hy eecred memoriee of the paet, and gushing with the pleasuree incident to the re-union of kindred and happy household, will have come and gone. We hope our readere all feel that they have canee for congratulatione among themselvee and thanksgivings to God for hia mercies and hleeeings.

It always eeeme peculiarly appropriate that our people, whose garnere are welling over with the bountiea of hia varied providence, should feel at heart, a true gratitude to the Great Giver. May the day therefore, appointed by the Preeident of the United Statea aud the Governor of California, as a day of happy feaating and thanksgiving, be everywhere observed throughout the State and Nation.

Cuatom has also made it, and our Governor hae indorsed it, ae a day of "innocent recreatione;" which we conetrue as meaning eepecially home pleasuree and rational amuaements; and whilst the aheent onee return and old friendshipe are renewed, the young made more joyoua and the old made young again, and all are made happy, and while mirth and becoming revelry are heard in all the land—may we never forget that it is eminently a day on which our charitiee ehould roll forth ae a great wave, encompaesing the poor and unfortunato, the widow and the fatherleee, till their hearts are made glad by our ahundant bounty. We wieh our patrons a joyous thankegiving.

An Improved Blow-pipe.

Of all the varied implemente of the laboratory the hlow-pipe ie of the utmoet importance to the chemist, in enabling him to aecertain quickly the effects of iutense heat upon a variety of eubetancee. It is, in fact, a most important auxiliary in all casee of qualitative analyeie, and an invaluable instrument for the mining engineer, the mineralogist and the geologist. There are a number of different forme of thie instrument, eimple as it is, the variationa being principally iu the mouth-piece, point, or receptacle for the saliva. The one here shown, which ie the idea of Mr. A. T. Dozier, of Oakland, overcomee eome of the objections to those of the ordinary deecriptione. Ae it is a metter of interest to aeeayere, etc., to know of any improvement in an implement of such general use we have prepared a emall cut which ie plain enough to need no description. Thoee who have ever used blow-pipes at

all will at once eee the advantage in the manner in which the ealiva ie prevented from going to the point, and the instrnment can be inverted and the moisture poured off. A blow-pipe of thie kind will coet no more, prohahly, than those in common nee, while it ie much more conveuient.

The American Institute of Mining Engineers.

The Octoher meetings of thie association. held at Pittshurgh, Pennsylvania, appear to have heen very euccessful. The proceedinge, now in couree of puhlication in the *Engineering and Mining Journal* compriee, together with much interesting information concerning the mining and metallurgical industriee of the East, particularly those of coal, iron and eteel, a good deal about the reeources of the West. We notice, for instance, a paper by Mr. R. Neilson Clark, of Cañon City, Colorado, on the Tertiary coal hasin of that region, recently opened up by the Denver aud Rio Grande Railroad. Thie was followed hy a lively diecuesion on Weetern coals, coke, charcoal and iron oree. The Preeident, Mr. Raymond, read a paper on the eegregation of gold in the hearth of a reverberatory furnace, and Mr. A. Eilere preaentod specimens of the telluride of gold and ailver, eimilar to that which occure at the Stanielaua mine, in Calaveraa County, Cal., diacovered in coneiderable quantity thie summer in Boulder County, Colorado.

Tho membership of the Institute, ie eteadily increaeing. Thirty new memhere and aaaociatea were elected at Pitteburgh, nearly half of them, we are glad to eee, heing mining engineers and metallurgiate of the Pacific elope. We truet these gentlemen will actively maintain the credit of their eection of country and not permit Eastern iron, eteel, coal and coke to have too great a ehare in the proceedinge, but give ns their viewe on aubjecta connected with the mining and metallurgy of the precioue metala.

CORRESPONDENCE.

Tintic Mining District, Utah.

EDITORS PRESS:—Ae your correspondent has heen sojourning for the past tbree months in Tintic Mining dietrict, Utab, and time hanging beavily, somewhat, upon his hands, makes bold to give you a few items relative to a district, which is commencing to attract the attention of prominent capitalists, from London, Pittsburg, Pa., Chicago and San Francisco, who have expressed their opinion by their heavy investments.

Tiutic mining district was first laid out December 13th, 1870, embracing an area of 150 square miles, contains four small hut flourishing towns, of about 1,500 inhabitante, located at a distance of three miles from each otber, and known ae Homansville, Eureka City, Silver City and Diamond City. Each town has a Poet Office and etage connection three times a week witb all parts of the Territory.

The mineral helt lies in a range of hills just west of the Wasatch, and hetween Rush Valley on the north and San Pete Valley, with the desert on the weet.

But little genuine prospecting for the precions metals was done until July of the present year, at which time, owing to the looseness of then District mining lawe, our Gentile minere met together and framed tbe present lawe, by wbich tbis District is now governed, giving proper and legal protection to the "Honest Miner." Since wbich time our District has undergone a severe prospectiug, with gratifying resnlts. Gold, silver and copper is fouud in large deposite in most all parts of the District.

Wood and water, witb one exception, is abundant in all localitiee. Silver City, eituated on the eaet side of Tintic Valley, although surrounded with wood, is wanting in water, tbat being only procured from its sister towns, Eureka and Diamond, from whicb places it is brought and eold for three cents per gallon. Of

The Mines,

I will mention a few of the most prominent and promising onee, deferring a deecription and extended notice of tbem for my next communication. In the vicinity of Eureka, we have the Wyoming, Eureka Consolidated, Cornucopia, and a numher of very promising, but undeveloped ones. Near Silver, the Mammoth Copperopolis, (the leading mine of the District); Mammoth Crisman; Swausea; Black Dragon; Sunbeam; Chicago; North Star; Cerro Gordo; Cearesa; Diamond; Ruby; Julia; Grant; Portland and Mary Ellen tunnels.

At Diamond, I mention the Julia Lane, Rising Sun; Shower (hae a good Smelter); Jefferson; Undine; Morning Glory; Golden Treasure; Norwegian; Washington; Joe Bowers and Susan. Our

Mills,

Of which there are two in the couree of erection, belong to the Wyoming Company, and tbe Eureka Consolidated Company's will be finished and ready for work in about six weeke. There will he a mill erected hy Gen. Miller and Bros. of your city, near Diamond, tbis Fall; they having purchaeed a water privilege for the sum of $3,000. Tbe Pioche Company have broken ground near a place called Tannier's Ranch, and intend to erect a small affair, and use A. B. Paul's process for reducing the ores.

The climate of our District will admit of work heing carried on throughout the year, without any interruption whatever. In my next I will mention the workings and prospects of the most promising mines of this District.

C. F. J.

Copper Smelting.

We had the pleasnre of a call thie moruing from Dr. Trippel, a very experienced and capable metallurgist and engineer, who visite Utah to perform professional work. The Doctor is a specialist in the treatment of copper ores, and is eanguine tbat he can smelt them here at a profit, and extract hy a well-known process, all the precioue metals. He informe us that he has no douht the bituminous coal whicb ie fonnd in the Territory may be readily used, not only in emelting copper ores, but in smelting argentiferoue galena, by adopting a system, now coming into general nse in Pittshurg. If we underetand the Doctor rightly, he proposes to pulverize the coal and inject it into the furnace through tuyers, by means of a hlast. The combustiou of tbe coal ie rapid and tbe heat evolved is intense enough to emelt ordinary ores. An experiment of thie kind would not he very expensive, and might be attempted with good reeults at a small expenee. Dr. Trippel has conetructed eeveral of the beet known aud snceeesful copper emelting worke in tbe United Statee, and we hope he may find sufficient inducements here to induce bim to erect a smelter of the kind in the Territory. We believe tbat the production of copper oree from lodes already discovered wonld justify an enterprise of the kind. Sooner or later the project will he carried out, as well as the eetabliebment of zinc and lead worke, and every mineral resource of the country will he developed and made profitahle.—*Utah Mining Journal.*

Notes on the Management of Mining Companies.

BY H. A. THOMPSON, M. E., OF MELBOURNE.

Few persons who bave given any attention to the progress of mining in this colony hut must have felt surprise, that in a country so rich in gold, holding out such great prizes to the mining adventurer, and where individual miners have been so fortunate, such disastrous results have so often followed the investment of capital by joint stock companies in this pursuit, and the poor returns obtained in proportion to the amount invested. Judging from the success attending mining speculations in countries the value of whose mineral resources are not to be compared witb those of Victoria, this sbould not be so; and the question—what can be the cause of the unsatisfactory condition of this hranch of mining—naturally presents itself for solution.

This is a matter of so mucb importance—hoth to those directly connected witb tbe mining interest and to the colony generally, as affecting the development of our mines tbrough the investment of the capital becoming daily more necessary for this purpose—that it must be well wortby of the attentive consideration of thiuking men.

The following remarks, although more or less applicable to all parts of the colony, have especial reference to tbe companies having their boards of management in Melbourne, where the evil ia certainly the greatest, and the proposed remedy most easily applied. Looking back on

The History of the Mining Companies

Which have heen broken up, and many of them branded as buhble schemes, few, if any, will he found, where a large proportiou of the expenditure would never have been incurred under a good aystem of management; and some of them abandoned prematurely, through tbe disappointment of the highly-raised expectations of the shareholders, bave already heen, or will yet be, proved valuable mines. Mining is no douht a speculative husiness, and those who enter on it must calculate on having a certain proportion of failures, which may he greater or less in number, according to the caution, experieuce and judgment of those engaged. But because chance must he an element to be taken into account in mining adventures, surely the increased risk ought to induce increased caution—not the throwing aside of tbe precautions whicb are looked on as indispensable to success in every other description of business. Yet this has been the course puraued by the majority of the companies whicb bave been abandoned with heavy loss to the unfortunate sbareholders, and hy some othera where tbe richnesa of the quartz euables them to pay large dividends, in spite of mismangement.

The hest and most careful management cannot ensure success, or make a mine pay which does not contain sufficient gold; but, by the introduction of good systems of working, it can make the minimum amount of gold pay the costa, and guard against the expenditure of more money than is absolutly necessary to prove the value of the mine. Let those who bave lost in mining adventures look into the proceedings of tbe companies they were engaged in, and say how many have either heen ruined, or have expended large sums unnecessarily, solely through mismanagement—how many thousands of pounds have heen thrown away in the erection of reducing worka hefore anything was found to reduce—or the prosecution of expensive mining operations wbere no discoveries had been made to warrant tbem. There are few parties who cannot recall numerous examples bearing out the above assertions, and many appear to tbink that this unsatisfactory state of affairs is inseparable from mining. The object of this paper is to sbow that such is not the case, and that if the same principles were applied to mining companies as are considered indepensahle to the successful prosecution of any other description of business mucb of the uncertainty and loss now attending those adventures might he avoided.

A Comparison of the Method Followed

In the forming and management of other companies with that commonly pursued in connection with mining companies may be of some use in elucidating the subject. Take the course adopted in formiug a hanking, insurance, gas, navigation, railway, or manufacturing company.

The estimates of the outlay required and tbe returns that may be expected are carefnlly prepared, the hest professional assistance available is called in to advise with tbe direotors, all tbe details of tbe work are reviewed, the plsn of operations is carefully laid down, and the services of the best men are secured to take the management, under tbe supervision of the hoard of directors. Unless these precautions were supposed to be attended to, the companies would hold a low place in puhlic estimatiou, and there would he little chances of tbe shares heing taken up. Yet tbe business in all the above cases is such as to come within tbe cognizance of mercsntile men than is the case witb mining, and therefore some of tbe precautions mentioned might he neglected with less chance of injury in the former instance than in the latter.

The mining companies of Melbourne may be divided into two classes—those formed on the gold fields (the msjority of whose sbares having hy degrees fallen into the hands of shareholdera residing in Melbourne the management bas heen removed there); and the companies formed in Melbourne, either for the purpose of opeuing new ground or developing imperfectly-worked mines, hrought to a stand through mismansgement or want of capital. In the first case, the preliminary work of opening and proving tbe mine has usually heen effected by a local hoard, and tbe results obtained in the first working have induced the cbange of proprietary, so that tbe Melbourne board has only to attend to the steady prosecution of the mining operations on tbe hest system. In the second case, the hoard bave a still more difficult task to perform—to carry out an investigation into the value and prospecta of the mine, the best plan of testing it, and to consider tbe amount tbey may have to expend for tbia purpose.

Tbe following are some of the points they would bave to take into consideration:—giving to each ita due importance only, in hringing the information obtained to bear on the question to be decided. The local peculiaritiea of the quartz veins and gold deposits of tbe district, for these differ in different localities, even when in the same geological formation, and the deductions correct in one place may only mislead in anotber: the cbaracter of the adjoining mines, including the strike and dip of the veins, the form in which the gold is deposited in them—wbetber in parallel bands, irregular branches, or evenly distributed through tbe quartz; the quantity of water to be overcome, the depth at which the veins must be opened to prove the ground, etc.: the portion of the mine already opened, if any, and the results obtained from it: tbe beat plan of further proving the grouud, so that the exploration made may come in for tbe future working of the mine in the most efficient and economical way: and last, an estimate of tbe cost, and a decision from all the information collected whetber the chances of success warranted the expenditure reqnired to make an effectual trial or not. Presuming that it does, a further portion of the work has to he undertaken.

From the data obtained by means of tbe observations mentioned ahove, the point at which the veins are most likely to bear paying gold has to he decidcd on—the way of reaching tbis point laid down; then follows the close watching and recording of every minute detail in the character of tbe ground opened, to guide the future working, and the decision as to when a sufficient extent has heen explored to allow of the erection of reducing machinery with the greatest ultimate certainty of obtaining a return. After this comes the laying out, choice, and the erection of the crushing-plant—requiring a knowledge of the differeut plans now in use for crushing qnartz and extracting the gold—tbeir effectiveness and applicahility to the various forms in wbich the gold is deposited.

Importance of Judgment in Preliminary Work.

It must be evident tbat this preliminary work requires some judgment and experience in tbose wbo direct it, and a knowledge of mining in all its branches aucb as cannot be expected to be possessed by any person wbo has studied it as a profession, wbile the necessity for proceeding in this systematio and cautious way can bardly he gainsaid. Yet how few companies do tbia, or appear to tbink it necessary. The promoters usually put forward the bright side of the picture,—much is said of the large yields which have been obtained from the mines or the claims adjoining it, wbile the unfavorable eide of the question and the difficulties to he overcome are kept in the background. Althougb tbis looking at one side only may arise more from tbe sanguine temperament of the promoters than from any deliherate intention to mislead, tbe effect ia still the same. Imbued witb similar ideas, tbe directora of the company are induced to rnsb into unwarranted expenditure,—tbe capital is laid out on expensive and irregular scbemes for opening tbe mine and erecting crnshing-plants, before it is known wbether there is really a mine to open or material for the machinery to operate on or not.

The large outlay, and the failure to realize at onee tbe golden prospects held out, too often disgusts the sharebolders, and induces tbem to ahandon the mine without sucb a tborough trial as should have heen msde before the greater part of this expenditure was incurred. Mrs. Glass's homely advice, to "first catch your hare, and then make preparations to cook it," is especially applicable to quartz mining in Victoria.

This enumeration of a part of the duties to be performed in estahlishing a mining company is necessarily imperfect (for seldom will two mines be found of exactly the same character), incomplete as it is, however, it will show tbe impossibility of a board of directors, unacquainted with practical mining, satisfactorily carrying them out hy the mining manager, wbatever may be the acquirements of these directors as men of business. In consequence tbey bave to place tbemselves in the hands of tbe resident manager, and promoters, relying entirely on tbeir skill and judgment, and how often this reliance is miaplaced can best be told hy those wbo bave heen induced to throw away the tbousands of ponnds that are yearly spent unnecessarily and recklessly.

The Mine in Full Work.

We may now consider tbis question, where the mine is in full and perhaps profitable work, mentioning tbe leading principles hy which the management ought to be guided. The directors bave to see tbat tbe plan of opening, and the system of working the mine are such as to allow of the gold-hearing material being taken out in the ahortest possible time, and at the least cost, that tbe contracts let are at fair prices, or the wages men employed do a fair amount of work. All these details have to he checked, at the same time the mining manager should not he so interfered with as to fetter his free action. The majority of our mines do not leave a large margin of profit, and witb many of them the question whether they will gain or lose depends on the good or bad system of working adopted. The mining pay hills will have to be made out in such a form as to ahow at a glance how the men are distrihuted, the cost of the work in each part of tbe mine, the state of each of the contract accounts, in short afford full information of the work done, the sums paid and the amounts still due. There is no difficulty in doing this, the Englisb form of pay bill modified to suit our requirements, taking little more labor to make out tban that ordinarily aupplied.

Anotber matter much neglected is the keeping of proper mining plans and records; these may be simple rough plans and sections, correctly laid down, hut without the elaborate finisb given by the professional draftsman, which would occupy more time than it ia worth, aa it does not add anything to ita practical value. The plans should be filled up every time the mining work is measured off, and full details of the character of the ground opened should be entered on tbe record book. Too much stress cannot he laid on the necessity for attending to this point, as the ground worked is often aoon closed up, and without it the company will be entirely dedendent upon tbe memory of the manager, when information is required as to the character of the old ground; to throw light on obscure change, such as the loss of the vein from break or fault, or for any otber purpose. It is only by the aid of plans tbat it is possible to readily calculate the amount of quartz prepared for hlocking ont, to decide when it may be advisable to open new ground, to draw reliable deductions as to the pecnliar character of the vein or gold deposit, or for the directors to understand the position of the mining works. They are in fact just as necessary to the manager of a mine as tbe plans of a house or hridge are to the architect or engineer, and the man who professes he can conduct a mine without being competent to perform this simple work, is certainly undeserving of confidence. The liability to change of managers is alone aufficient to show the benefit which may he derived from well kept records, irrespective of the help they give to memory.

[To be continued.]

THE MARE ISLAND NAVY YARD grounds consist of 900 acres, and originally cost tbe Government $83,491. There are 192 acres in the New York Navy Yard, which cost $325,000.

SCIENTIFIC PROGRESS.

Is Electricity Generated by Water Currents?

Zöllaer has ascribed the production of the electric currents of the earth to the incandescent molten massea in motion beneath the crust which generates currents in the direction of their own motion; and he has expressed the opinion that all current movements of fluids, especially when in contact with solid bodies, are to some extent accompanied with currents of electricity that have the same direction as the fluids themselves. He inserted the ends of the copper wires of a very delicate galvanometer, of Sauerwald, just within the wall of a caoutchouc tabe conveyiug a stream of water, and observed a deflection of several degrees of the galvanomster scale, thereby indicatiug the existence of an electrical current, whose direction is that of the water. Tho greater the distance between the ends of tho wires—which, by the way, need not be exposed to the force of the current, hut may be replaced by metallic plates lying against the wall of the tube—the stronger the deflection of the needle.

While recently repeatiag Zöllner's experiments, Beetz obtained similar results, but found that the currents have a much simpler origia. The needle is deflected so long as the reservoir in which the water falls is not isolated. The metal tap, the stream of water, and the reservoir, in fact, form a voltaic element (brass, water, lead) whose current it is which deflects the needle. By filling the reservoir, and dipping the free ead of the tube, also filled, into it, the current is observed though the water he shut off, nor does any change take place when the tap is open. By simply inverting the position of the tube, the direction of the current is reversed; this is observed to be the case with or without a flow of water. If the reservoir be isolated, no current is formed; this is so whether tho water bo allowed to flow or not. When tap snd reservoir are of zinc, no current is produced with or without a flow of water, and with or without isolation of the reservoir. According to Beetz's observations, then, no electricity is generated by a stream of water.

Sea-Serpents. — Regarding "sea-serpents," the following note may be interesting as explanatory of some of the descriptions which have been given from time to time of "Sea-Serpents:"—The South African Museum, Cape Town, recently received a specimen of the Ribbon fish (*Gymnoterus*) fifteen feet long without the tail. It appears that this fish is kaown to distant inland fisherman as beiag forty feet long, and from its slender shape and snake-like movement is probably the "sea-serpent" of lato years so minutely described by navigators. From its bead there is erected a plume of rose-colored spinss, aad from head to tail along its back there is a conspicuous mane-like fin. Its general color is like burnished silver. The eye is large and silvery, and the profile of the head comports well with that of tbe horse. The specimen could not be preserved, but there are two smaller specimens in the Museum.

Water Freezing Below 32° Fah.—It is generally admitted that water congeals at 0° Centigrade or 32° Fahrenheit, and that it is only in perfectly tranquil places that it can be kept liquid even at a certain number of degrees below the freezing point. *Les Mondes* mentions in this connection a curious fact, which it considers due to a supersaturation, so to speak, of the water. If in water, at a temperature of —3° C. (about 27° Fah.), which may even be slightly agitated without congealing, the least particle of hoar frost or ice be introduced, crystals of ice instantly form and expand through the mass, producing remarkable and beautiful effects. Tho eye can watch the formation of the needloe of ice, ece them group together and obey thoae myeteious affinitiee which produce the exquisite forms with which we are all familiar.

Water not an Electrolyte.—The hooke have long taught that the object of adding an acid, in the electrolyeis of water, is to render it a conductor. The fact that compound substances when decomposable conduct only by electrolysie, and hence, that a body not an electrolyte cannot be made eo by the addition of another body, hae long rendered it probablo that it ie the acid which ie actually decompoeed by the current, and that the water suffers decomposition only by a eecondary action. Bourgoin has investigated the subject experimentally, and has proved that water is not iteelf an electrolyte.

Transparency of Mountain Air.—Astronomical observations ehould be made from high elevations. Prof. Young reports the whole number of lines in the chromoephere of the sun, seen from Sherman, a lofty station on the Rocky Mountains, as 150, which is three times as great a number ae have been observed from near the eea level. In these localities the atmosphere is clearer, eteadier, and it is owing to this fact that a etar has been recognized at these altitudes as having a companion or being a double star, not previously known as such.

Formation of Sandstone.

We find in the *Revue Scientifique* a paper presented to the Geological Institute at Vienna by M. Fuchs, on tho manner in which sandstone must have been formed. It is well known that what tho French call *gres*, and we "grit," is a rock composed of siliceous grsins agglomcrated into a mass, possessing more or less teaacity. Now the cement which binds them together is not always of the same kind. The question examined by M. Fuchs is, whether the consolidation of the agglutinated mass was effected immediately, or whether it was the work of time? To justify this iuqniry he quotes two cases. On tho natural jetty which encircles the port of Messina on the side of the straits there are large slabs of sandstone, with their edge rounded off, and having diameters varyiug between twelve and eighteen feet, with a thickness of ten or twelve inches. They aro buried under sand audshingle, and are unconnected with each other.

Thus also recent excavations on the shore adjoining tho sume port, have brought to light, after a depth of 9 feet of pebble and sand and a bed of gray mari, a solid conglomcrate filled with sea shells of tho same kind as those still living in the surrounding waters. Their state of perfect preservation shows that they mnst have been immediately imbedded in a soft sandy mud; otherwise they would have been exposed to destruction. The rapid solidification of the sand M. Fuchs attributes to the incrusting agency of certain algæ. The *Codium bursa*, the *Palmophyllum flabillatum*, and others are known to agglntinate shells and pebbles so as to form masses of the size of a man's fist; whence there is reason to conclude they may make larger agglomerations, such as those on the coast of Messina. The other example adduced by M. Fuchs is a sandstone with crystalline grain, ia plentiful at Siervring, near Vienna. Here the agglutiuatiou has been slow, and is owing to the infiltration of water charged with carbonate of lime. Evideutly the solidification of snch a mass required a long time, and sandstone may therefore be considered as belonging to different formations.

Action of Magnetism on Molten Steel.—Two cylindrical molds, exactly similar were filled with cast steel. Oue of these molds was surrounded by a Ruhmkorf coil, through which was passed a current from a 12 element Bunsen battery, during the whole time that the metal was cooling. The other casting was allowed to cool gradually in the ordinary manner. At the end of ten hours the molds were broken; the two steel cylindere were removed, and were broken into several pieces, iu order that their structures might be examined. It was found that the grain of the metal presented different appearances in the two cylinders. In that one submitted to magnetic action during the time of cooling down—a period when the molecules could most easily arrange themselves—the grain was visibly finer. This experiment, repeated threo times, resulted in precisely similar effects. M. Chedeville afterward made some comparative experiments on the resisting power to extension and compression, and found that the magnetized steel offered less resistance in every case than the other.

Germination of Seens.--Late experiments appear to establish the fact that while exclusion from the luminous rays of the solar spectrum is necessary to the healthy germination of seeds, yet the chemical or actinic rays are indispensable to that process. These penetrate deeper into the soil than do the luminous rays. The exclusion of the chemical rays and not the abaence of oxygen alone is assuaed to be the cause of seeds failing to grow when buried too deeply in the earth.—*Prof. Joy.*

Heat from Impact of Bullets.—According to J. Bollynski, who criticizes Hagenbach's experiments on this subject, the motion of the leaden bullet, if all converted into heat, would be three timee the amount sufficient to melt the amount of lead found to be melted by actual experiment, which he explains, as having been actually expended in denting the iron plates used. By using a hard stone target, he was able to melt all the lead hy firing the bullets against it.

A Liberal Scientist.—Mr. J. B. Laws, the eminent agricultural experimentist, of England, has, with most princely munificence not only donated his laboratory to the public, bnt has also accompanied the donation by the further large gift in cost of $500,000. The example is a noble one, and bestowed in a direction where it was much needed—in furthering the great interest of experimental agricultnre.

Cadium, Tin and Lead.—A remarkable coincidence, between cadium, tin and lead, hae been noticed by Dr. Schenk, in that the same total quantity of chloric is required to bring an equivolent of either body from a temperature of —273° C., which is assumed as that of absolute absence of heat, to a state of fueion.

Violet Light on Vegetation.—M. Baudrimont obtaine results the reverse of M. Poey, and affirms that all the oolore without exception are unfavorable to vegetation, and none more eo than violet. All plants lighted by it died first; after violet tbe most unfavorable wae green. Blue, optically situated between them did not give so fatal results.—*Les Mondes.*

Antiseptic Properties and Physiological Action of Silicate of Soda (Water Glass).—MM. Rabuteau and Papillon have called the atteation of the French Academy to the influence of the silicate of soda on alcoholic fermentation, that of urine, milk, and the action which gives rise to the essence of bitter almonds. Silicate of soda, like borax, in a certain quaatity hinders all manifestation of the agents which produce putrefaction; while, heing much more energetic than borax, a smaller amount ie required to produce the desired effect. On the superior animals, the silicate exercises a poisonous action much more pronouaced than that of borax. Two grammes of borax will not kill a dog; one gramme of silicate carries sure death The substance, in brief, from its nature is of peculiar value in suppressing the development, of the infectious or virulent germs to which a large number of diseases may he traced.

The use of red light iu photography has been found to hasten impressions and increase their sharpness. A diaphragm of thin translucent reddened paper in place of the ordinary metallic diaphragm in the camera has been tried with great success.

Tunosten in Steel.—Professor Herren bas found 8 3 per cent. tuagsten and 1·73 manganese in Mushet's steel. This steel becomes soft when heated and suddenly cooled, and hard when cooled slowly, just the reverse of ordinary steel.

Animal Fats.—Mene has stated to the *Academy of Sciences* that at different ages of life, the same animal species have fats dissimilar in melting and solidifyiug points, and in density. Also that the meltiag and solidifying points rise with age, and the density of the fat increases.

MECHANICAL PROGRESS.

Experiment in the Structure of Iron.

In some recent experiments made in France, intoresting information has been made known in regard to crystalline structure in wrought iron. The apparatns consisted in a bent axle, whicb was firmly fixed up to the elbow in timber, and which was subjected to torsion or twist, hy means of a cog whsel connected at the end of the horizontal part. At each turn the angle of torsion was 24°, and a shock was produced each time that the bar left one tooth to be raised hy the next. Seven axles were submitted to the trial. In the first the movement lasted one hour, 10,800 revolutions and 32,400 shocks being produced; the axle, 2 6-10 inches diameter, was taken from the machine and broken by a hydraulic press; but no change in its texture occurred. In the second a new axle haviag heen tried fonr hours sustained 129,000 torsions, and was afterward broken by means of a hydraulic press; no alteration was preceptible to the naked eye, bnt, tried by a microscope, the fibers appeared without adhesion, like a bundle of needles. A third axle was subjected during 12 hours to 338,000 torsions, and broken in two; a change in its texture and an increased size in the grain of the iron were observed by the naked eye. In the fourth also, the axle was broken in many places affer 110 hours and 2,553,000 torsions. In the fifth, an axle submitted to 23,328,000 torsions, during 720 hours, was completely changed in its texture. In the sixth, after ten months, during which the axle was submitted to 78,735,000 torsions and shocks, fracture produced by a hydraulic press showed clearly an absolute transformation, the surface of the rupture being scaly like pewter. The seventh axle, submitted to 127,304,900 torsions, presented a surface of rupture like that of the sixth, the crystals wore found to be perfectly well-defined, the iron having lost every appearance of wrought iron.

Improvements in the Arts of Metallurgy.—It is well known that the difficulty of uniting iron to brass is created by the unequal rate of expansion in the two metals, which destroys the uaity whon the temperature ie changed. To meet this difficulty, an alloy has been invented, by an Englieh artiean, the expansion of which, by heat, is claimed to be so similar to that of iron and steel, that the surface may he regarded, when joined, as permanently united for all practical purposee. It consiste of three parte tin, thirty-nine and a half parts copper, seven and a half parts zinc.

The construction of bronzee hae lately been much improved by the addition of a small amount of phosphorous. A special cause of the inferiority in bronze consiste in the constant presence of traces of tin in the state of an oxide, which acts mechanically by separating the moleculee of tbe composition, thus interposing a substance which in iteelf has no tenacity. Now, the addition of phoephorons is found to redace this oxide, and renders the bronze much more perfect—improving its color, its tenacity, and its physical properties. Thue treated, the grain of the bronze when fractured resemblee more that of steel, its elasticity is much augmented, and ite resistance to pressure sometimes more than doubled.

New Material for Brick.—The shale which constitutes so large a portion of the refnse of coal mines has been found in England to furnish a good material for brick. Those made from it are hard and durable, and for ordinary building are found to be quite equal to ordinary red brick.

Steel Boilers in England.—It is said that Mr. Webb, of the Crewe works, England, is adopting steel exclusively for the construction of boiler shells, the rivets being also of steel, and he stated that he hopes ultimately to be able to employ the same material for fire-boxes and tubes, to the exclusion of copper and brass. The boiler plates used are all made on the works, and a sample is cut from every plate and tested. The plates are required to have a breaking strength of thirty-four tons per square inch, with an elongation of twenty-five per cent., and a five-eighth inch hole punched in the sample strip, about two and one-half inches wide, has to stnad being drifted ont two iaches in diameter without the plate cracking. The present practice at Crewe affords ample evidence that, by proper care, it is possible to produce a material which, for boiler making purposes, is vastly superior to the very best wroaght iron obtainable.

Compressed Steel.—The extraordinary powers of resistance of the steel, compressed by hydraulic pressure, of which the new Whitworth gun is composed has been proved by one of the experiments made at the recent trial of the weapon. A cylinder representing the chamber of a nine-pounder gun was loaded with one and a half pounds of powder, and being screwed up at the shotted end, was fired through a touch-hole only one-tenth of an inch in diameter. The cylinder did not burst hut the whole charge hissed through the touch-hole leaving the chamber nninjnred. This hydraulically compressed steel furnishes a metal of the greatest value, since, by nsing it, guns can be constructed which will combine a lightness and power hitherto unattainable.

Wolfram Steel is becoming an important article of iron manufacture. It is quite largely produced at several large establishments in England and Germany, and is also being manufactured in the Atlantic States. The qualities of this steel are very remarkable. When annealed it is so hard that it will stand the best file, but when chilled it becomes soft, when ordinary steel wonld be hardened. When chilled it gets covered with cracks, but it may be very well hammered when at a red heat. But any tools must be made at once with the hammer in their iatended shape, as the file will do notbing more to it. Tools of wolfram steel, planing machines, for instsnce, are said to last much longer than if made of ths best Sheffield cast steel.

Tempering Steel.—P. McCormick, of Newark, N. J., states that he has been engsged iu working steel for the past 30 years, and finds, in new processes, always the same story of "imparting extraordiuary hardness and durability to the poorest quality of steel;" and he says that all external working of steel, after the forgiug is done, has but one effect, namely, that the outer portion cools and contracts first, and so impresses and compacts the interior, that, when a piece is broken, it shows a closer granular appearance after dipping, hut will often be so brittle as to break with a slight blow. And if annealed to its previous condition, it is no hetter than at first.

High Pumping.—At Triumph, Pa., water has to be lifted from the Alleghany River to the summit of Triumph Hill, a vertical height of 685 feet. The horizontal distance is two and three-qnarter miles. The pressnre per square inch in the water cylinders of the steam pumps is 700 pounds. Three pumps are used, each lifting 200,000 gallons every 24 hours. The steam pumps have a piston stroke of 18 inches; the diameters of the steam and water cylinders are respectively 20 inches and 60 inches. The pressure above mentioned in the water cylinder closely approaches that ordinarily employed in the cylinders of hydraulic presses.

The Largest Steam Hammer.—Preparations are being made at the Woolwich Arsenal for the erection of the 30 ton Nasmyth steam hammer, the largest ever conetructed. It will be able to strike a blow equal to the weight of about 800 *tons*, and the bed for the anvil has therefore to be of enormous strength. Au excavation 45 feet square and 20 feet deep has been made, then piles, about 100 in nnmber, driven into the solid gravel about 20 feet and the interstices filled up with concrete; on these was placed a block of iron 30 feet broad and 11 inches thick, weighing 160 tone.

Binary or Bisulphide of Carbon Engines. Mr. Cortise, the famous engine buildcr, Providence, R. I., writes to the *Scientific American* that he has become so much interested in the success of this binary engine that he ie about to undertake a comparative test of the new invention on a large scale, for the express purpoee of determining its economy, if any, over the best forme of the steam engine. We shall look for the reports of the result with great interest.

White Brass.—A new metallic compound has been invented which is called white brass. It ie susceptible of bigh polieh and at the same time it fuses easily, and has been fonnd by carefully conducted experiments to eurpass in durahility all other anti-friction metals against which it bas been tested—it prevents the heating of journals.

The Stove Business.—The etove msnufactories in Troy, New York, at present number 22. They are turning off an aggregate of 200,000 stovee a year, giving employment to about 2,000 men in different capacitiee, as moulders, mounters and fitters, pattern makers and laborers.

Stock Sales for Week Ending Nov. 21—S. F. Stock & Ex. Board.

NAMES OF COMPANIES.	Cash.	Shs. in ft.	FRIDAY. Shs	Prices.	SATURDAY. Shs	Prices.	MONDAY. Shs	Prices.	TUESDAY. Shs	Prices.	WEDNESD'Y Shs	Prices.	THURSDAY. Shs	Prices.	Tot'l Sh's Sold.	Assm't.	Double Assm't.
Adams Hill	$						115						50	1	265		
Alpha		300	20				150	55 @68	115		40	52½@53	10	52	210		
Alpa		800	37½						200	5	360	5 @ 5½	510	5⅛@ 6	1140		
American Flag	$	2600	11½				150	12½@13			80	12½@13½	20	12¼	250		
Amador Tun	$						175	7½@ 8	200	7 @ 7½					375		
Arkansas	$						300	1	200	1 @ 2	340	1½@ 2			840		
Arizona e Utah	*	1500	1½				95	23@ 3							95		
Belcher	*	1040	10	250	107 @110	390	109 @112	345	105 @110	425	104 @ 107	543	1⅛ @ 109	25	106	1435		4
Baltimore Con	*			200	2½	1.0	2⅛			20	2¼	50	2⅜	25	2⅜	465		⅜
Bowery	$	1000	30			300	1¾									300		
Bacon	$	65	581½									10	65			10		
Buckeye	*			60	1¾	100	1⅜	100	1½			100	1¾			350		
Best & Belcher	*	224	100	30	7			100	7¾	225	7 @ 7½	530	7 @ 7½	170	7 @ 7¼	1055		¼
Bellevue	$	6000	2½															
Belmont	*			100	4½	300	4¼@ 4⅜	270	4¼@ 4⅜	450	4⅝	150	5¼@ 5¼	425	5¼	1725		¾
Chollar	*	1000	10	200	70 @73	565	72 @77	450	73 @73	215	68½@74	360	71 @75	175	76 @73	1888		
Caledonia	*	5000	4	250	30 @31¼	270	30¼@32	80	28 @28½	445	28½@29½	1065	30 @34	310	30½@32	2420		¾
Cons. Virginia	*	1160	20⅜	200	59 @60	555	57½@61½	305	55¼@58	10	57	190	56¾@58	305	57 @57½	1510		2½
Confidence	*	130	192	515	13¾	50	13¾	270	13	335	1.34@13	45	3 @13½	435	12¾@13½	1650		⅛
Crown Point	*	600	166⅔	340	117 @122	555	122 @ 128	325	121 @ 124	350	116 @ 123	100	119 @ 122	355	118 @ 122	2068		
Central	*	70	357															
Calaveras	*	3200	6¾			100	1⅜							30	1½	980		¼
Condor	$			100	1¾	100	1⅝	750	13@ 1⅜									
Columbus	$																	
Chs man	$	700	40	200	1¾	200	1⅝	50	1½	50	1½					320		
Chief of the Hill	*	1000	30	65	6 @ 6½	385	5½@ 6¾	480	5⅝@ 5½	270	5⅝@ 6	125	5⅝@ 6	515	5¾@ 6	2405		⅜
Chief East Ex	$																	
Cederhurg	*	1200	20			160	7½@ 8			50	6	190	6½@ 8	100	7	500		
Con. Gold hill Q	*	1200	37															
Daney	*	2000	10	80	13½@ 14	105	14	50	14					20	1	255		¼
Eureka Cons	*	1000	30	1360	21¾@22½	265	21½@22	345	21½	240	21 @21¾	360	20½@21½	805	20 @21	3376		1¾
Eureka	$	1680	512															
Exchequer	*	400	20			50	19									50		
Eclipse	$	70	357	20	11							60	11	110	10¼@10½	210		½
Empire Mill	*	75	16	105	9¾@ 9¾	165	9¾@10½	50	9¾	110	9¾	150	9⅞			610		
Excelsior	$	4500	2½															
Gould & Curry	*	1200	4	20	200 @205	10		45	205 @210	75	210 @ 220	80	235 @ 240	115	222 @ 242	335	37	
Golden Chariot	*	750	1⅜	120	14¼@15½	160	15 @15½	20	14½	60	14 @14¾			30	14	330		1½
Globe	*	1600	12½	225	1⅝			25	1⅝	25	1¾@ 1⅞	50	1⅝			340		
Hale & Norcross	*			195	92½@94	122	92½@93	315	91 @96	220	87 @90	242	90 @92	60	87 @90	1100		4
Huhn & Hunt	*	3800	8½	230	4⅝@ 4¾	420	4¼@ 4½	190	4 @ 4½	450	3⅜@ 3⅝	190	4 @ 4⅜	1060	4	2480		½
Hermes	$			115	12	250	12	180	12 @13½	970	14 @15⅞	970	14 @15⅞	545	13 @15	2855	3	
Ida Elmore	*	1300	17⅔	110	10½@10⅝									110	10 @10½	220		
Imperial	*	184	543	380	11 @11¼	330	11 @11¾	85	11½	80	10¾@10⅞	10	10¾	410	10⅝@11	1295		¼
Ingomar	$	1000	30	530	1¾@ 2	1300	1¾@ 1⅞	200	1⅝	755	1¾@ 2	6	0 1⅞@ 2¼	50	2	3503		
Independent	$	1800	14					100	25c			100	30c	150	40c	3	0	
Ivanhoe	$	600	5							100	75c	300	1 @ 1½	300	1 @ 1¾	700		
Julia	*	2000	15	375	4¼@ 4½	380	4 @ 4¾	55	4¼	335	4¼	140	4	75	4 @ 4¼	1.60		
Justice	*	3000	7	110	8½@ 9	360	9¼@ 9¾	60	9¾			90	9¾@ 9¾	100	9¾	720		½
Kentuck	$	95	21			10	215			2	220			2	210	15		
Kentucky	$		20															
Knickerb cker	*	1200	20	50	6	175	6 @ 6¼	55	6 @ 6⅜	3	5 5¾@ 6	100	6	170	6¾@ 5⅞	865		⅛
Mammoth	*	1800	20	250	30c	720	58c	100	0o	100	30					1270		
Meadow Valley	$		12¾	1800	21¾@22½	1620	21⅝@23	1765	21 @21½	1575	21¾@22	850	2 3/@22½	1715	21¾@22	9518		½
Mahogany	$	72	4 13⅞	130	12 @12½					310	12 @12¾	45	12			485		
Mocking Bird	$	1200	25															
M Mahon	$			200	3											200		
Ma i n	$			4.8	1¾			300	2½							788		
Newark	$	80	4	570	5¾@ 6	170	5½@ 5¾	725	4¾@ 5¾	470	5 @ 5¼	407	5 @ 5¼			2202		
Ophir	*	1400	12	60	54½@55½	60	55 @56	230	55 @57	450	55 @57½	120	56 @57	160	54 @55½	1080		
O. H. Treasure	$	800	4 26¾			40	5	55	5	25	5½	150	5¾ @ 6	70	6	340		
Overman	*	12 0	10⅔	10	60					10	78		5 80	40	80 @81	9	1	
Occidental	*	800	12½			800	2 @ 2¼	100	2½	100	2			100	1⅜	1100		
Pioche	*	1000	22	440	13 @13½	105	13¾@13⅝	140	12¾@13	250	13 @13¾	20	13	40	13 @13½	975		
Pioche West	$			30	2							5	2	50	2	130		
P oche Phœnix	*			30	3½			100	3¼			220	3	80	3	530		¾
Page & Pan ca	$	240	16⅔	50	2½			100	2¾	70	2⅝					445		
Pea Vine	$	1000	30	170	85c			220	80c @ 00	250	@ 1⅜			50	1¼	1290		½
Phœnix	*			1065	37@ 4½	950	3⅝@ 4	760	3¾@ 3⅞	2033	3¼@ 3¾	525	3⅞@ 3⅝	770	3¾@ 3⅜	6095		¾
Raymond & Ely	$	4000	7¼	505	113 @111	645	116 @ 120	695	07 @110	720	108 @ 112	475	110 @ 111	300	110 @ 113	5240		4
Savage	*	800	20	190	88 @93	165	95 @98	180	87 @95	190	86 @88	160	90 @93	132	87 @92½	1017		⅛
Seg. Belcher	*	160	40	20	87 @90	10	85					50	80			110		
Sierra Nevada	*	3000	7½	500	53½@16			10	15⅜		15⅜	30	15⅜@16	100	15½@15⅝	255		¼
Senator	$			670	55c @60c	470	75c @90c	600	75c @80c	600	75c @80c	100	70c	700	75c @80c	3140	20	
Succor	*	7600	3															
Silver Hill	*			670	8½@ 9	80	8	538	8¾@ 8⅝	450	8⅝@ 8⅝			270	8¾@ 8⅝	2005		¾
Silver Peak	$			175	7 @ 7⅜	50	6¾	200	6¾@ 7	1050	5 @ 5⅞	100	5¾	110	6¾@ 5½	1685		1⅜
Sou h Chariot	*	660	30½	50	13¾	50	1¾									75		
Trench	*	20	250	100	14											100		
Teomusch	$					10	1½			50	1½					150		
Wash. & Creole	$	200	140			670	3					100	2¾			770		
Woodville	*	1400	20	910	6¾@ 8¼	1207	6¾@ 6¾	8.0	6½@ 6¾	550	6¾	5.0	6¾@ 6½	700	6 @ 6⅝	4257		⅛
War Eagle	*	1000	10							100	2¾					100		
Utah	*	1000	20															
Yellow Jacket	*	1200	20	150	111 @ 114	190	112 @ 116	200	110 @ 114	155	106 @110	45	110 @ 112			740		
Yule Gravel	*	400	25															

NOTE.—†—California. *—Washoe. ‡White Pine. §—Ely District. ¶Eureka District. ‖—Idaho. ‖—Nearly.?—Over.

S. F. Stock and Exchange Board.

THURSDAY, November 21et, 1872.

The eales at the Board for the week ending Wedneaday the 13th inst., amounted to $2,727,-000. The market has shown no decided activ-ity this week except on Saturday, and although there seems to he a disposition to buy, holdere evideutly anticipate a riee since transactione are limited. It ie reported that an effort will be made to reetrain the Raymond & Ely Mining Co. from paying the December dividend. There is no chance for that that we can until the complainants establish a right to an intereet in the grounde, a queetion for the Nevada courts to decide, and it is to be hoped that they will do eo speedily, eo as to remove all clonds. The mine hae a good reputation, not only for its richness, but what is much more unusual, it is managed in the intereet of etockholdere.

On Friday the 10th. the market wae a little etronger than on the previoue day. Belcher closed $150 higher; Crown Point, $5; Jacket, $5; Savage $2; Chollar, $2; Caledonia, 2; Con. Virginia, $2; Hale & Norcrose, $9; Meadow Valley, $1; Gould & Curry, $5. Pioche was $1 lower; Raymond & Ely, $4.

On Saturday the etock market was etronger still, and pricee were generally higher. Crown Point roee $3; Belcher, $2; Savage, $5; Jacket, $3; Chollar, $3, and most of the Waehoe etocke firm. Raymond & Ely closed $4 lower.

On Monday pricee were steady. Tuesday the businees of the Board wae light and pricee were nearly nominal in the morning. Afternoon Board ehowed it in a better condition. Belcher roee $2; Chollar, $4; Crown Point, $1; Gould & Curry, $10. Raymond & Ely fell to $104 between the Boarde, but rallied to $110 at the cloee.

Wedneday the market was eteady with very little fluctuation in prices. At close, prices were higher and Belcher rose $150; Caledonia, $4; Gould & Curry, $20; Hale & Norcroes, $4; Savage, $6; Raymoud & Ely, $1; Hermes, $2.

To-day the businese done in the Board wae very light, eome of the leading stocks not being called. A notable feature ie the advance of $37 in Gould & Curry over the price of a week ago to-day.

Below will be fouud iteme of intereet from the prominent minee, later than that to be found in our "Mining Summary."

RAYMOND & ELY.—On the 14th the Superintendent eent down $30,950; on the 17th he ehipped $32,193. The laet ehipment, on the 20th was $34,437; previoue ehipmente emounted to $158,755 making a total for 18 daye of $193,192, equal to $10,733 per day. The ledge is looking well in the weet portiou. The work in the shaft is cbanging hack to the quality shown in upper levele, giving good indicatione for next level.

SAVAOE.—For week ending Nov. 16, 1,079 tons of ore were extracted, aseaying $28.88 per ton; 1,049 tons were sent to mill, and 44 tone remained on dump.

HALE & NORCROSS.—For week ending Nov. 16th, 1,363 tons of ore were extracted, 1,316 tone are on the dnmp, and 546 tone were delivered to mill. The eecond level produnce hetter quality of ore than hae been extracted for months.

SILVER PEAK.—The ore being raieed ie very rich, averaging $168.17 per ton; on the 17th ten bare of bullion were shipped.

EUREKA.—The clean up for 6 days' run of 10 stamps was 1,320 ouncee of amalgam.

PHŒNIX.—On the 12th ten tons of bullion were ehipped, valued at $4,090. Developments are highly satisfactory.

The etopes on the BELCHER look well. Four furnacee of the EUREKA CONSOLIDATED are running finely. Rich ore ie reported ae having been struck in the NOONDAY mine. The GOLDEN CHARIOT will ehortly commence shipping hullion. The winze in the HUHN & HUNT ie improving. Four bare of silver bullion were ehipped form the AMADOR TUNNEL on the 10th. The eum of $2,871 wae received from the BELLEVUE on the 11th inst.

THE LONE STAR mine in Highland District, Nevada, wae eold on the 21st inst., and brought a very large eum to Stirling & Co., of Pioche. J. M. Maguire of this city effected the eale.

MINING SUMMARY.

THE following is mostly condensed from journals pub lished in the interior, in proximity to the mines mentioned

California.

ALPINE COUNTY.

MONITOR *Miner*, Nov. 9: A eample of the ore fonud in the 3-ft. body cut through last week at the 75-ft. level of Silver Glance ehaft, aseayed at the rate of nearly $600 per ton.

AMADOR COUNTY.

DRYTOWN.—Amador *Dispatch*, Nov. 16: The Gover has a ehaft down 200 ft., and J. Treigh-lone has determined to sink the shaft 200 ft. deeper.

The proprietor of the Potoei will reeume operatione in their shaft.

PLYMOTH.—Upon the Phœnix is heing erected a splendid 40-etamp mill, which will be in running order in the eonrse of a few weeks.

KENNEDY.—Jackeon *Ledger*, Nov. 16: The new ehaft is down 89 ft., and looks very fine. When the workmen reach 100 ft., a level will be run in to etrike the main lead.

CALAVERAS COUNTY.

GWIN.—Calaveras *Chronicle*, Nov. 16: The eouth shaft ie eunk 600 ft. The 600-ft. level will be immediately commenced. Between the 500 and 600 ft. levels there is an immense body of ore. The 500-ft. level hae heen driven eouth 290 ft., in first-claes ore the entire distance, and the end of the chimney ie not yet reached. The ehaft between the two levele wae eunk through rock that paid $50 per ton, and the quartz in the bottom of the "sump" is richor than at any other point. The exteneion of the 500-ft. level and the einking of the ehaft have uncovered a maes of rock 900 ft. in length hy 100 ft. in depth—known to he of extraordinary richnees—enough to keep the batteriee occnpied for an unlimited time.

HUDSON.—The new machinery ie in readinees for etarting and work will be commenced early next week.

SCIEFFORN.—San Andreae *Citizen*, Nov. 16: Eight hands are at work and the ehaft ie being eunk rapidly.

SHEEP RANCH cleans up every week about $1,500.

EL DORADO COUNTY.

NEW QUARTZ LEAD.—Placerville *Republican*, Nov. 14: Shepard & Whitten have discovered a rich qnartz lead in the 2d Ward of this city. Rock taken out 3 ft. below the eurface, will pay $40 to $50 per ton.

KERN COUNTY.

GRIZZLY BEAR.—Havilah *Miner*, Nov. 9: Prospecting is going on in Grizzly Bear Mt. Dist., with considerable euccese.

PAPOOSE.—This mine is turning out a large quantity of $23 rock.

JOE WALKER.—Bakersfield *Californian*, Nov. 14: This mine ie to be pumped out and set in active operation.

MARIPOSA COUNTY.

HITE MINE.—Mariposa *Gazette*, Nov. 15: The tnnnel is completed, and ie 1,400 ft. in length They etrnck the vein last week and find it rich in gold. The indicatione are favorable for an immense body of very rich ore.

NAPA COUNTY.

MINES.—Napa *Reporter*, Nov. 16: The Pbœnix is nnder full headway. They are working a force of 60 men and gettiug out about $15,000 worth of quicksilver per month. The Washington, Silver Bow and Valley Minee are all at work.

NEVADA COUNTY.

EUREKA.—G. V. *Union*, Nov. 13: The Eureka had a melting yesterday, 15 stamps in 12 daye crushed out gold worth $17,500.

ENTERPRISE.—Nevada *Transcript*, Nov. 13: The machinery from the old Vigilance mine, Ragan Flat, has been taken down and removed to the North Potoei ledge, Gold Flat.

STRUCK IT.—The Rising Star, Devil's Cañon, ie looking firet rate. They have etruck a ledge of eplendid rock in the lower tunnel, all through which gold can be eeen. The ledge ie well defined and ie from 3 to 7 ft. in deptb.

QUARTZ.—The Providence Co., Deer Creek, have a eplendid ledge, and have commenced paying dividende.

The John Schmidt on the north extension of the Wyoming ie paying firet rate. The ledge is 4 ft. thick.

The Gold Run ie being opened.

The Murchie is yielding excellent paying rock.

SAN DIECO COUNTY.

ITEMS.—San Diego *Union*, Nov. 7: Swain arrived last evening from Julian, hringing $900 worth of bullion cleaned up from 25 tons of Good Hope ore.

The Golden Chariot owners are sinking on their lead. The vein ie widening as the ehaft goee down, and the ore is improving in richness.

TUOLUMNE COUNTY.

GRAVEL.—Sonora *Independent*, Nov. 16: The Table M. Alpha Co., have struck the gravel bed of the ancieut river.

Goon.—It is reported that the Spring Gulch Co. cleaned np, on last Sunday, with reeulte showing the rock to pay $70 per ton.

ON THE LOOK.—Some quartz minere are gettiug ready to prospect the region of Pine Log.

Nevada.

EUREKA DISTRICT.

COY HILL.—Eureka *Sentinel*, Nov. 13: A blast was eet off in Mazeppa No. 2, yesterday which

OUR MINING SHAREHOLDERS' DIRECTORY.

[COLLECTED WEEKLY FROM ALL NOTICES ADVERTISED IN S. F. JOURNALS.]

ASSESSMENTS.

Name of Co.	Location.	Secretary.	S.F.Office,	Assm't.	Levied.	Delinq't.	Sale.
Alamo G. & S. M. Co.		G. W. R. King.	411 Cal St.	25	Nov. 2	Dec. 5	Dec. 26
AMAZON S. M. CO.	Ely District.	M. J. McManus.	409 Sacramento St.	50	Oct. 27	Dec. 2	Dec. 23*
Alpine G. M. & Co.	Amador Co.	W. L. Ustick.	438 California St.	1.50	Oct. 16	Nov. 16	Nov. 30
ALTONA G. M. CO.	Grass Valley, Cal.	David Wilder.	28 Merchants' Ex.	10	Oct. 3	Nov. 2	Nov. 25*
Arkansas M. Co.	Ely District.	J. H. Applegate.	420 Monigry St.	50	Nov. 6	Dec. 16	Jan. 10
Atlantic & Pacific Con. M. Co.		A. Neal.	419 California St.	10	Nov. 8	Dec. 11	Dec. 30
Bellevue M. Co.	Placer Co., Cal.	T. F. Cronise.	438 California St.	75	Oct. 12	Nov. 13	Nov. 30
Buckeye M. Co.	Washoe.	Chas. H. Fish.	419 California St.	2 00	Oct. 28	Dec. 2	Dec. 23
Baltimore Con. M. Co.	Washoe.	D. T. Bagley.	401 California St.	50	Nov. 12	Dec. 18	Jan. 11
Calaveras G. M. Co.	Cal.	T. B. Wingard.	318 California St.	25	Nov. 14	Dec. 18	Jan. 7
Caledonia S. M. Co.		R. Wegener.	414 California St.	3 00	Nov. 9	Dec. 13	Jan. 3
El Dorado M. Co.	Amador Co., Cal.	E. McFadden.	Express building.	50	Oct. 4	Nov. 10	Nov. 25
Eliza M. & M. Co.	Siskiyou Co. Cal.	T. F. Cronise.	438 California St.	1 00	Oct. 11	Nov 12	Nov. 28
Emerald Hill M. Co.	Utah.	F. Mudge.	Merchants' Exchange.	50	Oct 17	Nov. 20	Dec. 17
Empire M. & M. Co.	Washoe.	W. E. Dean.	419 Cal. St.	1 00	Oct. 3	Nov. 10	Dec. 2
Gen. Lee S. M. Co.	White Pine.	C. F. Schulze.	426 Montg'ry St.	10	Oct. 29	Dec. 3	Dec. 27
GOLDEN RULE M.Co.	Tuolumne Co.	J. B. Russell	432 Monig'ry St.	50	Nov. 2	Dec. 3	Jan 4*
GREAT BLUE G. R. CO.	Cal.	Wm. H. Watson.	302 Montg'ry St.	10	Nov. 16	Dec. 18	Jan. 7*
Greenville M. Co.	Plumas Co., Cal.	C. L. Kibbe.	419 Cal. St.	50	Oct. 1	Nov. 1	Nov. 26
Hale & Norcross M. Co.	Washoe.	J. F. Lightner.	438California St.	5 00	Oct. 18	Nov. 2 1	Dec. 11
Howard Hill G. M. Co.	Nevada Co.	J. L. King.	411 California St.	1 00	Oct. 23	Nov. 1	Dec. 16
HUDSON G. M. CO.	Cal.	J. L. King.	411 California St.	7½	Nov. 11	Dec 16	Jan. 6
Hermes M. Co.	Ely Dist.	B. B. Minor.	411½ California St.	1 00	Nov. 7	Dec. 13	Jan. 8
Huhn & Hunt's S. M. Co.	Ely Dist.	R. Wegener.	Merchants' Ex.	1 00	Nov. 12	Dec. 18	Jan. 8
Ida Elmore M. Co.	Idaho	Wm. Wills.	419 California St.	2 50	Oct. 25	Nov. 30	Dec. 21
Imperial M Co.	Washoe.	W. E. Dean.	419 California St.	1 00	Oct. 1	Nov. 6	Nov. 29
Independent G. M. Co.	Butte Co., Cal	G. T. Grimes.	240 Montgomery St.	40	Oct. 15	Nov. 19	Dec. 10
INGOLDSBY G. & S. M. Co.	Virginia City, Nev.	David Wilder.	24 Merch'ts' Ex.	50	Oct. 19	Nov. 23	Dec. 16*
Julia G. & S. M. Co.	Washoe.	R. Wegener.	419 California St.	2 50	Nov. 6	Dec. 10	Dec. 28
Justice M. Co.	Washoe.	R. Wegener.	414 California St.	2 00	Oct. 2	Nov. 7	Nov. 27
KINCAID FLAT M. CO.	Tuolumne Co.	R. H. Correll.	220 Clay St	3 00	Oct. 18	Nov. 21	Dec. 10*
Knickerbocker M. Co.	Storey Co., Nev.	Henry Boyle.	Stevensons Build'g.	1 00	Oct. 7	Nov. 9	Nov 28
Lander Con. M. Co.	Eureka, Nev.	J. Lincoln.	332 Montgomery St.	10	Nov. 14	Dec. 16	Jan. 8
Lemon M. & M. Co.	Eureka District.	J. T. Milliken.	608 Merchant St.	1 00	Oct. 26	Nov. 30	Dec. 20
MAMMOTH BLUE G. CO.	Cal.	J. M. Buffington.	New Merchants' Ex.	8	Nov. 18	Dec. 23	Jan. 13*
Mammoth S. M. Co.	White Pine.	J. L. King.	411 California St.	10	Nov. 12	Dec. 18	Jan. 8
MINA RICA M. Co.	Placer Co., Cal.	G. R. Spinney.	320 California St.	30	Nov. 19	Dec. 23	Jan. 13*
Newark S. M. Co.	Ely District.	D. T. Bagley.	401 Cal. St.	75	Sept. 24	Oct. 30	Nov. 23
NEVADA L. & M. CO.	Elko Co., Nev.	Wm. H. Watson.	302 Montgomery St.	8	Oct. 1	Nov. 10	Nov. 28*
New York Con. M. Co.	Washoe.	H. C. Kibbe.	419 Cal. St.	25	Nov. 6	Dec 12	Dec. 30
NOONDAY S. M. CO.	White Pine.	Chas. H. Fish.	419 California St.	20	Oct. 11	Nov. 15	Dec. 4*
NORMA G. M. Co.	Amador Co.	W. H. Watson.	302 Montgomery St.	5	Nov. 11	Dec. 12	Jan. 4*
National M. Co.	Nye Co., Nev.	B. B. Minor	411½ California St.	50	Nov. 7	Dec. 13	Jan. 6
OLD PROVIDENCE M. Co.	Lassen.	Frank Swift.	415 Montgomery St.	25	Nov. 7	Dec. 14	Jan. 6*
OHIO CONS. G. M. CO.	Calaveras Co.	W. A. Knapp.	432 Montg'ry St.	10	Sept. 24	Nov. 2	Nov. 23*
O. H. Treasure M. Co.	White Pine.	D. A. Jennings.	401 Cal St.	1 50	Oct. 9	Nov. 15	Dec. 6
Ophir S. M. Co.	Washoe.	E. Keystone.	Merchants' Exchange.	5 00	Oct. 23	Nov. 26	Dec. 13
Pacific Coal M. Co.,	Contra Costa Co.	A. Lachman.	First and Market.	10 00	Sept. 25	Nov. 13	Nov. 30
Pauper M. Co.	Idaho.	J. L. King.	411 California St.	50	Oct. 1	Nov. 19	Dec. 16
Peavine S. M. Co.	Ely District, Nev.	C. F. Balcom.	426 Montgomery.	25	Oct. 11	Nov. 20	Dec. 16
Peter Walter, M. Co.	Placer Co., Cal.	T. J. Owens.	Express Building.	50	Oct. 21	Nov. 26	Dec. 17
Phœnix M. Co.	Washoe.	S. Phillips.	415 Montgomery St.	12½	Oct. 18	Nov. 18	Dec. 6
Pioche S. M. Co.	Ely District.	C. E. Elliott.	419 Cal St.	1 00	Nov. 6	Dec. 12	Jan. 6.
Phœnix S. M. Co.	Eureka District.	J. Maguire.	419 California St.	50	Nov. 8	Dec. 16	Jan. 6
Pacific Borax Co.	Nevada.	E. Leuba.	507 Montg'ry St.	35	Nov. 12	Dec. 12	Dec. 27
Placer M. & C. Co.	California.	G. W. R. King.	411 Cal. St.	20	Nov. 11	Dec 14	Jan. 4
Rising Star M. Co.	Idaho.	Benj. Willis.	419 California St.	1 00	Oct. 28	Dec. 3	Dec. 23
Savage M. Co.	Washoe.	E. B. Holmes.	401 Cal. St.	$10 00	Nov. 14	Dec. 17	Jan. 4
Sobeil Creek M. Co.	Schell Creek, Nev.	P. W. Van Winkle.	301 Cal. St.	10	Nov. 1	Dec. 3	Dec 23
Shipley M. & M. Co.	Placer Co., Cal.	W. L. Ustick.	438 California St.	1 00	Oct. 16	Nov. 16	Nov. 30
Sawyer S. M. Co.	Waehoe.	Henry Boyle.	Stevenson's Building.	50	Oct. 29	Dec. 2	Dec. 21
SILVER WAVE M. CO.	White Pine.	J. W. Clark.	418 Cal. St.	1 00	Sept. 21	Oct. 26	Nov. 25*
St. Patrick M. Co.	Placer Co., Cal.	D. A. Jennings.	401 Cal. St.	2 00	Oct. 31	Dec. 3	Dec. 24
STATE OF MAINE M. Co.	Amador Co.	H. B. Congdon.	306 Montgomery St.	5	Oct. 17	Nov. 28	Dec. 16*
Star Consolidated M. Co.	Eureka Dist.	G. R. Spinney.	320 Montg'ry S.	25	Nov. 1	Dec. 6	Dec. 27
Tecumseh G. S. & C. M. Co.	Calaveras Co.	F. J. Herrman.	634 Washington St.	25	Oct. 10	Nov. 16	Dec. 5
U. S. GRANT M. CO.	Cal.	Enos Taylor.	220 Clay St.	50	Nov. 19	Dec. 30	Jan. 20
Utah S. M. Co.	Washoe.	W. E. Dean.	419 California St.	1 00	Nov. 7	Dec. 12	Jan 2
W llington M & S. Co.	Utah.	R. Wegener.	414 California St.	10	Nov. 12	Dec. 18	Jan. 7
War Eagle M. Co.	Idaho.	C. F. Balcom.	426 Montg'ry St.	2 00	Nov. 4	Dec. 10	Jan. 6

—* Advertised in this journal.

MEETINGS.

Name of Co.	Location.	Secretary.	Office in S.F.	Meeting.	Date.
Cottonwood Creek G. M. Co.		J. L. King.	414 California St.	Special.	Dec. 2
Deer Creek Cons. M. Co.		J. L. King.	414 California St.	Special.	Dec.
Gould & Curry S. M. Co.	Washoe.	Called by Trustees.	Merchants' Ex.	Spe ial.	Dec. 23
Heckerdorn M. Co.		L. Leorne.	513 Jackson St.	Special.	Oct. 26
Kentuck M. Co.	Washoe.	Frank Swift.	415 Montgomery St.	Annual.	Nov. 27
Lemon M. & M. Co.	Ely District.	J. T. Milliken.	608 Merchant St.	Special.	Nov. 26
Mendha S. M. Co.	Lincoln Co., Nev.	Geo. R. Spinney.	329 California St.	Annual.	Nov. 26
Quail Hill M. & W. Co.		T. F. Cronise.	438 California St.	Annual.	Nov. 23
Sidney Brooks Tunnel Co.			Merchan s Exchange.	Special.	Dec. 7
Storer M. Co.		R. H. Sinton.	Montgomery B ock.	Annual.	Dec. 2
Sutro Tunnel Co.	Washoe.	P. Ames.	321 California St.	Special.	Dec. 14
Tehama Cons. M. Co.	White Pine.	W. W. Stetson	414 California St.	Annual.	Nov. 28

LATEST DIVIDENDS—Within Last Three Months.

Name of Co.	Location.	Secretary.	Office in S. F.	Amount.	Payable.
Belcher M. Co.	Washoe.	H. C. Kibbe.	419 California St.	$3.00.	Sept. 10
Black Diamond Coal Co.	California.	F. B. Cornwall.	Cr.

brought to light an unexpected quantity of fine ore. It contains a large amount of horn silver, and assays very high; 20 tons of first-class ore is taken out and ready to be worked, besides about 80 tons of second-class ore. Work was commenced yesterday upon the Daisy, and the showing so far is very good.

THE PHŒNIX STRIKE.—We yesterday visited the Phœnix for the purpose of examining the new strike. From the station on the 300-ft. level a drift has been run northwesterly about 200 ft. At the end of this drift a shaft has been sunk 30 ft., from the bottom of which a drift runs northwesterly 32 ft. In this drift, about 12 ft. from its intersection with the shaft, the ore first begins to show, and from this point to the end of the drift it is one continuous mass of ore. Near the end of this drift a shaft is being sunk for the purpose of finding the depth of the deposit. About midway of the 32-ft. drift above mentioned, an incline has been run upwards and westerly at an angle of about 15°. It is 54 ft. in length, and the top, bottom, sides and end are one solid mass of ore. After having inspected this shaft, we descended the other shaft, to the 400-ft. level. From the lowest station in this shaft, a drift has been run northwesterly about 200 ft., from which point it diverges westerly, with the view of reaching the ore deposit above mentioned. This deposit is the largest yet found in the mine.

DUNNENBERG.—Two incline shafts have been sunk, one 140 ft. and the other about 40 ft. Drifts have been run in at various points on the 140-ft. shaft, and in all of them good ore has been found. The vein is of the width of from 3 to 5 ft., of smelting ore, averaging at least $80 to the ton. Over 1,000 tons of ore is on dump ready to be conveyed to the furnaces of the Co. as soon as they start up, and from 8 to 12 men are kept at work daily in the shafts and drifts. In the 40-ft. shaft a large amount of good ore is being developed.

JUNESVILLE.—Has a shaft sunk upon the ledge 100 ft. In this shaft a vein of ore is shown, varying from 3 to 6 ft. in width, and at the bottom fully 8 feet in width. The ore is smelting and of an average value of $80 per ton.

ELY DISTRICT.

BULLION.—Ely *Record*, Nov. 10: The product for the past week is $118,982.43.

SILVER PEAK.—The Condor mill commenced to work the ore last Thursday. There are 200 tons at the mill and 200 on dump, all first-class. Though the inclined shaft is down 120 ft., the mine is not being worked lower than the 90-ft. level. The east level at the 90-ft. station has been opened 70 ft. The face shows a ledge 4 ft. wide, carrying a large body of ore. At the western extremity of the same level, a vein 7 ft. wide is found.

MEADOW VALLEY.—The drift west from the fourth station in No. 7 incline is being driven ahead, as is the Summit shaft. The lower drifts in No. 3 incline are being pushed along rapidly. A goodly quantity of ore is being daily hoisted from the lower levels of the No. 3 shaft, and sent to mill.

FLORAL MILL.—The carpenters are hard at work framing the battery timbers and preparing the block for the stamps. Considerable of the machinery is on the ground.

IVANHOE.—The new shaft has reached 225 ft. The vein is 2 ft. in width, and considerable rich ore is being hoisted. The ledge is showing 3 ft. in width of very rich ore. The hoisting works are expected to arrive every day.

MARION.—Sinking during the week has been vigorously pushed, and its depth has reached 100 ft. The drift was driven 130 ft. and at its face a ledge presented itself dipping easterly. Stoping has been commenced in the drift.

AMANOR TUNNEL.—Now in 330 ft., the face looks magnificent. The winze sunk some distance in the tunnel is 60 ft. in depth, a drift has been run towards the ledge that showed in the tunnel and some very fine rock has been taken out.

NEWTON BOOTH.—The depth is 235 ft. and timbered to 230 ft. Mr. Campbell has let a contract to sink 100 ft.

PORTLAND EX.—A contract has been let to sink 70 ft.

NEWARK.—Sinking the main shaft is being pushed, it is down 455 ft.; when 20 ft. more is added a drift will be run to the south to strike the vein. In the west drift of the first level a winze is being sunk on the ledge, which is 12 ft. in depth. It shows a vein about 18 inches wide with 12 inches of ore. That portion of the ore which is near the foot wall gives assays of $264 per ton, while that taken from near the hanging wall is of a lower grade.

PIOCHE.—Work on the winze below the main incline is being pushed. It is 100 ft. below the lowest station. Last week 160 tons of ore was shipped to the Magnet mill. From the former crushings there has been received about $6,000 in bullion which is still on hand. The production of ore is of a decidedly better quality, the bar assays averaging fully 25 per cent. more than they have yielded of late.

ALPS—Is sinking. The drift is being run for the ledge.

LOUISE.—The shaft is down 150 ft.; the ledge is 3 ft. in width, and a streak of very rich ore has made its appearance within the past week.

CHIEF OF THE HILL.—30 men are at work constantly. The 3 winzes are showing good, rich ore. The Magnet will commence on Monday for this Co. There are about 45 to 50 tons of ore on dump, which shows good assays.

PIOCHE CHAMPION.—The shaft is down 120 ft. and still sinking; 10 men are constantly at work.

HUMBOLDT.

BULLION.—Unionville *Silver State*, Nov. 9: Amount shipped from the Arizona since our last issue was $5,689.

RELIEF DIST.—Work upon the Central Pacific is progressing favorably. A tunnel is being rapidly driven to connect with the lowest workings on the shaft, which has already reached over 200 ft. A fine body of ore over 2 ft. in width is developed in the bottom of the shaft. The mill has been put in complete repair, and has been running steadily for the past 10 days.

TRINITY.—Bradley and Clark with 2 shifts of men are prosecuting work diligently.

GOV. BRADLEY MINE.—Work is about to be resumed. A shaft 100 ft. deep has been sunk on the ledge, from which several tons of excellent ore have been extracted.

REESE RIVER.

BELMONT. — Reese River *Reveille*, Nov. 9: MONITOR CO.—Have cut the main ledge in their lower tunnel; are raising a chute up to the upper workings; are building a new ore house at the mouth of the new tunnel. The Monitor mill is nearly completed; working 60 men.

EL DORADO SOUTH CON. CO.—Taking out very rich ore from the Arizona. The body of ore discovered last week opens finely and proves of greater extent than at first predicted. In the El Dorado the 400-ft level is being pushed forward; next level above continues south in a fine body of ore to the feldtfeldtite ore, being in 175 ft. from main incline. Working 60 men.

EL DORADO NORTH CO.—Have let a contract for sinking a vertical shaft east of their old works.

BELMONT.—Working by contract 30 men.

WASHOE.

SAVAGE.—Gold Hill *News*, Nov. 16: Daily yield 150 tons, worth $27 per ton. The ore body on the 661-ft level of the old mine is holding out and yielding well. The incline is down 40 ft. below the 1600-ft level, in fair sinking ground. The main south drift on the 1600-ft. level is being driven ahead.

CON. VIRGINIA.—The shaft is down 45 ft. below the 500-ft level. Work on the 1167-ft. level through the Gould & Curry shaft is stopped for the present. Drifting and cross-cutting on the 500-ft level is continued with no new developments.

HALE & NORCROSS—The incline is down 317 ft. below the 1500-ft. level. There are rumors of a strike of some kind having been made somewhere on the lower levels.

CHOLLAR-POTOSI. — Daily yield, 160 tons, worth $28 per ton. The different ore-breasts of the old mine are yielding well.

CALEDONIA.—The main west drift and north west drift on the 400-ft. level of the new works are pressed vigorously. The south drift on the 300-ft. level of the old works is in a mixture of clay, quartz and porphyry. The water in the shaft is being rapidly lowered.

BUCKEYE.—During the week a large body of excellent ore has been developed in the south mine, between the first and second stations.

SILVER HILL.—The north drift at the first station has cut, and is still running through a body of fine ore. The winze from the old upper works to connect with the north drift is passing down through an excellent body of ore.

JULIA. — The main east drift is in 290 ft. in good working ground, having passed through a fine body of ore struck two weeks since.

SUCCOR.—The new shaft is down over 300 ft.

MCMEANS.—The main west tunnel is in 700 ft. in good running ground; it is the expectation to strike the ledge in about 25 ft. more.

KENTUCK. — A cross-cut is being made east through the ledge near the Crown Point.

KNICKERBOCKER.—The west drift is in 330 ft., the face in a mixture of quartz and porphyry.

SENATOR.—The shaft is down 285 ft., the entire bottom in barren quartz.

SIERRA NEVADA. — Prospecting the 500-ft. level continues; the ore-breasts in the old mine yield the usual amount of milling ore.

GOULD & CURRY—Is shut down for the want of the necessary supply of wood.

BELCHER. — The drift north of the 1,000-ft. level is in 251 ft. from the incline, and the drift south to meet it 269 ft.; 70 ft. more will complete the connection; the 1200-ft. level looks promising; the incline is down 123 ft. below the 1100-ft. level, in hard-blasting rock; the Kelsey, Sunderland, Pacific, Eureka and Santiago mills are all running on Belcher ore.

IMPERIAL EMPIRE. — The incline is down 55 ft. below the 1700 ft. level, making steady progress; the surface work for the new machinery goes steadily ahead.

SEGREGATED CALEDONIA — Has 2 shafts, one 50 and the other 75 ft. deep, both in brown pay ore.

CROWN POINT.—The 1300-ft. level looks better as farther developed; the cross-cut from the east winze, and the south drift are both in splendid ore; the ore-breasts and stopes of the 1200 and 1100-ft. levels look well.

YELLOW JACKET.—The water is all drained from the lower part of the mine, and drifting east is resumed at the 1500 and 1400-ft. levels. The various cross-cuts at the 1300-ft. level show highly favorable indications for finding a good body of ore.

WOONVILLE.—The ore body looks and yields well, with some improvement in quality. In the south drift the ledge is 25 ft. wide.

BALTIMORE CON. — Shaft 15 ft. deeper, and drift at the 250-ft. level in 67 ft., both shaft and drift in hard rock.

DANEY. — Drift at the 700-ft. level in 63 ft. from the shaft, in hard, blasting rock.

PICTOU.—Work being resumed.

NEW YORK CONS.—Work resumed. Preparing to sink the shaft deeper.

WHITE PINE.

WHITE PINE.—White Pine *News*, Nov. 9: No important changes have occurred during the week.

OUTSIDE DISTS. — ROBINSON. — The Canton Co.'s furnace will start up in a few days. A large body of high grade ore has been struck in the Old Bachelor. The Emma is down 65 ft., showing a large body of high grade ore. The Cecelia is down 15 ft. showing a ledge of high grade ore, rich in gold. The Rathburn is down 50 ft. in good ore. Work has been commenced in the Hayes, and the ore taken out will be sent to S. F. for reduction. Judge Walsh is opening his copper ledges, and getting out ore to be shipped to England.

A contract has been let to run a drift from the shaft of the Old Bachelor which is progressing, and shows a large body of high grade ore. Good reports come from 3 mines partially developed, the Kentucky, Western and Miami. The ore bodies are large and of high grade.

RUBY HILL.—Work has been commenced on the Silver Wreath, Col. O'Connor Sydney will resume the Superintendency; and will soon commence the erection of a 20-stamp mill.

SCHELL CREEK.—The mines generally are looking well.

PIOCHE.—The Stirling and Mocking Bird are improving daily, and it is expected they will soon reach a body of high-grade ore.

WESTERN SLOPE WHITE PINE MT.—TRENCH The east drift is showing some improvement in the quality of the ore. The west drift has struck a body of rich ore, which appears to be of considerable extent.

MILLS.—BIG SMOKY.—Running on custom ore.

MANHATTAN.—Running steadily on ore from the Beecher Cone. Co.'s mines.

TRINITY.—This mill is running successfully on tailings from the Oasis mill, at Shermantown—working about 40 tons daily.

Arizona.

MINES AND MINING.—Prescott *Miner*, Nov. 2: PIMA CO.—Not less than 40 arastras are being run. New discoveries are being made.

MOHAVE CO.—The little mill is almost ready to run.

YAVAPAI CO.—The arastras at Weaver are still running and making money.

Taylor & Smith have their force at work, sinking the well and removing the mill.

Wm. Cole from Bradshaw, brought several fine specimens from the Benton, which assay from $200 to thousands of dollars per ton in silver. Mr. C. has cut across the lode in one place, and found 40 ft. of vein matter between the walls. He has stripped it in another place, and found a vein over 60 ft. wide.

Colorado.

PARK CO.—Central *Herald*, Nov. 6: The Park Pool have purchased a large quantity of good ore, and paid $50,000 cash for the same.

Morgan & Hendereon have run two tunnels on the Sweet Home, and disclosed in each a splendid vein of grey copper, galena and pyrites.

The Moose Co, have taken out this summer nearly 300 tons of ore, which will yield about $450 per ton, several tons averaging $2,000.

The Lincoln Co. have taken out 85 tons this summer; 15 tons shipped to St. Louis yielded 401⅞ oz per ton.

The Lincoln Smelting Co. have nearly finished their extensive works, and will start in a week.

CARIBOU.—Central *Register*, Nov. 6: Work was resumed on the Idaho 2 weeks ago. The owners are running a drift at a depth of 75 ft, which is now completed and they are taking out rich ore.

A large body of ore has just been discovered in the Isabel, at a depth of 10 ft. The Grand View is developing a large and well-defined crevice. The Grand Island is looking well. The Grecian Bend is yielding ore assaying from $112 to $268 per ton. The Sherman ore assays 2,600 ozs. to the ton. S. Beecher Andrews has made a new discovery which he calls the Broome Co. lode. The ore taken at the depth of 2 ft. assayed 20 oz. to the ton, in silver. The Celestial has an 18 inch crevice from which ore is being taken, which yields 16 ozs. per cord under stamps. On Gold Hill the Phœnix is 33 ft. deep. They have a 10-inch crevice, the ore from which will assay $800 to the ton. The Red Cloud carries a well defined crevice.

Montana.

QUICKSILVER.—Virginia *Mountaineer*, Nov. 7: We were shown on Monday some very fine specimens of cinnabar from a ledge in Madison County. The ore assays 40 lbs. of quicksilver to the ton, and the ledge is some 30 ft. wide.

QUARTZ DISCOVERIES.—Deer Lodge *Independent*, Nov. 9: A very rich gold lode was discovered last week on the head of Pike's Peak gulch.

A silver lode has just been discovered within a few miles of town, on which the discoverers have commenced sinking.

BUTTE.—J. Gilchrist is engaged sinking on the Parrott and is down 52 ft. The body of ore is 2 ft. thick; J. D. Allport is sinking a shaft on a lode in Horse gulch and Wm. Regan has discovered a copper vein 30 ft. in width.

RICH GOLD LONE.—Helena *Herald*, Nov. 1: About 10 miles above the crossing of the Little Boulder by the Virginia road there was discovered last winter, one of the most promising gold-bearing ledges in the Territory. A shaft was sunk 40 ft., developing a vein of very rich ore 2 ft. in width. It is proposed to put up an arastra in early spring.

Utah.

SILVER KING.—S. L. *Journal*, Nov. 9: Main tunnel 100 ft., shaft 235 ft. and side drifts and stopings of at least 300 ft. more. The ft. walls are plain and an average distance apart of from 10 to 40 ft., showing galena and carbonates, which work about 80 per cent. lead and from $50 to $70 in silver.

GRAND CROSS has an incline shaft of 40 ft. and a tunnel to connect with the incline a distance of 110 ft.; vein 3 ft., 20 inches of solid galena in bottom of shaft, valued at $45 per ton, hanging wall, blue lime running as a reef, and foot wall quartz rock.

GEORGE PEABODY has a vein 20 inches, running under lime easterly and westerly; shaft 20 ft.; tunnel 50 ft., to tap mine at 90 ft.; 2 shifts constantly working.

EAGLE has a vein 3 ft. 6 inches; galena and carbonate; shaft 28 ft., 10 inches of fine ore; 25 tons on dump; working 3 men.

ALERT.—Running east and west; tunnel 50 ft., and shaft at end of tunnel 10 ft; vein looks well.

MAYBELL.—Vein at top 8 inches; at 50 ft. down it widened out to 4 ft.; the last 50 ft. of shaft run between solid walls 4 ft. apart; ore carbonate and galena, average $60; several assays run, silver, $142, $130 and $110; lead as high as 82 per cent.; average about 62; west drift from bottom of shaft shows 30 inches of solid ore; about 70 tons on dump; shipped about 50 tons.

LITTLE COTTONWOOD.—Cor. Salt Lake *Tribune*, Nov. 14: Davenport has a perpendicular shaft sunk 23 ft. from the surface, and thence, from the bottom is run an incline shaft, following the vein 180 ft. From the bottom of the incline is sunk another perpendicular shaft 45 ft. making the whole distance run 254 ft. The average thickness of vein appears to be 4½ to 5 ft. and the character of the ore is argentiferous (highly metalliferous) carbonates, and oxides of lead. The pulp assays, show $132 in silver to the ton, and 27 per cent. lead. There has been about 10,000 tons shipped from the mine; The tunnel, started from the Little Cottonwood side of the mountain last spring, is in 426 ft. and the ledge will be struck in running 20 ft. further.

MATILDA—Has perpendicular shaft sunk 75 ft. At the bottom there are two lodes run, following the vein, one of them 45 ft. southerly, and the other northerly 50 ft. There are 20 men at work, and the daily yield is about 7 tons.

THE EMMA—Is turning out from 450 to 480 tons per week shipping ore.

Washington Territory.

NEW MINES. — Walla Walla *Union*, Nov. 9: T. Keogh informs us that good diggings have been struck on St. Mary's creek, below the mouth of Perry creek, in Kootenai. Miners are washing from $8 to $10 per day.

New Incorporations.

MINERVA G. AND S. M. CO.—Nov. 14. Location: Butte County. Capital, $3,000,000, in 30,000 shares. Trustees—Robert Sherwood, Warren G. Lockhart, G. C. Perkins, Manuel Eyre, Jr., and Joseph French.

SEMINOLE M. CO.—Nov. 14. Location: West Point District, Calaveras county. Capital, 1,000,000, in 20,000 shares. Trustees—Washington Meeks, Charles J. Collins and Philip Stoner.

MIKADO CONSOLIDATED M. CO.—Nov. 15. Location: Kern District, White Pine County, Nevada. Capital, $3,000,000, in 30,000 shares. Trustees—J. D. Fry, H. K. P. Harmon, Samuel Locke, O. G. Leach and Charles E. Elliot.

SEARSVILLE WATER CO.—Nov. 16. Object: To acquire the waters of the Arroyo, Alambique and other creeks in San Mateo county. Capital, $20,000 in 200 shares. Trustees—C. L. Jones, Wm. Lloyd, Henry C. Downing and August Eikerenkotter.

MINNIE TUNNEL AND M. CO.—Nov. 16. Location: Big Cottonwood District, Utah Territory. Capital, $3,000,000, in 30,000 shares. Trustees—George W. Bowie, H. A. Gorley, H. B. Congdon, J. G. Cockrill and George L. Bradley.

COLEMAN S. M. CO.—Nov. 18. Location: Little Cottonwood District, Salt Lake county. Capital, $5,000,000, in 50,000 shares. Trustees—Samuel Purdy, Geo. F. Sharp, Joseph B. Bidleman, R. H. Sinton and W. V. Wells.

CRYSTAL CONSOLIDATED S. M. CO.—Nov. 14. Location: Grand Island District, Colorado. Capital, $3,000,000, in 30,000 shares. Trustees—J. O. Uhler, S. D. Kreider, Wm. H. Ashton, A. W. Whiting and L. N. Dougherty.

THE HECKERNDORN G. AND S. M. CO.—On the 14th inst., increased its capital stock from $120,000 to $2,400,000, and changed the principal place of business from Mokelumne Hill to San Francisco.

CALIFORNIA SILK MANUFACTURING CO.—Capital stock increased, Nov. 20th, from $50,000 to $100,000.

SILVER SPROUT M. CO.—Capital stock increased, Nov. 20th, from $3,500,000, on 5,000 shares, to $5,000,000 on 50,000 shares.

BACON M. AND M. CO.—Capital stock increased, Nov. 20th, from $800,000 to $2,400,000.

QUICKSILVER.—At a meeting of the trustees of the Washington Quicksilver Mining Co., held last week, Dr. Geo. E. Hinckley was elected President and Treasurer, and H. B. Congdon, Secretary. The claims of this company are located on the newly discovered cinnabar ledge in Trinity county. The mine has recently been examined by Capt. James White, late of the New Almaden mine, whose report to the trustees is very encouraging to the company and they will take immediate steps to push forward the work of developing the same.

LUCKY FIND.—Wm. Ronsh, of Dutch Flat, Placer Co., found last week a nugget of gold quartz, weighing about 20 pounds, which contained $1,600 in gold. It was found 60 feet from the surface.

The Carpenter Bee.

The intereeting and instructive engraving whicb we present thie week, we obtain from that excellent monthly the *Journal of the Farm*, and believe it will be examined with interest; becauee it serves to illustrate the wonderful wisdom or instinct that attaches to one species of the insect world.

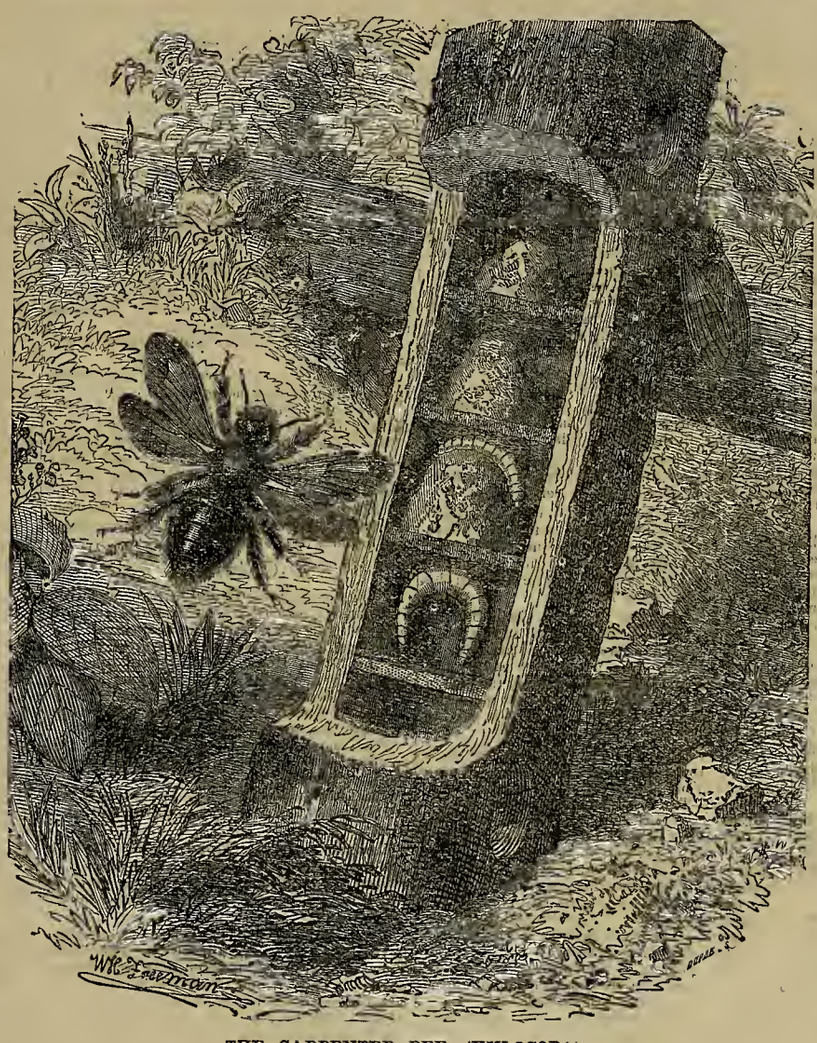
An agreeable writer in the *Schoolday Visitor* says of it: "It is celled the Carpenter Bee, a solitary bee whose eernest life excites ae much wonder and admiration of the student of nature as that of its honey-producing relative.

In the illnstration, the naturalist hes exposed the interior of the cells of thie insect's home, containing the developed lerva or grnb, and ite ood. Tbe grub in the lowest cell first comes to meturity, because the first egg is there deposited, and the partition is constrncted which separatee it from the chamber immediately above it, before the second egg is leid, aud its chember ie filled with appropriate aliment. Yon see, also, the opening immedietely under the the lowest cell, which serves es tbe ontlet throngh which the insect passes when it is ready to bethe its violet wings in the clear ennshine, and tbe eutrance tube at the top, placed at such an angle that the rain cannot enter the perpendicular tube in which are the nursery chambers of the yonng.

The manner in which it makes its many-storied house, and fille its chemhers with provision for ite offspring ie wonderful. Single-handed and untiringly she plies her horn-like jaws, digging out chip by chip till her long tube is prepared. Can yon imagine what her thoughts are as she prosccutes her work, end slowly penetrates the half-decayed wood in which she intends to depost her eggs? Is she reflecting upon the necessity of providing a sefe end comfortable home for her innocent and helpless offspring? Is ehe thinking of the multitude of insecte ever reedy to devour the food her solicitude purposes to store up for her own houechold and that she must protect it from their depredatione? I cennot answer these questions. And I know that insects are not supposed to think at all.

But etill I caunot resist the evidence here afforded of the foresight and maternel care of tbe mother bee. In the structnre of thie remarkeble hebitation, intelligence and design are manifested. And in the size of the tube—its lengtb—the capacity of each chamber, and the amount of food deposited for the nonrishment of the little occupent, there merks a calculeting power very closely resembling the mathematicel operations of the mind. The food, consisting of the pollen of flowers mixed with honey, provided by the insect, makee one think of the mother who, witb the greatest cere, provides for her offspring tbe food best adapted for its nourishment. In this inetence is seen the wonderful beneficence of the Creetor in so instructing the mother insect tbet witbont any previous training, she makes all necessary proviein for the birth, growtb and full development of her progeny.

In their grub state the yonng spend their time in their narrow chambers ehut out from the light of day. Here they are wholly devoted to self. And, as tbough their supreme selfishnees was known to the mother hee, she has divided her cylindrical home into chambers, so that each worm is "monarch of all it eurveys," and cannot intrude upon the rights of othere. It is when fully equipped for its higher life that its selfishness gives place to the disinterestedness of meternel instinct, when, forgetful of self, it consecratee all its energies to the construction of a home aud tbe providing of food for its offspring.



THE CARPENTER BEE, (XYLOCOPA).

Coal in Ireland.—In the geological and mining eurvey of Ireland, the government inspector has reported that that country contains some of the richest coal mines in the world. At present the whole yield from the old collieries is but 130,000 tons per annum, as many of them are worked but feebly, while others are permitted to lie entirely idle.

An Immense Snow Plow.—Tbe Union Pecific Reilroad is having built at ite shops in this city a snow plow, which, when finished, will be the largest and most powerful in the world. It is rapidly approeching completion, and in a few days will be reedy for business. The trucke on which it is built are very heavy and strong, and were cast especielly for this plow. The platform on the trucke is twenty-two feet long, and ten feet six inches wide, and is composed of solid oak timbers eight by eixteen inches. These timbere are held together by ten iron bolts, one and e qnarter inches in diameter, which run crosswise. This solid bed is fastened to the transom beame by forty bolts, twenty over each truck. The inclined slide, placed on the pletform, is twenty-two feet long, and slopes at an angle of thirty degrees, and is held firmly to the bed by forty bolts, of an inch in diameter, end is supported from behind by inclined posts, six feet long, eight inches wide and eixteen inches thick. Tbe entire length from the rear of the platform to the end of the slide is thirty-two feet. Tbe slide is to be ironed, and an immense plow of the ordinary shape, eighteen feet long, eleven feet wide and five feet high, and covered with iron three-sixteenths of an inch thick, is to be securely placed upon it. On the point of thie plow there ie to be an iron plate, steel pointed, eleven feet long and four feet wide. This plete of course runs across the track and only one inch ebove it.

The rear of the pletform will be boxed in, making a room twelve feet high, eleven feet wide and ten feet long, for the purpose of keeping the snow ont. It will be furniehed with a door, so tbat if necessary it can be loaded with iron.

The monster will weigh fifty tons, and will be operated by three of the heaviest engines on the road. The coet will be over $5,000. The design wae gotten up by G. E. Stevens, Superintendent of the car and building department, and J. H. Congdon, general maeter mechanic of the road, who must have made it a study since laet winter. There will be but very few snow-drifte that this plow won't clean out; but if it ever jumpe the track, it will be a pretty hard job to get it on again.—*Omaha Bee.*

Oregon salmon, which were formerly in bad repute, owing to the improper and careless mode of curing and packing them, now command a ready market. There are now $1,000,000 invested in the business. Spiced salmon in tins is much sought after in Europe as an article of luxury, commanding high prices.

Kern County Mines.

The Miuing prospecte of Havilah end ite surrounding districts, says the *Miner*, are of a moet flattering character. The deep mines of the county wbich have been feirly tested, develop what has heretofore been unknown in the mines of this county—and a very important development it is—viz: a remarkable spread in the width of the ledges. By way of illustration we cite the St. Johu and Bright Star mines, which were only three feet in width when first struck. Thcy both held this uniform width until down two hnndred and sixty feet, when the ledges commenced to widen without any decrease in the richness of the quartz, which pays from wall to well the same ae before the extension in width. The ledges are now almoet eight feet in width with a teudency to still increese.

Old mines tbat have been lying idle for the past six years for the want of proper knowledge of tbe menner in which they could be worked profitably, and which were formerly uuder the control of superintendents who never saw a mine before they ceme here, have been relocated and worked to advantage. We can refer to many instances involving great losses; and again, can refer to tbe very same places which, on being worked by competent hande, have paid bandsomely, much to the wonder of its former workere. Tbis only illustrates the vicissitndes and triels tbat have marked the general history of quartz mining on the Pecific coaet. Beginning et a time when labor and material were enormously high, ignorant of the requirements of the business, and overlooking many treacherous elements of defeat, the miuer and millman were beffled alike; and eubject to dieeppointment and lose in conee-queuce of a lack of knowledge concerning mining. Seven years of conetant working and experiment have overcome all former impediments, and mining in this county is no longer an experiment. Not only is the mine and management now here perfect, but the mill and plant are first-clase, all the late labor-saving appliances and otber advance improvements have been added, greatly increasing the efficiency of profitable mining. Kern County, an early placer and a later qnartz mining locality, and one having experienced good and evil fortune, is now recovering from a long season of depression, with a most encouragiug prospect of becoming a flourishing and progreseive mining county. Everything wears an aspect of prosperity, and Havilah will rank as one of the first mining camps of the coast yet.

An Ingenious Device—Mending a Steam Cylinder with Wood.

On a late trip of the steamship *Nebraska* from New Zealand to Honolulu, says the *Chronicle*, the cerpenter of the ship became engaged in a spicy debete with the English steward aboard as to the responsibility of England for tbe destruction of the United States merchant marine by tbe *Alabama*. The debate determined iu a fight, and the two combatants were placed in irone. Upon the arrivel of the *Nebraska* at Honolulu, the carpenter told his grievences to the Americen Coneul there, who thought it best to send him back to tbe United Statee on the *Idaho*.

Wben the *Idaho* was several daye ont on tbe return voyage from Honolulu, her cylinder-head was broken into fragmeuts and the engine conld not be used. She had just reeched a point where the trade-winds failed her; her seils were scarcely large enough to steady her in rough weatber, and retarded as she was by her propeller, the chaucce for getting to San Francisco or even back to Honolulu were rather blue. In an ordinary breeze her sails just gave her headway enough to be steered, and as few vessels cross or follow the Sendwich Islaud steamship route, the passengere resigned themselves to fate and made up their miuds to endure a long and nncertain float. The Capteiu was abont to be petitioned to put passengers and crew on short allowence, when the bellicose carpenter came to their rescue.

A Wooden Cylinder-Head.

On examining tbe injured cylinder, the thought entered his mind tbet a stout cylinder-head of tough, hard wood migbt stand a sufficient pressure of steam to run the engine at moderate speed. He steted this to the Captein, who, after some hesitation and as a last resort, reluctantly gave him permission to try the experiment. The carpenter procured his tool cheet from the hold, and after twenty-five hours hard work, finished and inserted the wooden cylinder-head. It was made of three thicknesses of herd teak board, rendered steam-proof by being covered with paint and canves, and was caulked tight and held in ite piece by bolts as in other cylinder-heade, and by a piece of timber braced against its end. When the cerpenter announced that the engine wae ready for use and desired the engineer to turn on steam, there was a geuerel scemper from the cylinder, where numbere of tbe passengere, sleepless and feverish, had anxiously watched the finishing of the work. Slowly tbe steam was turned on, the piston rod rose and fell, the propeller churned the water quickly, the *Idaho* moved on at ber accustomed speed end the wooden head was a success. Tbe cylinder-head after being ueed for a time swelled and collapsed like the lungs in respiration, but the invention etood the test to the end and eerned for the carpenter quite a reputation. He ie now employed on the *Ajax*, and hae become a very hero among seagoing men.

A passenger from the *Idaho*, who conversed with the reporter, was very enthusiastic in behalf of the ingenione "Cbips," and eays that he is clearly entitled to salvage. Doubtless bnt for his Americen views on tbe *Alabama* claims question, the passengers of the *Idaho*, the majority of whom were Englishmen, would have presented him with some memorial.

Condor Mill.—Is situated 3 miles from Bullionville, between that plece and Dry Valley. It ie a romanticand pleasant spot for thie land of sagebrush, as there is plenty of running weter and shedy treee surrounded by an amphitbeatre of lofty rocks. The mill ie built on quite a novel plen, there being no stampe used, only the patent crusbing machiues. The ore ie received in the upper portion of the mill aud pesees through the Brodie crusher, from thence through the rollers and is amalgemated in 6 Hepburn roller pane. The arrengement is very ingenious and labor-saviug and seeme to be very successful. The machinery is driven by a powerfnl engine the cylinder of which is 14x30. Steam is supplied by a very large boiler 54 inches in diameter containing 62 three-inch tuhes. Complete arrengements havo been perfected to guard against fire, a donkey engine capable of throwing 7,000 gallons in an hour with 150 ft. of 2-inch hose being kept in constant readiness for nse. Mr. S. M. McCurdy is Superintendent of the mill and his efforts to keep matters in good shape are well seconded by those who are working nnder his charge. Messre. Colyer and McWilliame are the amalgamatore. An assay office is attached to the mill which is well arranged and is nnder the charge of Mr. James Buchanan. A hoarding honse is being erected but is not quite finished, owing to the great difficulty in obtaining lumber. We forgot to say that the mill was erected by Mr. W. J. Drew and reflects much credit upon tbe mechanical abilities of that gentleman.—*Piocbe Record.*

Wit does not take the place of knowledge.

Useful Information.

Facts About Belting.

Cement for Either Leather or Rubber Belts.—"Gutta percha, 16 ounces; Indin-rubber, 4 ounces; pitch, 2 ounces; linseed oil, 4 ounces. Cut the rubber in shreds and add the oil, which in a few days will have softened the former. Melt carefully the gutta-percha and pitch together, and stir in the rubber solution or paste. Apply hot to and press the joints."

If two shafts in the same plane, but not parallel, are not belted together, the belt will run towards the ends which are nearest.

A running belt, nearly vertical, will run to the highest side; but belts running nearly at an angle of 45° to horizontal, will run to the end of the pulley where the shafts are nearest together, the pulleys in both cases being straight-faced.

To Lace a Quarter-Twist Belt. — Put the belt on, and bring the ends together in the usual way; then turn one end inside out and lace. The belt will run, it will be found, first one side out and then the other, and will draw alike on both sides.

The theory of cone pulleys is a complicated and difficult one, one element in the solution of which is the distance between the axes of the pulleys; and it is only when this distance is very great in comparison with the diameter of the larger pulley, or when the two pulleys are nearly of the same size, that the rules commonly given will apply. If belts were made of some inextensible substance, the difficulties of adjustment would require more accurate rules; but, fortunately, leather belts readily accommodate themselves to slight errors of construction, although not running in such cases with equal tension.—*Sci. Am.*

Moonlight Reflections. — When standing by a lake side in the moonlight, you see, stretching over the rippled surface toward the moon, a bar of light which, as shown by its nearest part, consists of flashes from the sides of separate wavelets. You walk, and the bar of light seems to go with you. There are, even among cultivated people, many who suppose that this bar of light has an objective existence, and who believe that it really moves as the observer moves—occasionally, indeed, as I can testify, expressing surprise at the fact. But, apart from the observer, there exists no such bar of light; nor when the observer moves is there any movement of this glittering line of wavelets. All over the dark part of the surface the undulations are just as bright with moonlight as those he sees; but the light reflected from them does not reach his eyes. Thus, though there seems to be a lighting of some wavelets and not of the rest, and though, as the observer moves, other wavelets seem to become lighted that were not lighted before, yet both these are utterly false seemings. The simple fact is that his position in relation to certain wavelets brings into view their reflections of the moon's light, while it keeps out of view the like reflections from all other wavelets—*Herbert Spencer.*

To Cut and Bore India Rubber Stoppers. Dip the knife, or cork borer, in solution of caustic potash or soda. The strength is of very little consequence, but it should not be weaker than the ordinary reagent solution. Alcohol is generally recommended and it works well until it evaporates, which is generally long before the cork is cut or bored through, and more has to be applied; water acts just as well as alcohol, and lasts longer. When, however, a tolerably sharp knife is moistened with soda lye, it goes through the india rubber quite as easily as through common cork; and the same may be said of a cork borer, of whatever size. I have frequently bored inch holes in large caoutchouc stoppers, perfectly smooth and cylindrical, by this method. In order to finish the hole without the usual contraction of its diameter, the stopper should be held firmly against a flat surface of common cork till the borer passes into the latter.—*Chemical News*

Boston—Origin of the Word.—In the seventh century a pious monk, known as St. Botolph, founded a church at a place called Y-ccan-ho, on the English coast, Lincoln Co. The town which grew up around it was called Botolph's Town, contracted into Bot-olphs-ton, Bot-os-ton, and finally Boston. It was from this town that the Rev. John Cotton came to America, and gave the same name to the seaport in which he settled in Massachusetts.

Shaping Soft Rubber with a File.—President Morton, of the Stevens Institute, tells us that he finds the ordinary thick sheet rubber used in making up lantern tanks and for many similar purposes, may be readily dressed into exact shape *with a file*, if only it is supported by being clamped between plates of wood or metal in the vise. The file is used dry, and in all respects as in working on wood or metal.

A Mosquito Frightener.—Mr. A. D. Breazele, of Alabama, has patented a mosquito frightener composed of the following formidable ingredients: Oile of pennyroyal, savin, origanum, terebinthe and sassafras, tinctures of lavender, chloroform and armica, gum camphor, nitre, alcohol and kerosene oil. If the Alabama mosquitoes can stand such a preparation as the above, they are proof against anything, and the only remaining thing to be done is to set mouse traps to catch them.

Disintegrating Vegetable Fiber by Steam. The process of disintegrating vegetable fiber for paper stock or for other purposes by the expansive force of steam compressed within the pores of the material, and then allowed to expand suddenly, may not be familiar to all. The operation is performed by means of a strong retort called the "fiber gun," at one end of which is a steam-tight door or valve, so constructed as to be closed and fastened very firmly, but also that, when desired, the fastenings can be instantly loosened, thus allowing the valve to fly open under the internal pressure of the steam. This retort is filled with the material to be disintegrated, the door or valve is closed, and a pressure of from 100 to 200 pounds is admitted, filling the retort and all the pores and interstices with the material. The valve is then released, and flies open with an explosion. The material is shot out of the retort or gun, and the steam compressed within the pores of the material suddenly expands, when the external pressure is relieved, tearing the fiber to pieces. This apparatus is called Lyman's Fiber-gun."

Use of Tannin in the Manufacture of Beer. It is stated by a German authority that the tannin extracted from the gall-nut possesses all the qualities of that which is contained in the flowers of the hop-plant, and that the property of the flowers of preserving and clearing the beer are due to these qualities of the tannin. Fifteen ounces of tannin are stated to be equal to five hundred ounces of the best hops for clearing and preserving the liquor. The tannin is dissolved in eight or ten times its weight of water, and mixed with the wort during ebullition. It is stated to effect a complete clarification, and a deposit well thickened may be seen rapidly forming in the coolers. It is therefore claimed that if the aroma and bitterness of the hop can be dispensed with (a big "if" in our opinion), hops can be advantageously and completely replaced by tannin, which gives a beer sweet and vinous. An entirely new manufacture of beer without hops is thus rendered possible. The employment of wood shavings and other substances containing tannin in condition to be utilized is suggested, and a new era in the manufacture of beer is predicted.

Coffee.—For reasons not revealed, there is a growing deterioration in coffee, from every source of production. It is probably the same cause that deteriorates all fruits and other products, viz., confining cultivation to constant selections without variation. In time, like intermarrying cousins, this inbreeding runs out all vegetable stock. The world is being relieved of worn out tea plants, by new growths in new soil—in India. That country is going very extensively into the coffee culture. Already we find in English papers praises of India coffee that rivals Mocha, Java, and Jamaica. Coffee, in India is becoming an important article of agriculture and export. In the southern counties of Cal., coffee can be grown. We understand that this is demonstrated; and we are assured that, once in bearing, the coffee trees demand little care and insures large profits.

Experimental Chemistry.—Workmen were lately employed to clean out the grease and paint from the inside of the steam cylinder of one of the large ferry boats of the New Jersey Central Railway Company, opposite this city. For this purpose the piston had been duly removed and three men went down into the cylinder, which is 11 feet deep and 50 inches in diameter, taking with them a pail of benzine (petroleum naphtha) which liquid they used in softening the grease. Suddenly a smell snake-like streak of flame started from under the hands of the man nearest the benzine pail, and the next instant an explosion occurred and scattered the burning fluid over the persons of the men.

Solid Bottoms for Fire Grates.—Now that the price of coal is high all over the world the following will be read with interest by the consumers of that indispensable article:—The most practical suggestion yet made toward economy of coal, seems to be the use of solid bottoms in ordinary fire grates. It is asserted, and indeed proved, that in any fire place not excessively small, a plate of iron placed upon the grate will save the consumption of coal, reduce the smoke, and leave a cheerful free burning fire. Quite sufficient air enters through the bars, no poking is necessary, and the fire never goes out till the coals are consumed. There is no ash, and no dust, every particle being consumed. Any householder can try this experiment, and reduce his coal bill, say thirty per cent., at the cost of a shilling.

How to Decoy a Pig.—A correspondent, speaking of the difficulty of swine-driving, says it is as "easy as whistling after you know how," to wit: To the end of a cord tie an ear of corn; drop it in front of a pig within five or six inches of his nose, and commence walking away in the direction you wish him to propel. If his pigship shows evidence of blighted hopes or aberation of mind from the singular conduct of the corn, seduce him into the belief that it is "all right" by letting him have a brief nibble at it, and then resume your line of march. In this way the most obdurate pig may be decoyed at a reasonable distance.

A Harmless Hair Dye.—Dr. K. Kurtz's harmless hair-dye is made in Greece from green walnut burs *Juglans regia* by extracting with water and evaporating until the regianic acid is precipitated as a black powder.

Good Health.

The Cause of an Early Loss of Beauty.

The evils arising from the transgressions of the laws of health, find their greatest extreme among women. Shut up in houses nine-tenths of their time, with either no exercise, or that which is of a limited, irksome sameness, they are, as a consequence, naturally pale, soft, and tender; their blood is poorly organized and watery; their muscles small and flabby, and the force and functions of their bodies, as a whole, run low in the scale of life. A spurious fullness in the outline during girlhood, which usually melts like snow under an April sun whenever the endurance is put to the test, as in performing the functions of a mother. The change in appearance from the maiden of one year to the mother of the next is often so striking and enduring that it is difficult to believe that we are looking at the same person. The round, pleasing shape is prematurely displaced by a pinched angularity, and an untimely and unseemly appearance of age. Travelers from other countries, who have had extensive means of observation and comparison, have remarked upon the great beauty of American women, and the early age at which it is lost. Some have ascribed this to the climate; but more intelligent observers agree that it is mainly due to a hot-house, enervating mode of life. English ladies of rank who, by the way, are celebrated for retaining their beauty even to a ripe old age, think nothing of walking a half a dozen miles at a time; while American ladies would think such a thing "perfectly dreadful." If American women, so daintily and richly fed, will sit in dark and sultry rooms the live-long day, they must expect to bloom too soon, to hasten through this charming period—at the longest in about ten years—and for twenty-five years after, have the grim satisfaction of being thin, wrinkled, angular and sallow.

Bad Air.

Air, the breath of life is the first want of the human being, and it is also the last. At every pulsation during life we need this life sustaining element. Yet one would suppose, by the bad ventilation of houses, churches and theatres, that a man was made to live without air—at least, that it was a matter of indifference whether he had much or little, or whether it was good or bad. We read in the papers of the death of persons from suffocation in wells, mines, or by escaping gas, and we are startled, wondering why people will be so careless; yet thousands of people die by inches, or only half live, in consequence of the impurity of the air which they breathe. If one is shut up in a small room without any admission of fresh air, the air contained within the room soon becomes impure by having been breathed over and over, and very great lassitude or depression of life and spirits is the consequence. The blood requires to be revitalized constantly within the lungs by coming in contact with atmospheric air. Indeed, that is the whole office of the lungs, to aerate or revitalize the blood (which is there met by the atmospheric air), and change it from dark venous blood to bright scarlet arterial blood, thus preparing it to carry life to every part and tissue of the system. In the lungs the blood loses many of its impurities, and takes on the life giving oxygen from the air; and in proportion as the air is abundant and pure which we breathe, in that proportion we have the glow of health and the enthusiasm of living which comes from well-vitalized blood.

Slow Poisoning from Green Wall Paper.—A physician in western Massachusetts recently had a lady patient who, for several weeks, had been suffering from nausea, general prostration, and other symptoms of slow poisoning. Failing to discover the cause of the symptoms, as a last resort the doctor requested her to move from her chamber, the walls of which were covered with paper of a very light shade of green, so light, indeed, that in the evening it could hardly be distinguished from white. After leaving the room the symptoms immediately disappeared, and the patient rapidly recovered. A sample of the paper was forwarded for analysis to the State chemist at Hartford (Joseph Hall, of the High School), and was found to contain a large quantity of arsenic. Mr. Hall obtained the poison in the various forms of metallic arsenic, yellow tersulphite, silver arsenite, and arsenious acid, or common white arsenic. He estimated that every square foot of this innocent looking paper contained an amount of the poison equivalent to five grains of arsenious acid, or double the fatal dose for an adult person. This in the moist warm weather of July and August was amply sufficient to keep the air of a room constantly impregnated with the poison, and any person occupying such a room would be as certainly poisoned as though the arsenic had been taken into the stomach.

Opium is imported into the United States at the rate of five millions of ounces a year, at a cost of two millions of dollars in gold.

Mortality in San Francisco for September, 1872.

In the report of the Boad of Health of this city, for September last, we find the following: There was a decided diminution of mortality in September, compared with the month preceding it. Though the beginning of autumn, when zymotic diseases are prone to increase, it by no means marks an unhealthy period. In 1868, when we suffered from the small-pox epidemic, in 1869, and in 1870, there were more deaths in September than in the same month of the present year. In 1871, however, the mortality was somewhat less. Comparing the present September with the same month a year ago, we find some points of difference, but many of similarity. There was a much greater mortality from cholera infantum, hemoptysis, hydrocephalus, and paralysis, in the former year, and pneumonia, in the latter. The deaths from atrophia, apoplexy, debility, diseases of the heart, typhoid fever, inanition, meningitis, and consumption were about equal in both years. The extraordinary mortality from meningitis in August last was not repeated in September, and but half as many deaths from convulsions occurred in the latter month. Thirty-eight per cent. of the deaths were of children under five years of age; thirty-nine per cent. were females; and forty-two per cent. were natives of California. Fifty-two, or twenty per cent., died in the public institutions. Total number of deaths 260.

Chloroform as an Anæsthetic.—M. Demarquay states that the action of both chloroform and morphine is to lower the animal temperature, and that a combination of the two causes a decrease of 2¼° C. It is asserted that the use of both agents combined as an anæsthetic is extremely dangerous. During an operation performed upon a patient under the double influence, it was remarked that the circulation became interrupted, the arterial blood turned black, and repeated fainting fits took place. In order to avoid these grave consequences, M. Demarquey considers that chloroform should be used singly, but not administered in the ordinary manner. He proposes, instead of saturating a compress or sponge with the agent, to use a flannel mask, on which the chloroform contained in a graduated bottle is turned drop by drop. The evaporation is continuous, and the patient breathes without effort. A year's experience with this apparatus proves that by its use all struggling during the period of excitement is obviated, and that insensibility is easily and gradually attained.

Beds.—These are necessary, as well as convenient and comfortable; but like all other things in this world, there are good and bad beds. Feather beds are injurious to health, and should, therefore, be dispensed with. The way in which many manage them is also very absurd; they rise from them in the morning, make them up steaming hot, close the doors and windows, all till bed-time. Then the scene is acted over again. All beds should be most thoroughly aired after being used, that the gases and odors imparted to them from the human body may be removed. The room, also, should be well ventilated. There are many materials that make more healthful beds than feathers, among which may be enumerated hair, husks, straw, springs, etc.

Colored Spectacles.—The *Scientific American* quotes from a medical authority: "The photographer uses orange colored glass to exclude the actinic rays of light, and why some optician has not had the genius to see that orange is the proper color for spectacles, instead of green or blue, for persons with weak eyes, is beyond my comprehension. A room in the hospital with which I am connected, is lighted through orange colored windows, and is used by patients who have certain diseases of eyes requiring the exclusion of the actinic rays of light. It has been very satisfactory. Orange is also, I believe, the proper color for bottles containing chemicals affected by light."

Sacrifices to Fashionable Surgery.—Under this head the London *Medical Press and Circular*, referring to the increasing number of deaths from chloroform, considers it the duty of British surgeons to investigate more fully than has yet been done, the comparative harmlessness of ether. The editor concludes an article on it in these words.

"Without expressing more than a very strong suspicion in favor of ether, we unhesitatingly say that every life lost by the use of chloroform while we remain in comparative ignorance as to the loudly declared security of the rival anesthetic, is a sacrifice not to the exigencies of surgery, but to inconsiderate prejudice."

Enameled Cooking Utensils Dangerous to Health.—Dr. Zinrek has examined the enamel on hollow-ware sold in Berlin, and reports that the enamel on a stew pan made in Belgium contained so much lead that 15 centigrams of oxide of lead (2¼ grms.) was found dissolved in one liter of vinegar (3 per cent. acetic acid) which had been boiled in it for one hour.—*Amer. Chemist.*

Sunstroke and Whiskey—Physicians say that more than two-thirds of the cases of sunstroke during the past heated term have occurred with persons who were in the habit of drinking liquor.

MINING AND SCIENTIFIC PRESS

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San Francisco:

Saturday Morning, Nov. 23, 1872.

Legal Tender Rates.—S. F., Thurs., Nov. 21—Buying, 88¼; Selling, 88¾.

Table of Contents.

ILLUSTRATIONS.—Best's Bluestone Mixer; The Almond: An Improved Blowpipe, 321 The Carpenter Bee, 326. The San Francisco Branch Mint, 329.

EDITORIALS.—Our Representative Arts; The American Institute of Mining Engineers, 321. The Coast Railroad South; Our Home. Industries—The Foundries, 328.

CORRESPONDENCE.—Tintic Mining District, Utah, 322.

SCIENTIFIC PROGRESS.—Is Electricity Generated by Water Currents; Sea Serpents; Water Freezing Below 32° Fah.; Water not an Electrolyte; Transparency of Mountain Air; Formation of Sandstone; Action of Magnetism on Molten Steel; Germination of seeds, 323.

MECHANICAL PROGRESS.—Experiment in the Structure of Iron; Improvements in the Arts of Metallurgy; Steel Boilers in England; Compressed Steel; Tempering Steel; High Pumping; The Largest Steam Hammer, 323.

MINING SUMMARY from various counties in California, Nevada, Arizona, Colorado, Idaho, Montana, and Utah; Mining Shareholders' Directory, 324-5. Market Reports, 332.

USEFUL INFORMATION.—Facts About Belting; Moonlight Reflections; To Cut and Bore India Rubber Stoppers; Disintegrating Vegetable Fibre by Steam; Use of Tannin in the Manufacture of Beer; Coffee; Experimental Chemistry; Solid Bottoms for Fire Grates; How to Decoy a Pig; A Harmless Hair Dye, 327.

GOOD HEALTH —The Cause of an Early Loss of Beauty; Bad Air; Slow Poisoning from Green Wall Paper; Mortality in San Francisco for September, 1872; Chloroform as an Anæsthetic; Beds; Colored Spectacles; Sacrifices to Fashionable Surgery; Enameled Cooking Utensils Dangerous to Health; Sunstroke and Whiskey, 327.

MISCELLANEOUS.—Copper Smelting; Notes on the Management of Mining Companies, 322. An Immense Snow Plow; Kern County Mines; An Ingenious Device—Mending a Steam Cylinder with Wood; Condor Mill, 326. Encourage Local Manufactures; Lead Ore; California Marble; Mountain Railroads; A Phase of Miner's Life and Death; The Resources of Japan; American Coal, 330. Academy of Sciences; Patents and Inventions; Patent Decisions, 332.

The Comstock Lode and Sutro Tunnel.

The issnes of our paper containing the illustrations of the above lode—October 19 and November 2—were both exhausted without supplying the demand for extra copies, on account of the drawings and descriptions they contained of this noted mineral field and the great work of the Sutro Tunnel, which is now not only of national importance, but of great interest throughout the mining world. We therefore reprint the engravings in an extra edition of this issue of the PRESS, in order to furnish those who desire it extra copies. The illustrations will thus be contained in one number, and render it convenient for examination, and in desirable form for mailing abroad. Papers can be had for 10 cents per copy.

MINERAL SPECIMENS FOR THE VIENNA EXPOSITION.—As many mine owners and others will doubtless find it to their interest to make exhibitions of their ores at the approaching World's Fair at Vienna, the subscriber would respectfully request all such to forward specimens and descriptions of the same, with brief account of the mines, when they may desire to do so, to the office of the MINING AND SCIENTIFIC PRESS, San Francisco. The expenses on such specimens, etc., to this city must be paid by the parties interested, but the expenses hence to Vienna as well as the cost of re-shipment, if required, will be borne by other parties. Proper care will be paid to all specimens of value, and such will be offered for sale at the Exposition if desired. Any confidential communication with reference to mining property may be directed to G. Kustel, Commissioner to the World's Fair at Vienna, care of MINING AND SCIENTIFIC PRESS. We hope that the daily and interior press will agitate this question and encourage miners to forward their specimens.

DEALERS IN MINING STOCKS.—Please notice the advertisement of Mrs. R. D. Hobart & Co., in our advertising columns.

A Coast Railroad South.—Advantages to the Country.

A convention to take action concerning the construction of a narrow-gauge railroad, through San Mateo County, has been called to meet at Redwood City on the 26th inst., and the proposition is said to be meeting with great encouragement. The route of the proposed road has not yet been settled. San Mateo County, under the provisions of the law, is permitted to subscribe $500,000 toward the construction of a road, which, with such private subscriptions as will be forthcoming, will be sufficient to build it. As a subsidy for a railroad through Santa Cruz County was carried at the last election, it is probable that the two will unite and thus form an independent road for over 100 miles south from this city. Although the Southern Pacific proposed to extend their road through Monterey and San Luis Obispo Counties south, it is highly probable that this movement may result in this independent road being carried on through these counties to Santa Barbara. Monterey County has, however, more length along the coast than both San Mateo and Santa Cruz Counties combined, and the lower part is thinly settled; while San Luis Obispo County with nearly as much coast line, is cut up into large three, seven, nine and eleven league ranches, used as sheep and stock ranges, so the population is small and it is sparsely settled. Once these counties are passed through, Santa Barbara will no doubt run a road north and connect with it, and it only remains for Los Angeles and San Diego to co-operate, and we will have an independent narrow gauge road along our coast which will be of vast advantage to the districts through which it passes.

The San Diego and San Bernardino railroad was formally opened on the 11th inst. and it is believed that the work thus inaugurated will be followed up by vigorous operations until the entire line is completed. From San Bernardino the deviation to Los Angeles will be small, and the distance from there to Santa Barbara not great. The people in the sections of country mentioned are all alive to the advantages likely to accrue in having an independent railroad, and will no doubt do all in their power to build it. In our opinion it is only a question of time. The success of the Denver and Rio Grande narrow gauge road, and others in different places has demonstrated the practicability of the system, and it is evident that they will nowhere be so extensively used or to such great advantage as in the mountainous districts of the Pacific slope. The "lower country," as we call it, is suffering under the plague of Spanish grants and large ranches, which necessarily restricts the population from becoming numerous, but were they cut up into even the very respectable acreage of an average California farm, not only the counties but the whole State would be benefitted thereby.

With the construction of a railroad through the counties mentioned, would begin a new era of advancement: naturally increased taxation and higher valuation of the land would compel or induce the large land owners to cut up their ranches in smaller divisions and sell portions. There are thousands and thousands of acres in the lower coast counties, now used as ranges for sheep and cattle, which, by a judicious cultivation could be made productive farms. Under the system at present in vogue, however, they may remain as they are for years and years, and meanwhile those counties see with envy their more fortunate interior and northern sisters materially advancing while they are under the control of a few land-holders, who, like dogs in the manger, will neither make proper use of their land or allow others to do so. These facts are patent to any one familiar with the lower portion of the State, but it is not customary to say much about them, as the idea is prevalent that it will hinder immigration.

In our opinion this is injudicious. What use are emigrants unless they can settle somewhere and make a home? If the lands are all held by a few, there is no place for them to locate. In many instances a man with 20,000 or 30,000 acres of land holds also an almost equal portion of Government land without any expense to him. The reason is that the grants made by the Mexicans were of such a nature as to render it possible for the grantee to take the best land and leave the hilly or mountainous tracts. In consequence of this where these grants cover the level land, the hills are not considered worth taking up, and so remain, and are made use of by the ranch owners as ranges for their cattle. Most of the central portion of the State was affected in the same way, but when the population was increased the large tracts were subdivided, and now, nowhere in the whole State is there a more enterprising, industrious or progressive people than in Napa, Solano and Sonoma counties. They are prosperous and permanent citizens. Small farms are the rule, not the exception. The products are varied and the manufacturing interests rapidly growing. The lower country will never become such until it has such an access of population as shall settle up its lands and have a permanent interest in its advancement. In no other way can this be better accomplished than by building a railroad through the counties mentioned. If such results would follow its completion as are probable, would not the people do wisely in investing in railroads and reaping their profit from increased value of their lands, permanent settlers, increase of products and general advancement proportionate to the importance of their counties.

There is no reason why the Southern counties should not be as prosperous as those north and east of San Francisco. In some respects they have the advantage, and certain products can be raised there through favorable climatic conditions which will not grow in the latter. It is to be hoped that before long a general movement will be inaugurated which will eventually put the whole lower coast in railroad communication with San Francisco, as it will not only benefit this city and the counties through which it passes, but the whole State at large.

Our Home Industries—The Foundries.

In our last issue we gave an account of what work was going on in our city foundries, and promised to continue the subject this week. A noticeable feature is the large amount of mining machinery of all kinds, which is being manufactured, indicating prosperity in that business, and an increase in the number of mines. Most of the foundries are engaged on this class of work, and it is probable that it will increase hereafter year by year. At the

Union Iron Works.

They completed a short time since a 40-stamp mill run with a Leffel turbine wheel, to go to Amador County, Cal. They also turned out a set of hoisting works, saw-mill and hoisting machinery to go to Sierra County. This machinery is all run with one engine, and is so arranged as to be disconnected and geared to a large overshot water-wheel. The shaft of the wheel runs through a tunnel 90 feet long. They built for the same place a 40-stamp gold mill, with Stanford's patent self-feeders run by a horizontal Stetson patent turbine-wheel. These wheels are being extensively used, and a mill at Los Gatos, Santa Clara County, has removed those which they were using and substituted wheels of this pattern. They have also put up a 20x30 hoisting-engine for Virginia City, and a pair of 18x27 hoisting-engines for same locality, with gearing for double set of hoisting-works; made two 54-inch boilers to go with them. Each engine bed had a heavy sole-plate for the gearing set upon. One sole plate of this job was 27 feet long, 32 inches wide, and eight in. thick. It had pillow blocks for the pumping engine, which is 22x48, and shaft of pumping wheel and blocks for hoisting gear set on it also, binding the whole work together. This heavy job has just been shipped. The hoisting wheels to go with it were 12 feet in diameter, and 3½ in. pitch. The wheels were built in sections and bolted together.

Besides this they have built at this foundry a set of hoisting works with 12x20 engine, all complete, to go to Napa County for a quicksilver mine; a 20-stamp and crushing mill complete, for Schellhurn, with eight 5-foot pans, 8 settlers, 8 feet in diameter and 4 agitators 7 feet in diameter, with retorts etc.; engine to go with this job was 18x42 with Scott and Eckert cut-off. They have on hand in the shops now a 20 stamp mill for Pioche, with 16x36 cut-off engine; this is a dry crusher with 6 pans, 5 feet in diameter, and 3 settlers 8 feet in diameter. The mill at Schellburn, as well as that at Pioche, are both being put up by White and Allen, millwrights; the same parties who built the new Raymond & Ely and the Camp Floyd mills. At this foundry they have also on hand a set of hoisting works, with 10x16 engine, all mounted on an iron frame so that it needs no timber or framing on arriving at its destination, being all ready for work. They have been turning out this summer, a number of boilers on odd orders, and a good many of Keyes' patent wrought iron tweere for smelting furnaces. They have, like all the others, been running full all summer.

The Vulcan Iron Works

Started up again about a month ago. They have been making extensive repairs and procuring additional facilities for turning out work. The shops are compact and neat, and everything is in good order. We are glad to see this old established institution again in the field for its share of patronage, and from appearances should suppose it had started in very satisfactorily. They are building two cutting machines for making wrought iron pipe, which are intended to cut a sheet four feet wide without moving the sheet. One of these is for Frank Smith's pipe works in this city, and the other for the California Water Company in El Dorado county. They are building a hoisting engine 12x24 of a new pattern to go to Amador county. Putting up a new cylinder for the engine at the Philadelphia Brewery, and doing considerable shafting and mill work for Treadwell & Co. Making a large number of axles for the North Beech and Mission, and for the Central Railroads. Doing mill work for the Golden Gate Flour mill, which will double its capacity. Building Hydraulic Press for repacking a fibrous material grown in Mexico; two hydraulic pumps are to go with it, one "fill up" and the other a pressure pump. The press rates at 150 tons. Some drying pan work is being done for the Frear Stone Co., and general repairs are being made for the woolen mills, or hoisting engines, etc.

The Pacific Iron Works

Have just completed a heavy contract of hoisting machinery for the Tejo Mine, in Mexico, and also a 15-stamp mill for the San Martin mine in Uruachi, Mexico. This mill was made in sections, no piece weighing over 200 pounds, as it had to be packed on mules part of the way, to reach its destination. They have recently sent a complete set of smelting machinery to Colonel H. F. Beksr, in Wallapei district, Arizona, for use at the mines there. They have also sent recently a set of hoisting machinery to the Arroyo copper mine near Ione City, in Amador Co., and a short time since completed a large order for the California Sugar Refinery, consisting of two vacuum pans, six blow-up pans, agitators, mixers, etc., doubling the capacity of the present works. They have just completed a set of pumping and hoisting machinery for the Hudson M. Co., in Calaveras Co., Cal., a mine recently sold to an English Company; also engine, boiler, pumps, etc., for Belshaw & Co. at the Cerro Gordo smelting works. They are now engaged upon some heavy pump gearing for the Yellow Jacket mine, Washoe, and a set of heavy hoisting machinery for the Kennedy M. Co., in Amador Cal. Building a 10-stamp mill for the Humboldt Canal Co., at Winnemucca, Nevada, and heavy shafting and mill machinery for the Golden Gate flouring mills; doing the usual amount of small and general repairing.

The Golden State Foundry

Has just completed a Knox & Osborne furnace for the California Quicksilver Mining Co., Lake county, and a partial furnace for the Valley Quicksilver Mining Co. in Napa county. Built a 16-stamp mill for the Black Bear mine, Klamath county; a lot of pans and mining machinery for Belmont, Nye county Nevada; quartz machinery to go to Kern county; pans etc., for White Pine; smelting furnace machinery for Idaho; hoisting works for Belmont; quartz mill machinery, stoves, dies, etc. for Washoe. They are just about completing a large lot of iron piers for two bridges in Los Angeles, of the same style as those in the bridge at Niles station, across the bay. They are getting up two double hoisting works, one of which is to go to Pioche; water wheel and machinery for a mill in Amador county; irons for new furnaces for the Oakville Quicksilver Co. in Napa county; a 24-foot overshot wheel for the St. Lawrence M. Co.; furnace work for the American Quicksilver M. Co., Napa county; and doing the usual amount of repairing and small work. At

McAffee & Spier's Boiler Works

They are making a boiler for the steamer Cricket of Los Angeles, locomotive style, high pressure, 5 feet in diameter, with return flues. Also fire box boiler 54x18 for a steam dredger at Portland, Oregon. Building two flue boilers 42x18 for a mining company; one boiler 42x16 and one 36x14, one of which goes to San José and the other is for a mining company. They are putting up a number of tanks for the California Sugar Refinery: also a large number of gasoline tanks used by the Maxim Gas Co. and oil dealers. Doing extensive repairs on boilers of steamers Alameda and Rival. They are quite busy at this shop doing considerable small work and general repairing and employ 70 men.

The Fulton Foundry

Have just finished an engine 10x20 for Wheeler & Osborne, to go to a saw mill at Ukiah; have also completed pumping and hoisting machinery for the New Idra Quicksilver Mining Co. A 6-inch Hooker steam pump for mining purposes is being made, and a large sized Brodie Crusher, for Heynemann & Co., the latter to go to Eureka District. Have recently finished castings for the Marin Water Co. and care for Belshaw & Co. at Cerro Gordo. Doing considerable general and small work.

The Occidental Foundry

Is at present employed making Hepburn pans; shoes and dies to go to Mexico; work for Tustins' windmills, etc. Making Martin's water engines which are generally adopted for use of stores, for hoisting purposes, etc., and small ones of the same pattern are being made for motors for sewing machines. Numbers of these engines are made at this foundry. They are doing considerable carriage and manufacturing work, and making castings for cars, such as boxes, brake-blocks, etc. Doing work for Sugar Refinery and miscellaneous work of all kinds.

The United States Branch Mint.

We here give an illustration of one of the finest buildings in the city, the most important of all the Branch Mints throughout the United States—in fact the largest mint in the world. Its location is on the northwest corner of Fifth and Mission streets.

The Exterior

Is fast approaching completion, and even now is sufficiently imposing to give promise of what its architectural beauty will be, when completed. The style is that which is known as the mixed Doric, and is singularly suitable to building of this class, being at once simple, bold, and strikingly grand, combining at once the characteristics of massiveness and beauty. It is quandrangular in shape and nearly square, being 192 feet in length by 186 feet in breadth, and 50 feet in hight. The front, facing Fifth street, is broken by a grand portico and two projecting wings. The portico which projects twenty feet beyond the main building, will be approached by a superb flight of twenty granite steps, twelve feet six inches in hight. The entablature, the pinnacle of which is thirteen feet higher than the mainhight of the building, is supported by six messive granite columns. The projecting wings in front and rear, project thirteen feet beyond the main building. These break the plainness of the exterior walls, and thus render the whole contour more agreeable to the eye. At the rear ascend two immense chimneys, each seventy-five feet higher than the building itself. The exterior walls are from five feet three inches in thickness at the base, to three feet nine inches at the top, and are deemed sufficiently massive to successfully resist the greatest earthquake shock that has ever been experienced on this coast. They are composed of an outer casing of stone backed with brick. This casing which varies from eight to eighteen inches in thickness in the middle of the walls, and which is two feet eight inches in thickness on the corners, is composed of two kinds of stone. The basement story is cased in massive blocks of granite furnished from the celebrated Penrhyn quarries of Placer county, by G. Griffith & Co. They seem to be capable of resisting the action of wind and weather for untold centuries. The remainder of the building is cased in freestone, furnished by a Californian, from Newcastle Island, British Columbia. No little fault is found with the quality of this stone, and there is no doubt that material superior and also cheap could have been obtained in California. There is no sufficient reason why it should not have been so obtained. But there is more fault to be found with the manner in which it is laid. It is all stratified stone, and should have been laid on its natural bed; instead of that it is placed on its edge parallel to the plane of stratification. This saves money in building, as the expense of cutting becomes thereby an inconsiderable amount, in some slabs almost nothing, but the durability of the whole structure is thereby lessened, as the stone is liable to split and chip off in the plane of its stratification. Besides it is far less able to resist the pressure of the roof, and each layer is less able to resist pressure of the superincumbent ones. We mention these facts without unkindness towards the contractor, but that the Government architect may explain, for his own benefit and the public, if there are any good reasons why the work should be done in such a manner for the United States. Our permanent Government buildings should be such as to praise rather than disgrace American architects and builders.

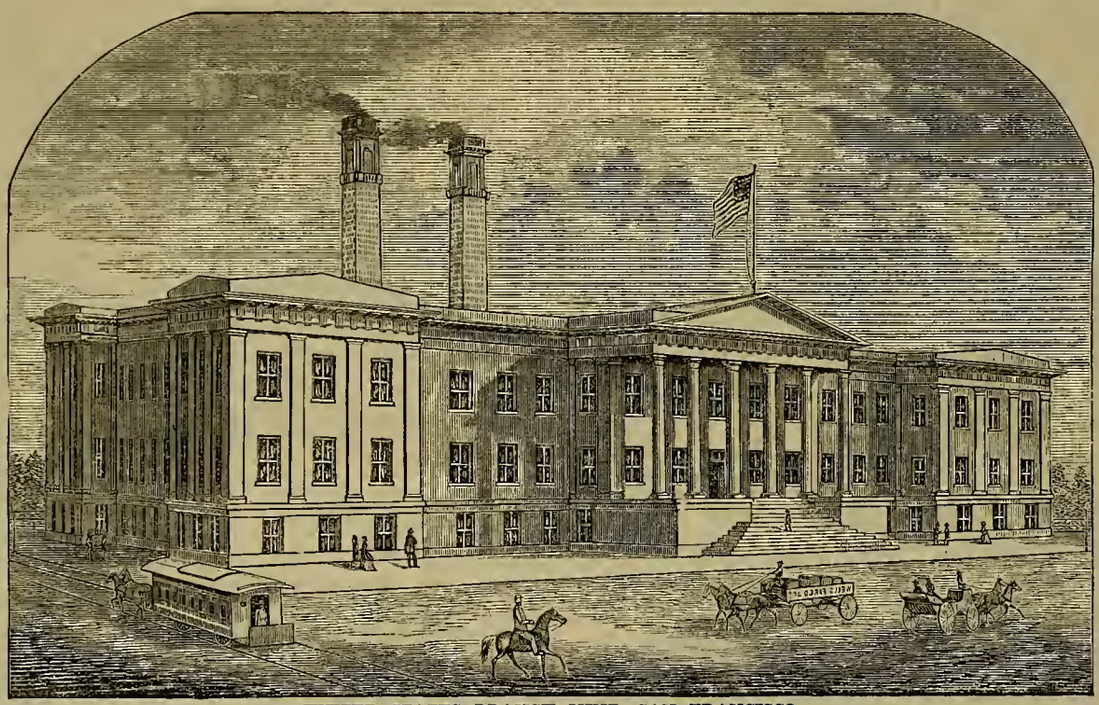
The building will be lighted by 280 plate glass windows with iron panels and mahogany sash.

The Interior

Is constructed on the same general plan throughout all the stories. Entering from Fifth street, you find yourself in a portico twenty-nine feet long and twelve feet six inches wide, leading to a noble corridor which extends the whole of the length of the building, and which will be one of its principle features. This corridor will be one hundred and eighty-eight feet in length by twelve in width, and its appearance when finished, must be highly imposing. Leaving the corridor, and passing on straight through some offices the visitor will find himself in an open court or atrium, in the center of the building one hundred and two feet six inches long and forty three feet nine inches in breadth, round which all the rooms on the various stories are located, which will furnish a thorough ventilation to all parts of the structure, and which will add still more to its resemblance to the classic piles of antiquity. On the second story a corridor will run round the whole court. The central court and the corridors are found on all the stories.

The Basement Story

Contains twenty-four rooms, including one large room fifty-two feet long by twenty feet wide, used as a boiler room. The rest will be used as machine shops, storage rooms for acids, etc., carpenters, etc., shops, sweep cellar for collecting dust lost from the bullion in the various processes of melting, refining, coining, etc.



UNITED STATES BRANCH MINT, SAN FRANCISCO.

The Main Story,

Which is entered by the portico and the vestibule already mentioned, has the space in front between the corridor and the outside walls divided into rooms which will be fitted up as offices for the chief officials of the mint. Behind the corridor and between it and the central court will be the mint banking rooms, and the apartments devoted to the officers of the Sub-Treasury and the Treasury of the mint. These run through both stories. Leaving them we find the grand central court flanked on one side by the melting room, and on the other by the coining room, behind which will be the bath room, annealing room, the ingot rooms, the engine room, etc. Altogether there are on the main story eighteen rooms. The average size of these, as also of those throughout the building, is about twenty-nine feet square, offering thus, magnificent accommodation, when compared to the cribbed, cabined, and confined apartments in which the workmen of the old Branch Mint have now to carry on operations.

The Second Story

Contains eighteen rooms, the same number as the main story. Here are also to be found, as before noticed, banking rooms of the mint. In the front of the building are offices devoted to the General Superintendent, to the principal Clerk, to the Assayer, Messenger, Report Clerk, etc. Flanking the central court on each side are the laboratory and adjusting room, where the coins, otherwise finished, will be weighed and tested by ladies before being allowed to leave the building. In the rear are apartments which will be devoted to capelling and to the humid assay of silver.

The Roof

Will be of fourteen-ounce copper, with sixteen-ounce on the gutters, which will be furnished by the New Haven Copper Company. The rafters will be of massive wrought iron, and the ceiling of the top story will be formed of corrugated iron, which will receive five coats of paint, and will be of a nearly white color. The corrugated iron will be furnished by the American Corrugated Iron Company of Springfield. The two main floors will have cast-iron joists, will be arched and will be finished in concrete. The floor of the basement story will be flagged with the same kind of freestone that is used in upper walls. The mouldings of all the rooms will be of cast iron, and the walls will be finished in three coats of plaster. All the cast-iron used is obtained from the Phœnix Works of Philadelphia.

The Cost

Up to the present has been $900,000. The work was begun in April, 1869, and the exterior will be completed in a very short time. The portico will be finished by the 10th of November, and the steps leading up to it by the end of the same month. The inside will be finished on the arrival of the ornamental iron from Bartlett, Robbins & Co., Baltimore, which is now on the way. The whole building will be thoroughly fire-proof. The number of men at present employed on the works is 65, of which 9 are stone mason. The work when completed will cost $1,500,000, and being not only the finest building of the kind in the United States, but in the world, will be one worthy both of the name and commercial and mineral importance of this coast and of the Golden City.

Corrosion of Gauge Glasses Again.

A correspondent writes from Pioche as follows:—"In your issue of Oct. 26th, you published a paragraph on the waters of Pioche which, according to your correspondent, contain hydrofluoric acid. The only proof given for such an assertion is that the glass pipe of the water gauge of the Pioche mill was etched.

Allow me to tell you that glass pipes, window panes, mirrors, etc., are very often spoiled by the wet air, and that steam under pressure will dissolve slowly all kinds of glass. The silicates of which the glass is composed are more or less soluble in hot water,—the alkaline silicates being carried out, silicate of lime only being left.

To resolve the question directly I have taken two gallons of the water of the Floral Spring Co., the same water used by the Pioche mine. I made this water alkaline by the addition of a little lime water, to fix the volatile acids. This water evaporated slowly, leaving a whitish residue, which placed in a leaden vessel and moistened with sulphuric acid effervesced greatly; but in putting a glass plate above the leaden vessel no traces of etching could be perceived.

I have also tried incrustations of the same water formed on the condenser of the Kentucky mine, which had formed slowly below the boiling point, and I have found these incrustations to be carbonate of lime. Unless your correspondent has found some other sources, hydrofluoric acid is scarce, and I believe it must be very scarce in Nevada, where fluor-spar, so common everywhere, is entirely unknown.

F. E. Durand,
Pioche.

We still adhere to the opinion that the etching or corrosion referred to *may* be caused by the presence of hydrofluoric acid in the water. Our correspondent is mistaken in supposing that fluor-spar is "entirely unknown" in Nevada, as it is frequently found there, although it may be unknown in the neighborhood of Pioche.

Corrosion of the glass pipes of water gauges *may* be due to humic acid, which is known to be a solvent of silica—and which is probably the agent by which vegetable organisms are enabled to assimilate that substance.

Corrosion may also be accelerated in a measure by friction—and no doubt is, especially where it takes place at the point of seperation between the water and steam. The constant agitation of the water at that point doubtless greatly facilitates the action of whatever acids may be present in the water.

We are aware of the destructive action of steam, moisture, and even air upon all kinds of glass; but the rapid corrosion of the tubes in the Pioche mill can scarcely be attributable to those agents alone.

Horse Disease.—The horse disease still continues in the Eastern States, to the great detriment of business. In may cases after the horses have partially recovered, they are attacked with new symptoms, which are said to be more fatal than the original disease. A number of mules in the collieries of Pennsylvenia have been attacked, causing a stoppage of mining and shipping of coal at several points. Fears are entertained that work at the collieries will be temporarily suspended.

Tin From Australia.—It is stated with reference to the probable future of the tin trade, that within 14 or 15 months from this time, 5,000 tons of pure tin metal will be exported from Sydney, and that not less than that quantity can be shipped regularly for years to come.

Transit of Venus.—Not less than twenty astronomers have made arrangements for taking photographs of the transit of Venus over the sun's dial, which is to take place in December, 1874.

Utah Mines.—We see by the Salt Lake *Herald* that Professor J. E. Clayton has recently visited Uintah and Brigham Cañon Districts, and speaks hopefully of their future. In Brigham he gave particular attention to the workings in the upper part of the Cañon, more especially the West Jordan and the Utah Mining Company's property. The West Jordan is presenting very encouraging features. The *Herald* says he speaks of the Utah Company's property with praise, and the magnitude and general arrangement of the works, with the thorough management of the same, elicited from him remarks of surprise. He says the Red Warrior lode contains a deposit of galena ore surpassed in extent only by the Comstock, and but for the low grade of the ore, in silver, it would be one of the most valuable mines on the Pacific Coast. It will be remembered that this property was favorably reported on by Mr. Henry Sewell, an occasional correspondent of ours, and his report is corroborated by Professor Clayton. We understand that the letter gentleman will shortly take up his permanent residence in Salt Lake City.

Encourage Local Manufactures.

One of the greetest drawbacks to the prosperity of San Francisco, end, indeed, the whole State, seys the *Bulletin*, is the want of proper encouragement to local manufectures. We know this is a trite statement; and further, that the truth of it is generally conceded. Great progress has heen made in manufacturing in this city within the past few years, notwithstanding the up-hill work which has been encountered. We are now menufecturing on a scele never hefore attained, hoth as to the variety aud quantity of articles made. Nevertherless, it has required considerahle pluck, loss of money and feith in ultimate success, to reach our present standpoint. What we now want is, that Californians shell patronize home industries. If we can make as good hoots and shoes as are mede in Boston aud other New England cities, and sell them ae cheap, give the preference by all meens to Celifornia goods, and thns retain at home the thousends of dollars annnelly sent abroad for these articles. A considerable chauge has alreedy heeu made in this direction. There is still room for improvement. We have the meterial and the labor and the capital for making all the boote and shoes required on this Coast, and we ehould do it. We will do it just as soon as all our people make up their minds to cover their feet with California-made boots and shoes. It ie said that our Eastern-made caudles cost us about one million of dollars per annum. There is no reason why this money ehould not he kept at home. We have two candle factories here, whose capacities can be largely increased, and they would he thus enlarged, were proper encouragement given. Merchants can do much to facilitate the demand, by embracing every opportunity to introdnce these candles iu the iuterior. It is no apology to say they have no time to atteud to this matter. They must take time. If they cannot see that it is for their interest to make this eacrifice they should give way to others.

We might go on through the list of our local manufactures with similar comments. A safe rule to ohserve ie this: Where the quality of the article is as good as the Eastern made, and the price is as low, purchase California made goods. In this way the millions annually sent out of the State will he retained for the development and improvemeut of home resources. Our local manufactures should he better patronized, while the variety ought to be extended. We can reduce the hoodlum element of this metropolis hy developiug manufactures, thus opening sources of employment for them. A system of thriving mauufacturing interests here will attract skilled workmen from ahroad, thus adding a large and respectable element to our population, creating an enlarged demand for the products of the soil, flocks and herds of California. An increased consumption of agricultural products will of course result in better prices to the farmer, and stimulate that indnstry with others. We shall then be lese concerned ahout ehips to take away our Wheat, Wine, Wool and Leather, and retain much of the freight money uow paid to traneport these products abroad.

Lead Ore.—A few days ago some specimeus of lead ore were received from Kootenay, British Columbia, by Mr. Fisk, of this city. He tested them, and although but a very small quantity of the ore was seut, the assay proved very satisfactory. It was ascertained that about 90 per cent. of the ore was the pure metal. The ore is met with in large quantities in the vicinity of Kootenay. The principal difficulty presented in the working of these mines, is their inaccessibility and the consequent trouble and expense of transporting the ore or metal. When the Canadian railroad is completed, a line of which is iutended to penetrate those isolated regions, these mines will no douht be developed, and become of great value to those who may have the capital and enterprise to work them.—*Oregonian.*

California Marble.—The Grass Valley *Union* has the following: There is an extensive quarry of marhle on the left bank of Bear River, one mile below the lower bridge of the Colfax road. The quarry has been worked for more thau a year, off and on, by a San Francisco company. Marhle of a very fine grain is taken out, and shipped to the bay. At the present time stone is being quarried for a vault in San Fraucisco. The marble is both gray and blue. In this county there is an abundance of fine marble which could be made a valuable industrial resource could it be got to market at reasonable prices.

It is proposed to tap the watere of Tulare Lake at ite lowest level by a navigahle caual, drawing ten feet in depth of water, with a width of 60 feet on the bottom aud 120 feet on the top, and to run this canal to tide water, on a grade of three inches to the mile; and as Tulare Lake is about 250 feet above the level of the sea, it would leave an elevation at Antioch of 200 feet to be utilized as a means of dischargiug grain iuto the holds of ehips. It is English capitel seeking investment in this enterprise.

Mountain Railroads.

The Western Division of the Coloredo Railroad (narrow gauge) has been completed from Golden, a distance of sixteen miles, to a point within three miles of Bleck Hawk. It is now open for business, and has heen in running order for the lest six weeks. Three locomotives formerly in use on the east approach of the Missouri river hridge are now used on this division, and find constant employment in the transportation of freight aud pessengers.

In some respects this is the most remarkable that has ever heeu used for passenger transportation. The line follows the ceñon of Clear creek, which is extremely narrow, in some ceses contracted to a width of 40 feet; it hes precipitous sides, from 80 to 1,000 feet in hight. Through this cañon the railroed finds its way, following closely to the side of the stream, but built upon rock foundation and heyond the reach of high water. The descent of the creek for sixteen miles is one hundred feet per mile, but it is extremely irregnler, in many pleces moving along with very low velocity and at other points plunging over falls from fifteeu to forty feet in hight. The steepest grade used is 175 feet per mile, and the shortest curve is 190 feet radius.

All the cars used are fitted with oue loose wheel at each axle, by which expedient the friction of the curvature is eliminated and the locomotives are enahled to draw trains with ease which it would be found impossihle to move if the cars were supplied with wheels of the ordinary constructiou.

The average speed of the road is eight miles per hour. The operation of a road with these characteristics being in some degree an experiment, the speed has been reduced to a limit which ie perfectly safe. It is anticipated that a higher speed may hereafter be used with entire eafety.

During the constructiou of the road many doubts were expressed ae to the practicability of its operation; but the large amount of husiness which ie now heing transacted over it, and the freedom from accident which has attended ite operation, have reudered it a matter of certainty that with proper care roads of this character, aud often with grades exceeding 200 feet to the mile, may he advantageously used.

The grading of the road hetween Golden and Julesburg, a distance of 215 miles, was commeuced on the 15th of September, and is being prosecuted with a strong force. Forty miles of the road are graded, aud it is expected that the force now engaged on the road will be ahle to grade two miles per day during favorahle weather.—*Omaha Herald.*

Extensive Mining Enterprise.—For several weeks a nnmber of persons have been prospecting and making arrangements for bringing water upon and miuing one of the bars on Flint Creek. The matter was determined a few days ago, the prospecting haviug been favorable and the preliminaries satisfactorily arranged, and a Joint Stock Company with a Capital of $16,000 organized with Jas. H. Batterton, Prest., C. B. Adriance Sec., and E. S. Stackpole Treasnrer. The ground is situated on the east hank of Flint creek, eeven miles above Coberly's. One huudred and sixty acres of ground have been entered as mineral lands and a dump of 100 acres negotiated for. The ground is on a bar 350 feet above the creck, with 20 to 60 feet of gravel, prospecting satisfactorily from the grass roots down. The water is to be obtained from Boulder and Flint creeks. Mr. Batterton has surveyed the line—something less than ten miles in length—and arrangements are ahout consummated to have a ditch of 1,000 inches capacity built this winter. The ditch will be let by contract. It is estimated it will cost about $6,500, and the entire cost when ready for work will not exceed $12,000. A number of prominent men of Deer Lodge and Helena are interested in the enterprise and it is represented to us to promise well for good pay for many years. This is another of several pioneer enterprises we have noted recently looking to the development of the immense quantity of "prospecting" bar diggings existing in this valley, which have hitherto been slighted in the rush for rich gulch diggings, but which promise a permanency of good yield, and which associated capital is turning attention to as the best investment it can make. The day is comiug when "the rivers will rnu to the hills."—*Montana New Northwest.*

Successful experiments have been recently made in England with a new Railway Brake, worked hy electricity. The invention consists in the application of electro-magnets, exerting a force of 600 lbs., to pulleys on a swing shaft uuderneath the carriages. By merely pressing the key the guard is enahled to bring the train to a stand-still.

Gold.—Australia and California, it is estimated, have together produced gold amounting in value to $1,500,000,000 since 1852.

A Phase of Miner's Life and Death.

In October of 1871, there came to Benneck for supplies, a miner riding a mare followed hy a colt. He purchased his goods, peid for them in dust, exhibited a well-stored purse, told some perties he hed a "good thing" on one of the trihutaries of the Big Hole, and got out of town. The seme season a half-breed living in Bitter Root, while hunting on a tributary of the Big Hole toward Salmon, discovered this miner et work, and was paid several hundred dollars not to reveal his whereebouts. It is said the half-breed keeps his compact faithfully. It appears also thet the miuer told parties that in good time he would make puhlic the locality of the diggins, that he wished first to get two or three old frieuds here. This much of life.

During the preseut season the surveying party running the railroad line across the Big Hole and Salmou country, found ou one of the tributaries of the Upper Big Hole the skeletou of a man, evideutly dead some monthe, a eaddle and cantinee, the letter seid to have contained a considerahle amount of gold. Recently Thos. Levatta and Thos. Pamhrum, who have, with "Dominee," heen hunting for the diggings of the mysterious miner in that region found the mare and colt with which he was seen in Bauuack iu '71, hut no trace of the miner or diggings. Ahout a month ago there came to Deer Lodge a party of three meu from the Statee who had a letter of instructions from a miner to out fit at French Gulch, and take a certain trail which would lead them in a direction hy which they could reach the miues, which he told them was very rich. They also had a rude draft of the couutry in which the miues were situated, said to he in a rough couutry covered with thick heavy timher. These meu, and also Levatta's party, are now searching in that immense helt of unknown country for the mines found by the solitary prospector, from which he had taken a good supply of gold to which he had invited his old friends, and in preserving the secret of which he had yielded up the companionship of his fellows, his comfort and his life. These are the liuks of circumstantial fact. It ie fair to iufer that the skeleton was that of the mysterious miner of Bannack, and that in the mountain fastnesses he died, of accident or illness, famished of food or perished of cold will likely uever be known until Time shall end and Death yield its archives to the Great Ruler. We have not learned the uame of the man, but the story, which is true, commended itself as one of those incidents, not remarkable to our Territorial readers, hut showing to those of the older communities a phase of frontier life, and the perils that are sometimes eucountered in the endlees search for gold.

The Resources of Japan.

A writer in *Blackwood's Magazine*, speaking from persoual knowledge of the uatural resources of Japan, says: "In miuerals the country is very rich. The precious and useful metals are found there in large quantities, as well as coal, and a few mines are alrcady worked on an important scale. Rock crystal is ahuudant, pearle and corals are fished along the coast, hut no diamonds, or indeed any other stoues of value, have yet been found. We all know how ahle the Japanese are in metal working, especially in cutlery and gold and copper; we have but a general idea of the matchless finish and subtle delicecy of the handling, and of the talent which that handling reveals. With the skill which they have so long possessed, and with the capacity of imitation (let it he remembered that they built their first steamboat and its engine solely from a description in a Dutch hook), it may he expected that they will soon produce all the hardware with which we uow supply them. In manufacturs generally there has not, so far, beeu much development, though several Europeau erticles, such as window glass, grape wine, and beer are beginning to he made on a small scale. Iu the staple products of Japan, in lacquer, procelain, and silk crape, no change can possibly be wished for; they are so perfeet as they are that foreigners have not leerned to equal them. Indeed, the secret of good lacquer and of weaving silk with the same pattern on both sides has uever been discovered outside Japau.

American Coal.—The exportation of American coal to England has already hegun, and several hundred thousand tons have been purchased on English orders. The purchases are of soft or bituminous coal, which is more commonly used in Europe than the anthracite. Several vessels have left Georgetown, D. C., with cargoes of coal for foreign ceuntries, and others are expected to clear before the close of navigation. English manufacturers will uot be able to compete very long with American industry if they have to use American coal. The manufacturers must come where the coal is cheap.

A new rifle, the invention of a Wurtemhurg gnnsmith, is attracting the attention of the Prussian Government. It is said to be capahle of firing twenty-six shots per minnte, and to have a range of over 1,300 yards.

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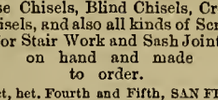
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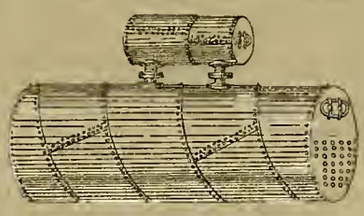

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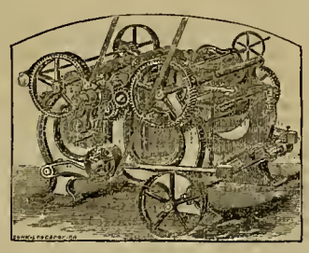

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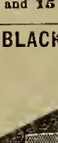
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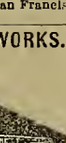
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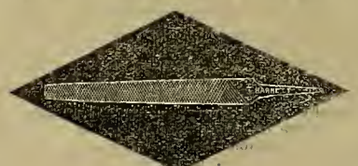

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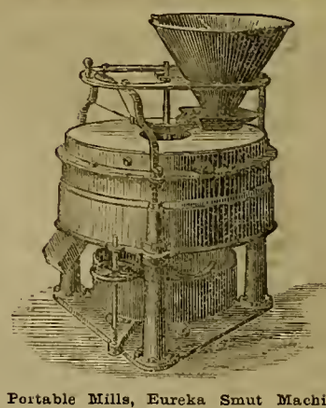

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FOR WEEK ENDING OCTOBER 22d, 1872.*

FILTER.—Matthew Cooke and James W. Watt, Sacramento, Cal.

MODE OF LUBRICATING MACHINERY.—Alexander P. Gross, Vallejo, Cal.

REFLECTING-LANTERN.—Emil Boesch, S. F., Cal

LUBRICATOR.—John E. Louergan, Sacramento, Cal.

SASH-HOLDER.—Henry Polley, S. F., Cal., assignor to himself and Anthony Rosenfield, same place.

By Special Dispatch, Dated Washington, D. C., Nov. 19th, 1872.

FOR WEEK ENDING NOVEMBER 5TH, 1872.*

RAILWAY FROG.—William Close, Sacramento, Cal.

MACHINE FOR CROZING AND CHAMFERING.—Otto Osten, Tahoe City, Cal.

DUMPING CAR.—John R. Dubois, Virginia City, Nevada.

TRADE MARKS.

MEDICINE.—Thomas Boyce and Francis McKenzie, S. F., Cal.

WHISKEY —F. Chevalier & Co., S. F., Cal.

MUSTARD.—H. O. Hudson & Co., S. F., Cal.

———*The patents are not ready for delivery by the Patent Office until some 14 days after the date of issue.

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Text of Interesting Decisions in Patent Cases.

COMMISSIONER'S DECISIONS.

W. T. GARRATT *vs.* N. SIEBERT.—*Interference.*

[*Appeal from the Board of Examiners-in-Chief in the matter of the interference between the application of Wm. T. Garratt, filed October* 7, 1871, *and the patent of Nicholas Siebert, granted February* 14, 1871, *for* LUBRICATORS.—*Decided October*, 21, 1872.]

The one first to invent a new and useful device is entitled to the protection of a patent, even if its production was accidental and not appreciated at the time.

LEGGETT, *Commissioner:*

The testimony in behalf of Siebert fixes the date of his invention in May or June 1870. Garratt has introduced in evidence a drawing—"Exhibit A"—representing devices attached by him to the lubricator described in the patent of James Roscoe, December 23, 1862, upon an engine in the San Francisco water works in October 1869. The turning question is whether "Exhibit A" embodies the invention in controversy. The Roscoe lubricator was designed specially to be employed upon locomotives, and to use tallow as a lubricant. It consists of a vessel, to be nearly filled with tallow and closed steam-tight, connected with the steam-cylinder by a pipe entering its upper part above the tallow, and is provided with an air-vessel within and a cock at its bottom for drawing off the surplus water of condensation. The steam heats and melts the tallow, and at each stroke of the piston conveys particles of it, with the water of condensation, into the cylinder. When the steam is cut off; as in descending a long grade, the expansion of the heated and compressed air within the air-vessel causes an overflow of the tallow and the continued lubrication of the machinery. This device proving inefficient, as applied by Garratt to the water-works engine, he connected a vertical pipe with the lower portion of the tallow-vessel and the steam-pipe, and provided it with two cocks near its upper and lower ends. This connecting-pipe extended above the top of the tallow-vessel, and the consequence was, whether foreseen or not, is immaterial, that the steam in the connecting-pipe became condensed and filled it more or less with water. As there were now two steam connections communicating, respectively, with the upper and lower parts of the tallow-vessel, and proper valves for regulating the admission of steam and water in the new connecting-pipe, and the steam-pressure was equal in both pipes, there was practically only the weight of the water left to force up the lubricant, which, even in the original Roscoe cup, was always in a molten state; otherwise the air-vessel could be of no service. This constitutes precisely the device in controversy. There is much to indicate that, as at present understood, it was a mere accident on the part of Garratt. The evidence goes to show that he merely intended to introduce steam into the lower part of the tallow-vessel. His connecting-pipe was not enlarged specially to form a condenser such as is shown in the two cases under consideration. Nevertheless, he presented all the elements of these cases in a practical device, which, according to the testimony "worked well." The law does not contemplate inquiry into the intentions which prompt the construction of mechanical devices. It is only proper to consider what is actually produced, and that, with all its incidental advantages, the inventor or discoverer is entitled to, whether he knows what he has done or not.

I agree with the Board that abandonment is not proved against Garratt, and their decision awarding priority to him is affirmed.

Academy of Sciences.

Fossil Remains in Alaska—The Yellowstone Country.

The regular meeting of the California Academy of Sciences was held on Monday evening last, President Davidson, in the chair. The following new members were elected: H. F. Teschmaker, Professor Ezra S. Carr, and Joseph A. Hoffman. Among the donations to the cabinet were some

Interesting Fossil Remains

Which have just been received by the Alaska Commercial Company, from Elephant Point, in Eschscholtz Bay, Kotzebue Sound. One was a tusk of the *Elephas Primogenus*. It is very symmetrical from socket to point, weighs 155 pounds, 10 feet long and measures in one place 20 inches round. The jaws, with two teeth of the same elephant were also presented. The thanks of the Academy were voted to the company for their liberal and valuable contribution. This is one of many evidences the Academy has received of an awakened interest in its welfare and progress. The deposit where these remains are found, was discovered in 1824. It is at the bottom of a cliff about 90 feet high. These specimens were the only two perfect ones found by the *Eustace* this voyage. The Alaska Commercial Company have promised to assist the Academy hereafter, and know where there are two entire fossil elephants on the Aleutian Islands, and Professor Davidson hoped steps would be taken by the Academy to procure one of these before it should be taken by parties East.

Professor Dall of the United States Coast Survey, stated that the remains of the mastodon abounded along the northern shores of Siberia and of this continent, and are usually found on the surface. In Alaska and other northern portions of America, the snow falls sufficiently in the summer months to expose the bones to the action of the weather, and commonly only the tusks and teeth, being of ivory, are well preserved, and these are so far affected as to destroy their value as a commercial article. The tusk now received by the Academy was the finest specimen he had ever met with. In Siberia, being perpetually imbedded in ice and snow, the fossil ivory is perfectly preserved.

An Interesting Scientific Question

Was connected with the locality where the fossils were met with in Alaska. Kotzebue, who first discovered this deposit, stated that they were found at the foot of a cliff of solid ice, which was covered with a layer of soil. Subsequent examinations had confirmed this fact. But since Kotzebue's visit to that coast a portion of the cliff had disappeared, as if by the melting of the ice, and the depth of the bay had been reduced. This cliff is formed of a solid, clear blue ice, in places surmounted by a layer of from five to six feet of blue clay, and this covered with vegetable mould. From the topography of the country it could not be taken as evidence of glacial action, and it seemed equally improbable that a living stream had ever emerged at this point, and so deposited the carcasses of elephants on the coast and overlaid the ice-barrier with earth. Professor Dall was impressed from observations he had made that the whole coast of Alaska is gradually rising, and landmarks noted there were no more ancient in their emergence than the elephant remains. Among the other donations to the cabinet was a male specimen of the *Chimaera Colei*, a fish found on the coast, with an egg taken from the same specimen. Dr. Kellogg described the *Hibiscus Californicus* or wild hollyhock, which plant has a fibre similar to ramie. It is found in the tules and he thought that this strong fibrous material should be utilized as it might develop an industrial interest.

Professor Davidson then explained some new and abstruse problems in mensuration on the blackboard. Professor Bradley and Dr. Curtis of

The Yellowstone Expedition

Under Professor Hayden, left Ogden early in June, and the party which Professor Bradley accompanied shaped their course for the valley of Snake river. Their route lay through a belt of country that had hitherto been the most unknown of all the great West. Guides were procured among the trappers, but even by these auxiliaries a great portion of the route was traversed for the first time. The party reached Fort Hall on the 3d of July, and sighted

The Tetons,

Eighty miles distant. These famous monuments long since laid down on the maps, were supposed to consist of three prominent peaks; but in reality they embrace considerable ranges, with quite a number of high elevations. The party found the Snake river impassable, and made a circuitous detour to the west of the main Teton. After leaving Fort Hall, for a distance of 100 miles, an outcropping of limestone was noted, with an abundance of trybolites, having the typical form of the Quebec group, This group had not previously been recognized west of the Mississippi valley. The basalt formation was encountered in the valley of the Snake, which extends to the Columbia river. Two extinct craters were reached, and the character of the lava indicated that the overflow had been at a recent period. Quartz pebbles were abundantly mixed with the lava indicating that the eruption had come from below a water bed. To the north of these craters were the sandhills, and a large section of country was broken with domes, some of considerable elevation, formed of loose drifting sands. The central peak of the sandhills is of volcanic rock, rising 1,500 feet above the surrounding level. No distinct crater was found in these mountains, but large masses of volcanic matter in the valleys indicated a volcanic source in the vicinity. Along the valley of the Snake cliffs of basalt rose 1,500 feet perpendicular. At one point a trip of fine grazing ground was discovered, but probably not adapted for grain, from the severity of the winters. In ascending the Tetons, Professor Bradley reached an altitude above the sea of 12,000 feet, and others of the party reached the summit of the highest peak, 13,400 feet. The valleys were once the beds of great lakes. There were found here the upper Silurian and Devonian limestone of the Mississippi Valley, underlaid with the sandstone of the Quebec group. There were also representations of the Potsdam limestone, but presenting no fossils. In the cañons of the Tetons, drifts of snow eighty feet high were encountered. Some of the cliffs towered perpendicularly to the height of 2,000 feet. On one of the summits, reached with great difficulty, were discovered the apparent traces of an ancient fortification, but what purpose such a work was adapted to serve in such a location was a mystery to the explorers. The course of Henry's Fork was followed along a basaltic floor extending to its source, a small lake. On the west side of this lake was

An Immense Crater,

Having a length of two miles by one in breadth and a depth of 1,200 feet. On reaching the base of Sawtelle's Park, evidences of civilization were met with for the first time in many weeks, and on Sawtelle's ranch in this secluded dell in the illimitable expanse, a mowing machine of the latest pattern was noticed in operation. No present volcanic action was met with until reaching the mouth of Gibbon's Fork, from which point the party entered

The Fire Hole Basin,

And encountered hot springs and geysers innumerable. Many of the principal geysers in the basin have received their designations from previous explorers. Some of the larger throw up bodies of hot water from two or three feet in diameter to a height of ninety feet and upwards. "Old Faithful," so-called from its regularity, spouts every sixty-five minutes, throwing a heavy body of water to a height of 160 feet, and continues in action for seven minutes. Others spout at irregular intervals, some not more frequently than once in twenty-four hours.

The Grand Geyser,

Which is the largest and most magnificent known to exist in the world, in its buoyant mood elevates a stream of water to a height of three hundred feet, the eruption being attended with a cloud of steam, and causing the ground to shake violently for some distance round about. Immediately preceding the eruptions of this geyser the ground vibrates as if from the pulsations of an immense steam pump, and these vibrations continue until the column of water descends. The geysers deposit silicious materials in various forms. The general elevation of the region about Yellowstone Lake is between six and seven thousand feet above the sea level, and while camped on the shores of this sheet, the explorers counted 475 prominent mountain points. On the summits of the mountains were found huge beds of gravel showing that they had been below a water surface at some period. A cañon at the outlet of Lewis Lake, adjoining the Yellowstone Lake, was explored, and found to rival in the grandeur of its scenery the great cañon of the Yellowstone. At the base of the Teton range were found indications of

Glacial Action,

And five glacial lakes were examined. A valley, fifty miles in length by ten in breadth, sets off to the east of the Tetons, affording a fine grazing tract, but the temperature unfits it for general agricultural purposes. The exploring party returned to Fort Hall and disbanded in the latter part of October.

Dr. Curtis followed Professor Bradley in a few general remarks on the results of the expedition. In examining the geysers he had found animal life in a temperature of 186°. The creatures were of a peculiar form and evidently in a transition state. The temperature of some of these hot springs the thermometer indicated to be as high as 190°. The elevation of the fire-hole basin is 7,500 feet, and a night seldom occurred during the time the party were encamped therein that frost was not experienced. On the 18th of August they were obliged to break the ice while performing their ablutions, and the surface would again freeze over while one was engaged in the application of the towel, with springs of boiling water springing from all sides.

The Great National Park,

In which all the wonders of nature described are located, embraces 3,795 square miles, according to the lines laid down in the Act of Congress establishing this great "pleasure ground." Within its limits are contained not less than ten thousand boiling springs and geysers of varying character and magnitude. The Yellowstone Lake has a shore line of 375 miles, and its bed is elevated above any piece of land east of the Mississippi. It is undoubtedly the highest body of water in the world. Cascades and cataracts of great magnificence abound in the preserve and many other marvels of scenery and curiosities of nature. The park is easy of access through mountain passes on different sides, and a branch leading thither from the Pacific Railroad could be constructed without encountering any great engineering difficulties.

TELEGRAPHIC COMMUNICATION.—San Francisco is now in telegraphic communication with Adelaide, South Australia, and the Mayors of the two respective cities have exchanged congratulations. According to the New York *Observer*, the distance from Melbourne by the route traversed by the telegraph is 16,000 miles, the largest distance ever traveled by a telegraphic dispatch. Since then the line has been extended to Adelaide, some distance further. The *Observer* says: This telegram came across the Australian Continent, under the Indian Ocean, through the Sunda Islands to Hindostan; under the Arabian Sea, up the Red Sea, across the Isthmus of Suez, under the Mediterranean, across Western Europe to London, under the Atlantic Ocean to New York, whence it flashed across the American Continent to San Francisco, where it was published on the same date that it brought from Melbourne—sixteen thousand miles distant by its route. San Francisco lies in latitude 37 degs. 47 mins. north of the equator, and in longitude 122 degs. 36 mins. west of Greenwich. If the forwarding machinery were perfect a dispatch sent from Melbourne would reach this city 15 hours before the hour which it was dispatched, on account of the difference of time.

GOLD IN VIRGINIA.—The telegraph informs us that a series of well-defined gold-bearing veins have been discovered near Kelly's Ford, five miles from Rappahanock Station, Virginia. The rock is said to yield from $60 to $100 per ton, and the ledges give evidences of permanency.

SCIENTIFIC LECTURES.—Dr. Payne will deliver another free lecture to the ladies and gentlemen of San Francisco, at Platt's Hall, on Monday night, Nov. 25th. Subject: Heart, Lungs and Appendages, etc. The last lecture was listened to by a full house.

San Francisco Metal Market.

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, Nov. 21, 1872.

IRON.—			
Scotch Pig Iron, ₱ ton	$60 00	@	65 00
White Pig, ₱ ton	60 00	@	65 00
Refined Bar, bad assortment, ₱ lb	— 04½	@	— 5
Refined Bar, good assortment, ₱ lb	— 05	@	— 5½
Boiler, No. 1 to 4	— 05½	@	— 06
Plate, No. 5 to 8	— 06½	@	— 07
Sheet, No. 10 to 13	— 07½	@	— —
Sheet, No. 14 to 20	— 07½	@	— —
Sheet, No. 24 to 27	— 08	@	— —
Horse Shoes	8 00	@	
Nail Rod	10		
Norway Iron	8		
Rolled Iron	5		
Other Irons for Blacksmiths, Miners, etc.	5½	@	6½
COPPER.—			
Sheathing, ₱ lb	— —	@	— 45
Sheathing, Yellow	— 38	@	— 40
Sheathing, Old Yellow	— —	@	— 13
Composition Nails	— 28		— 30
Composition Bolts	— 28		— 34
TIN PLATES.—			
Plates, Charcoal, IX ₱ box	18 00	@	— —
Plates, I C Charcoal	14 00		— —
Roofing Plates	15 50		— —
Banca Tin, Slabs, ₱ lb	— 50		— —
STEEL.—English Cast, ₱ lb	— 19		— —
Drill	19		— —
Flat Bar	19		— —
Plough Points	3 75		4 00
Russia (for mould boards)	12½		15
QUICKSILVER.—₱ lb	— 85		— 87½
LEAD.—Pig, ₱ lb	— 5½		— 6
Sheet	— 10		— —
Pipe	— 9		— 10
Bar	— 6½		— 7
ZINC.—Sheets, ₱ lb	— 11		— 11½
BORAX.—Refined	— 28		— 30
Borax, crude	— 5		— —

Leather Market Report.

SAN FRANCISCO, Thursday, Nov. 21, 1872.

City Tanned Leather, ₱ lb			26@28
Santa Cruz Leather, ₱ lb			26@28
Country Leather, ₱ lb			25@28
Stockton Leather, ₱ lb			28@28
French skins continue firm. All California skins are scarce and bring full prices.			
Jodot, 8 Kil., per doz	$60	00@	
Jodot, 11 to 18 Kil., per doz	66	00@	85 00
Jodot, second choice, 11 to 15 Kil. ₱ doz	66	00@	75 00
Lemoine, 16 to 18 Kil , ₱ doz	75	00@	77 50
Levin, 12 and 13 Kil., per doz	68	00@	70 00
Cornelian, 16 to 18 Kil., per doz	63	00@	65 00
Cornelian, 12 to 14 Kil., per doz	56	00@	60 00
Ogereau Calf, ₱ doz	54	00@	
Simon, 18 Kil., ₱ doz	60	00	
Simon, 20 Kil. ₱ doz	65	00	
Simon, 24 Kil. ₱ doz	72	00	
Robert Calf, 7 and 8 Kil	45	00@	48 00
French Kips, ₱ lb	1	10@	1 30
California Kip, ₱ doz	55	00 to	70 00
French Sheep, all colors, ₱ doz	8	00@	15 00
Eastern Calf for Backs, ₱ lb	1	15@	1 25
Sheep Roans for Topping, all colors, ₱ doz	9	00@	13 00
Sheep Roans for Linings, ₱ doz	5	50@	10 50
California Russett Sheep Linings	1	75@	5 50
Best Jodot Cal f Boot Legs, ₱ pair	5	25	
Good French Calf Boot Legs, ₱ pair	4	50@	5 00
French Calf Boot Legs, ₱ pair	4	00	
Harness Leather, ₱ lb		30@	37½
Fair Bridle Leather, ₱ doz	48	00@	72 00
Skirting Leather, ₱ lb		34@	37½
Welt Leather, ₱ doz	30	00@	50 00
Buff Leather, ₱ foot		18@	21
Wax Side Leather, ₱ foot		20@	22
Eastern Wax Leather		26	

Mining and Other Companies.

Owing to the time necessary to mail the present large edition of the M. & S. Press we are obliged to go to press on Thursday evening—which is the very latest hour we can receive advertisements.

Altona Gravel Mining Company—Location

of works, Grass Valley, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment (No. 4) levied on the third day of October, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Boynton, C W	20	200	$20 00
Boynton, C W	254	18	1 80
Carman, William	102	100	10 00
Carmun, William	155	35	3 50
Carman, William	259	12	1 20
Coffman, Mary	230	10	1 00
Coffman, Mary	278	1	10
Dodge, D F	14	400	40 00
Grant, Emanuel	231	40	4 00
Orant, Emanuel	232	20	2 00
Orant, Emanuel	233	10	1 00
Orant, Emanuel	234	10	1 00
Oray, Mrs. L B	220	50	5 00
Oray, Mrs L E	251	5	50
Jeffree, E E	29	100	10 00
Jeffree, E B	30	100	10 00
Jeffree, E B	154	70	7 00
Jeffree, John T	15	400	40 00
Jeffree, John T	16	200	20 00
Jeffree, John T	35	100	10 00
Jeffree, John T	36	100	10 00
Jeffree, John T	37	100	10 00
Jeffree, John T	38	100	10 00
Jaffree, John T	238	370	37 00
Jeffree, John T	268	125	12 50
Pinkham, S	145	100	10 00
Pinkham, S	258	9	90
Sparrow, S J, Trustee	208	25	2 60
Sterling, R W	61	100	10 00
Sterling, R W	62	50	5 00
Sterli g, R W	63	50	5 00
Sterling, R W	64	25	2 50
Sterling, R W	65	25	2 50
Sterling, R W	67	25	2 50
Sterling, R W	70	20	2 00
Sterling, R W	71	20	2 00
Sterling, R W	73	10	1 00
Sterling, R W	267	36	3 60
Stokes, W C	215	10	1 00
Stokes, W C	280	1	10
Tardif, William	25	100	10 00
Tardif, William	174	35	3 50
Tardif, William	263	12	1 20
Thomas, Reuben	217	10	1 00
Thomas, Reuben	279	1	10
Wilder, David, Trustee	281	2	20
Wilder, David, Trustee	291	500	50 00
Wright, H N	210	75	7 50

And in accordance with law, and an order of the Board of Trustees, made on the third day of October, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at No. 327 Montgomery street, San Francisco, Cal., on the 25th day of November, 1872, at the hour of 10 o'clock A. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

DAVID WILDER, Secretary.

Office, 28 Merchants' Exchange, California street, San Francisco, Cal. no9-3t

Excelsior Silver Mining Company—Location of works, Yellow Pine District, Lincoln County, Nevada.

At a meeting of the Trnetees of the above named company, held October 29th, 1872, at the office, No. 640 Washington street, San Francisco, it was, on motion, ordered that the following resolution, which was unanimously passed at a meeting of the Stockholders, held October 28th, 1872, be advertised for one month in the Mining and Scientific Press, and a personal notice served on each member:

Resolved—That we, the Stockholders representing in our individual names 4,480 shares of the Excelsior Silver Mining Company, do hereby mutually agree to return our individual certificate or certificates of stock now held by us and standing in our names, agreeing that upon a pro rata division of the entire stock between the stockholder, that we will individually pay a monthly assessment of ten dollars ($10) per month for one year, unless sooner rescinded by the Trustees of said mine.

Also, that said monthly assessment shall be paid on or before the tenth day of each month, commencing November 10th, 1872. By order of Trustees,

W. A. KOLLMYER, Secretary.

no2-1m

Golden Rule Mining Company—Location

of works: Chili Bill, Tuolumne County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of November, 1872, an assessment of five cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary at the office of the Company 432 Montgomery street, (Room No. 5) San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the third day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the fourth day of January, 1873, to pay the delinquent assesement, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. B RUSSELL, Secretary.

Office, Room No. 5, 432 Montgomery street, San Francisco, Cal.

Great Blue Gravel Range Company—Location of works, Blue Gravel Range, Placer County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 16th day of November, 1872, an assessment of Ten Cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, Room 5 and 6, No. 302 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Wednesday, the 18th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the 7th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale.

By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room 5 and 6, No. 302 Moutgomery street, San Francisco, California. no23

Hudson Gold Mining Company—Location of works, Cherokee Mining District, Plumas County, State of California.

Notice is hereby given that at a meeting of the Trustees of said Company, held on the 11th day of November, 1872, an assessment of 7½ cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, Room 5 and 6, No. 302 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 16th day of December, 1872, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 6th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of the sale.

JOS. L. KINO, Secretary.

Office, 411 California street, San Francisco, California. no16-4t

Indus Gold and Silver Mining Company—Location of works, Virginia City, Storey County, Nevada.

NOTICE is hereby given that at a meeting of the Board of Trustees of said Company, held on the 19th day of October, 1872, an assessment of fifty cents per share was levied upon the capital stock of said company, payable immediately, in gold coin of the United States, to the secretary, at No. 24 Merchants' Exchange, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 23d day of November, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 16th day of December, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

DAVID WILDER, Secretary.

Office, 24 Merchants' Exchange, California street, San Francisco, Cal. oc26-4t

Kincaid Flat Mining Company—Location of works, Kincaid Flat, Sonora, Tuolumne Co., Cal.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 18th day of October, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Milo Hodnley	27	10	$30 00
Milo Hodnley	28	10	30 00
Milo Hodnley	81	20	60 00
Milo Hodnley	82	20	60 00
Milo Hodnley	83	20	60 00
Milo Hodnley	84	20	60 00
Milo Hodnley	87	13	39 00
Milo Hodnley	92	20	60 00
Milo Hodnley	94	25	75 00
Milo Hodnley	95	20	60 00
F Vassault	93	50	150 00

And in accordance with law, and an order of the Board of Trustees, made on the 18th day of October, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the auction rooms of Henry A. Cobb & Co., 219 Sansome street, on the tenth day of December, 1872, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale. R. H. CORNELL, Secretary.

Office, 217 Sansome street, up staire, San Francisco, California no23-3t

Mammoth Blue Gravel Company—Location: Chalk Bluff District Nevada County Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 16th day of November, 1872, an assessment of eight cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the secretary.

Any stock upon which said assessment shall remain unpaid on the 3d day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale, at public auction and unless payment shall be made before, will be sold on Monday, the 13th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.

Office, room 37, New Merchan s' Exchange, (third floor), California street, San Francisco, Cal. no23

Mina Rica Mining Company---Location of works, Auburn Mining District, Placer County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 19th day of November, 1872, an assessment of thirty cents per share was levied upon the capital stock of said Company payable immediately in United States gold coin to the Secretary at the office of the Company, No. 320 California street, room No. 5, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the 23d day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Monday, the 13th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of trustees.

GEO. R. SPINNEY, Secretary.

Office—No. 320 California street, Room No. 5, San Francisco, Cal. no23

Noonday Silver Mining Company---Location of works: White Pine Mining District, White Pine County, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment, No. 12, levied on the 11th day of October, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Barton, W H, Trustee	665	100	20 00
Barton, W H, Trustee	694	50	10 00
Barton, W H, Trustee	670	100	20 00
Barton, W H, Trustee	729	50	10 00
Bogart, O H	633	200	40 00
Child & Jones, Trustee	689	100	20 00
Child & Jones, Trustee	113	100	20 00
Cribbins, Patrick	955	40	8 00
Cohlman, Wm	959	60	10 00
Cohlman, Wm	1027	100	20 00
Dubriel, P	918	100	20 00
Dresler, L & Co, Trustee	1016	50	10 00
Fordham, R B	444	66	13 20
Farnam, E	79	100	20 00
Fenn, T W, Trustee	539	50	10 00
Hill, A E, Trustee	324	50	10 00
Hill, A E, Trustee	381	60	10 00
Hill, A E, Trustee	382	50	10 00
Hill, A E, Trustee	384	50	10 00
Hill, A E, Trustee	395	26	5 00
Hill, A E, Trustee	406	100	20 00
Hill, A E, Trustee	410	25	5 00
Hill, A E, Trustee	415	50	10 00
Hunt, O H, Trustee	944	200	40 00
Hall, N H, Trustee	718	100	20 00
Hillard, B F, Trustee	944	100	20 00
Hurley, Miss M J A	909	20	4 00
Howard & Lincoln, Tr	1015	50	10 00
Hoffman, August	1032	250	50 00
Ives, R O, Trustee	227	20	4 00
Jonasson, J	657	50	10 00
Kratzenstein, C	911	100	20 00
Koenig, A	954	65	13 00
Ludington, H Y	102	100	20 00
Lowenberg, S, Trustee	788	60	12 00
Lowenberg, S, Trustee	790	40	8 00
Livingston, J M, Trustee	904	50	10 00
Lincoln & Howard, Tr	1026	50	10 00
McDonald & Whitney, Tr	667	200	40 00
McDonald & Whitney, Tr	679	100	20 00
McDonald & Whitney, Tr	901	50	10 00
Mason, Thomas	798	50	10 00
Mason, Thomas	926	100	20 00
Martin, M S, Trustee	500	50	10 00
Martin, M S, Trustee	514	100	20 00
Martin, M S, Trustee	561	50	10 00
Martin, M S, Trustee	774	100	20 00
McDonald, M J, Trustee	870	2	40
McDonald, M J, Trustee	875	73	14 60
McDonald, M J, Trustee	878	100	20 00
McDonald, M J, Trustee	891	200	40 00
McDonald, M J, Trustee	989	100	20 00
McDonald, M J, Trustee	990	100	20 00
McDonald, M J, Trustee	991	100	20 00
McDonald, M J, Trustee	992	100	20 00
McDonald, M J, Trustee	993	100	20 00
McDonald, M J, Trustee	994	100	20 00
McDonald, M J, Trustee	995	100	20 00
McDonald, M J, Trustee	996	100	20 00
McDonald, M J, Trustee	997	100	20 00
McDonald, M J, Trustee	998	100	20 00
McDonald, M J, Trustee	999	100	20 00
Mitchell, J S, Trustee	897	200	40 00
Meyers, A	948	116	23 20
McCullough, T J	1014	100	20 00
Neal, Chas S, Trustee	853	150	30 00
Norwood, W E, Trustee	873	100	20 00
Owens, T J, Trustee	1000	65	13 00
Page, Nathaniel	59	100	20 00
Page, Nathaniel	60	33	6 60
Peck, C S	979	300	60 00
Peck, C S	980	200	40 00
Rogers, R H	957	100	20 00
Richardson, E A, Trustee	902	100	20 00
Richardson, E A, Trustee	943	300	60 00
Richardson, E A, Trustee	071	50	10 00
Richardson, E A, Trustee	1001	500	100 00
Stevens, C, Trustee	26	100	20 00
Schmitt, B L, Trustee	877	100	20 00
Soren, Geo S, Trustee	921	50	10 00
Tibbey, E S, Trustee	393	1 (1nl)	20
Tibbey, E S, Trustee	700	50	10 00
Thomson, M	1033	600	120 00
Uhler, J Clem, Trustee	639	100	20 00
Uhler, J Clem, Trustee	641	100	20 00
Williams, Beury, Trustee	609	50	10 00
Woods, F H, Trustee	828	750	150 00
Woods & Freeborn, Tr	982	300	60 00
Woods & Freeborn, Tr	983	200	40 00
Woods & Freeborn, Tr	985	100	20 00
Woods & Freeborn, Tr	988	100	20 00

And in accordance with law, and an order of the Board of Trustees, made on the eleventh day of October, A. D. 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction at the office of the Company, on the fourth day of December, A. D., 1872, at the hour of one o'clock, P. M., of said day, to pay said delinquent assesement thereon, together with costs of advertising, and expenses of sale. CHAS. H. FISH, Secretary.

Office, Room 26, Hayward's Building, No. 419 California Street, San Francisco Cal. no 16-3t.

Norman Gold Mining Company—Location of works, Aqueduct Mining District, Amador County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said company, held on the 11th day of November, 1872, an assessment of five cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin to the Secretary, at the office of the company, Room 5 and 6, No. 302 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Thursday, the 12th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction and unless payment shall be made before, will be sold on Saturday the 4th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

W. H. WATSON, Secretary.

Office, Room 5 and 6, No. 302 Montgomery street, San Francisco, Cal. no16

Old Providence Mill and Mining Company, Located on of works, Bayden Hill Mining District, Lassen County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said company, held on the 11th day of November, 1872, an assessment of twenty-five cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin to the Secretary, at the office of the company, No. 415 Montgomery street, San Francisco. Any stock upon which said assessment shall remain unpaid on the 14th day of December, 1872, shall be deemed delinquent and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 6th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees. FRANK SWIFT, Secretary.

Office, 415 Montgomery street, San Francisco, Cal.

San Francisco Co-operative Printing Company.—Location: 411 Olay and 412 Commercial Sts., San Francisco, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of the San Francisco Co operative Printing Company, held on the 6th day of November, 1872, assessment No. 4, levied on the 17th day of September, 1872, of $12 per share, having been rescinded, on same day, an assessment of Five Dollars per share was levied on the Capital Stock of said company, payable immediately, in United States gold coin to the Secretary, at the office of the Company, 412 Commercial street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Monday, the 9th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the 31st day of December, 1872, to pay the delinquent assessment, together with the cost of advertising and expenses of sale.

B. H. DALY, Secretary.

Office 411 Clay St. and 412 Commercial St., San Francisco, Cal.

San Francisco Co-operative Land and Building Association.

Notice is hereby given that all the allments due on shares in this association, are called in, and payment thereof is demanded. All shares delinquent at the expiration of thirty days from this date, will be advertised for sale. By order of the Board of Directors.

H. B. CONGDON, Secretary.

Office, 306 Montgomery street, San Francisco, November 16, 1872. no16-4t.

Silver Wave Mining Company—Location of works, White Pine Mining District, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment (No. 9) levied on the 21st day of September, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Name.	No. Certificate.	No. Shares.	Amount.
Balcom, C F, Trustee	622	50	$50 00
Balcom, C F, Trustee	523	50	50 00
Barton, W H, Trustee	352	200	200 00
Barton, W H, Trustee	376	10	10 00
Barton, W H, Trustee	490	50	50 00
Breed, H L, Trustee	516	20	20 00
Crocker, J H, Trustee	489	50	50 00
Crocker, J H, Trustee	491	20	20 00
Crocker, J H, Trustee	492	100	100 00
Crocker, J H, Trustee	493	50	50 00
Croxall, J D	449	100	100 00
Eyre, E E, Trustee	507	50	50 00
Fogle, L C, Trustee	483	100	100 00
Fogle, L C, Trustee	484	100	100 00
Foglo, L O, Trustee	485	100	100 00
Holmes, H J	511	447	447 00
Hopkins, T R	521	90	90 00
Loveland, L F, Trustee	247	50	50 00
Martin, M S, Trustee	199	100	100 00
Martin, M S, Trustee	439	20	20 00
Perkins, J E	464	698	698 00
Perkins, J E, Trustee	337	500	500 00
Richardson, E A, Trustee	475	100	100 00
Richardson, E A, Trustee	486	80	80 00
Richardson, E A, Trustee	494	2000	2000 0
Richardson, E A, Trustee	496	50	50 00
Richardson, E A, Trustee	497	50	50 00
Richardson, E A, Trustee	498	95	95 00
Richardson, E A, Trustee	499	100	100 00
Richardson, E A, Trustee	504	75	75 00
Richardson, E A, Trustee	520	100	100 00
Richardson, E A, Trustee	524	300	300 00
Richardson, E A, Trustee	525	86	86 00
Robertson, Thos B, Trustee	519	300	300 00
Tibbey, E S, Trustee	512	100	100 00
Tibbey, E S, Trustee	513	100	100 00
Tibbey, E S, Trustee	514	100	100 00
Tibbey, E S, Trustee	515	100	100 00
White, Jas T	399	12	12 00

And in accordance with law, and an order of the Board of Trustees, made on the 21st day of September, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, on Monday, the 25th day of November, 1872, at the hour of two o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. W. CLARK, Secretary.

Office, 418 California street, San Francisco, no2-3t

State of Maine Mill and Mining Company—Location of mine, Amador County, California.

NOTICE is her by given that at a meeting of the Board of Trustees of said Company, held on the 5th day of October, 1872, an assessment of five cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at the office of the Company, No. 304 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 26th day of November, 872, shall be deemed delinquent and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 16th day of December, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

oc26-4t H. B. CONGDON, Secretary.

Office, No. 306 Montgomery street, San Francisco Cal.

The North San Francisco Homestead and Railroad Association Location of property: City and County of San Francisco, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 5 h day of Nov., 1872, an assessment of Three Dollars per share, was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at the office of the Company, No. 314 California street, San Francisco, California. Any stock upon which said assessment shall remain unpaid, on the 26th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-third day of December, 1872, to pay the delinquent assesement, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. D. SMITH, Secretary.

Office, 314 California street, San Francisco Cal.

U. S. Grant Mining Company---Location of works, Carlisle, Nevada County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 19th day of November, 1872, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at his office, 226 Clay street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the 30th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 20th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

ENOS TAYLOR, Secretary.

Office, 226 Clay street, San Francisco, Cal. no23

NOTICE.

To the Stockholders of the Sutro Tunnel Company.

At a meeting of the Trustees of the Sutro Tunnel Company, held at the office of the Company, in the city of San Francisco, on the 12th day of November, 1872, the following resolution was adopted:

"Resolved, That it is the opinion of this Board that the capital stock of this Company should be increased up to Fifteen Million Dollars, and be divided into fifteen hundred thousand shares of the par value of ten dollars per share, and that a meeting of the stockholders be and is hereby called to take place at the office of the Company, in the city of San Francisco, at No. 321 California street, at 1 o'clock P. M. the Fourteenth day of December, 1872, to determine upon this proposition."

(Signed)

JOSEPH ARON,
CHAS. W. BRUSH,
EDWARD N. HOOPER,
IGNATZ STEINHART,
SOLOMON HEYDENFELDT,
Trustees.

PELHAM W. AMEE, Secretary. no15-4t

ONE DOLLAR A YEAR

—FOR THE—

PACIFIC COAST MERCANTILE DIRECTOR.

This is a new 16-page monthly newspaper, of special information for wholesale and retail tradesmen. It will also contain reading of interest and importance to all business and professional men on the coast.

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Will comprise Full Prices Current and Monthly Review of the Wholesale Markets; Diagrams of the fluctuations of the Wheat Markets; Rates of Ocean Freight—corrected monthly; Illustrations and Sketches of Prominent Men and Buildings; Editorials on Manufacturing and Industrial Progress; Departments containing appropriate reading matter; reviews for various branches of trade, including "Grocery and Provision;" "Dry Goods;" "Drugs;" "Building;" "Trades and Manufactures," etc., etc.

Our first issue consist of 16 pages, embracing TWENTY-FOUR COLUMNS of important reading matter for Tradesmen—mostly original and by first-class writers. Sample copies, post paid, 10 cts. Yearly subscription, in advance, $1. Subscribers to the MINING AND SCIENTIFIC PRESS or the PACIFIC RURAL PRESS will be supplied at half price.

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The California Powder Works

No. 314 CALIFORNIA STREET,

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SPORTING,

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POWDER,

Of SUPERIOR QUALITY, FRESH FROM THE MILLS. It being constantly received and transported into the interior, is delivered to the consumer within a few days of the time of its manufacture, and is in every way superior to any other Powder in Market.

We have been awarded successively

Three Gold Medals

By the MECHANICS' INSTITUTE and the STATE AGRICULTURAL SOCIETY for the superiority of our products over all others.

We also call attention to our

HERCULES POWDER.

Which combines all the force of other strong explosives now in use, and the lifting force of the NEAT BLASTING POWDER, thus making it vastly superior to any other pomponnd now in nee.

A circular containing a full description of this Powder can be obtained on application to our Office.

16v20-3m JOHN F. LOHSE, Secretary.

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ESTABLISHED 1851.

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First and Fremont streets,

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IRA P. RANKIN. A. P. BRAYTON,
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Steam Engines and Boilers,

MARINE AND STATIONARY,

IRON AND BRASS CASTINGS

Mining Machinery of Every Description,

And all other classes of work generally done at first-class establishments, manufactured by us at the lowest prices, and of the best quality.

☞ Particular attention paid to Jobbing Work and Repairs.

N. B.—Sole Agents for sale of HUNTOON'S CELEBRATED PATENT GOVERNOR.

18v20-3m GODDARD & CO.

FULTON

Foundry and Iron Works.

HINCKLEY & CO.,

MANUFACTURERS OF

STEAM ENGINES.

Quartz, Flour and Saw Mills,

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109 and 111 Mission Street,

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These Works have lately been increased, by additional Tools, and we are now able to turn out any kind of work, equal to and cheaper than any establishment in the State; that is to say:—

STEAM ENGINES,
Flour and Saw Mills,
QUARTZ MACHINERY
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AND MACHINERY MADE OF EVERY DESCRIPTION.

Improved Safety Store Hoists,

Fitted with Cutting's Patent Cams, unequaled for safety, convenience and cheapness. This Hoist can be built for about half the price of any other in use. To be seen at HAWLEY & CO.'S.

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4v23tf

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CROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR

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PACKING, for new and old Cylinders.

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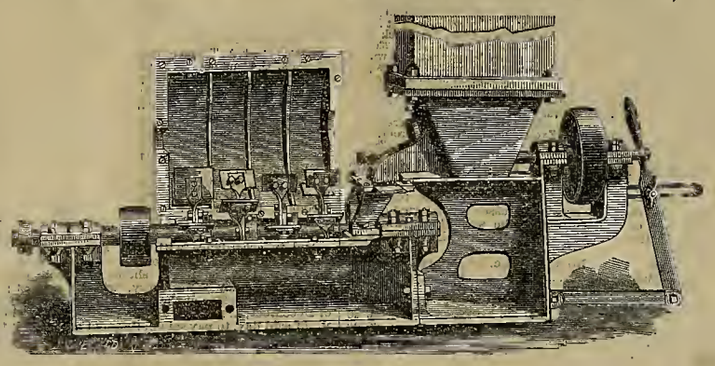
WHELPLEY & STORER'S ORE PULVERIZER,



For Reducing Ores to Fine Powder.

OFFICE OF SWANSEA MELTING AND REFINING COMPANY OF CHICAGO.
CHICAGO, July 15, 1872.

L. P. DODGE, Esq., Agent for Messrs. WHELPLEY & STORER—Dear Sir: Your communication of the 10th instant is at hand. In reply would say that we have been running a Whelpley & Storer Pulverizer for the last six months, grinding ores of different kinds, some of them exceedingly hard. The operation of the Pulverizer has been, in every respect, a complete success, grinding very fine, with but little power required to drive it, and but slight expense for wearing parts. We cordially recommend them to all parties requiring a Pulverizer for mining or other operations. Respectfully J. W. JONES, Superintendent, etc.

May be seen in practical operation on Main street, between Howard and Folsom, San Francisco.

This Machinery has been adopted by nearly all the Eastern reduction works for reducing ores.

Parties purchasing machinery will find it for their interest to examine this before purchasing elsewhere.

9v25-3m GEO. D. WYMAN, Agent Pacific Coast.

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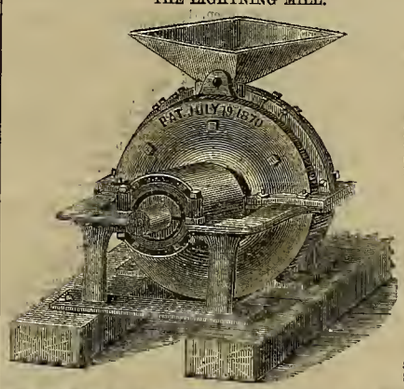

THE

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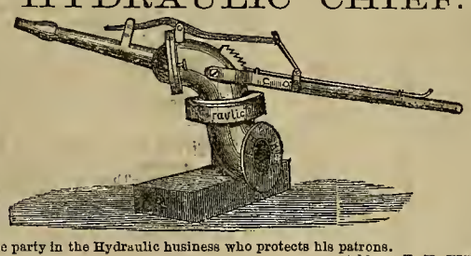

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TO ORDER,
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One
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eight-inch
STREAM.

The only reliable party in the Hydraulic business who protects his patrons.

9v23-tf Address F. H. FISHER, Nevada, Cal.

HYDRAULIC MINERS, TAKE NOTICE—I hereby caution Miners and Manufacturers against making, buying, selling or using a Hydraulic Machine or Joint known as the Little Giant, manufactured and sold by R. R. & J. Craig and Richard Hoskin, as the same is an infringement upon the invention of the machine known as FISHER'S HYDRAULIC CHIEF, secured by Letters Patent, No. 110,222, dated Dec. 20, 1870. All parties participating in such infringements will be rigorously prosecuted. Nevada, Jan. 13th. F. H. FISHER.

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MINING STEAM PUMPS.

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Notice is hereby given, that the copartnership heretofore existing between A. J. Severance, Charles W. Randall and J. Gus. Burt, under the firm name of "Severance, Holt & Co.," is this day dissolved by mutual consent. A. J. Severance, having purchased all the interest of his late partners, will continue the business of manufacturing and selling Diamond Drills as before, under the style of A. J. Severance & Co.

Dated San Francisco, Nov. 24, 1871.

Office, 315 California street. A. J. SEVERANCE,
CHAS. H. RANDALL.
22-v23-tf J. GUS. BURT.

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IRON CASTINGS of all descriptions at short notice.

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NOTICE.

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The variety and completeness of our Patterns enable us to supply the general wants of the Pacific States and Territories at the lowest possible rates.

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N. D. ARNOT, Manager.
12v25-tf

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EUREKA FOUNDRY,

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Marine, Locomotive and Stationary Engines Quartz Crushing and Amalgamating Machines, Mill Irons and Brass and Iron Castings, of every description, made to order.

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CAPITAL.....$1,000,000.

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Manufacturers of Steam Engines, Quartz and Flour Mill Machinery, Steam Boilers (Marine, Locomotive and Stationary), Marine Engines (High and Low Pressure). All kinds of light and heavy Castings at lowest prices. Cams and Tappets, with chilled faces, guaranteed 40 per cent. more durable than ordinary iron.

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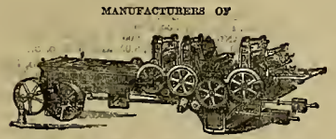

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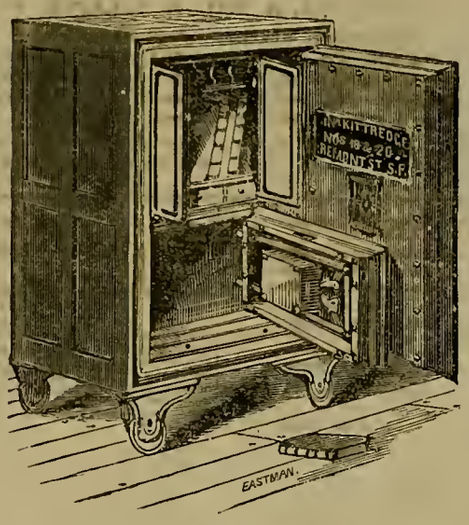

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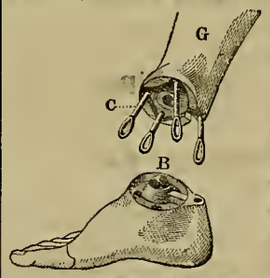

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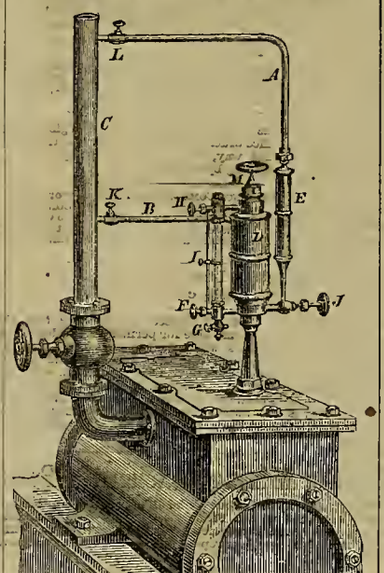

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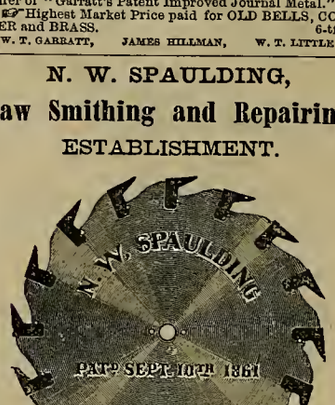

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7.15 A. M. (Daily). Cal. P. R. R. Steamer (from Broadway Wharf)—Connecting at Vallejo with Trains for Callstoga, Knight's Landing and Sacramento; making close connection at Napa with stages for Sonoma.

2.00 P. M (Sundays excepted). S. F. & N. P. R. R. Steamer (from Broadway Wharf), connecting at Donahue with Trains for Cloverdale. Making close connection at Lakeville with stages for Sonoma.

2.00 P. M. (Sundays excepted). Stockton Steamer (from Broadway Wharf), touching at Vallejo, Bemcia, and Landings on the San Joaquin river.

3.00 P. M. (Daily). San Jose Passenger Train (via Oakland), stopping at all way Stations.

4.00 P. M. (Sundays excepted). Passenger Train (via Oakland) for Lathrop, Merced, Visalia, Tipton, and Los Angeles, Stockton and Sacramento.

4.00 P. M. (Sundays excepted). Cal. P. R. R. Steamer (from Broadway Wharf) connecting at Vallejo with Trains for Callstoga, Knight's Landing and Sacramento.

4.00 P. M. (Sundays excepted). Sacramento Steamer (from Broadway Wharf), touching at Benicia, and Landings on the Sacramento river.

6.30 P. M. (Daily). Overland Emigrant Train (via Oakland)—Through Freight and Accommodation.

OAKLAND BRANCH.—LEAVE SAN FRANCISCO, 7 00, 8 10, 9 2 , 10 10 and 11 20 a. m., 12 10, 1 50, 3 00, 4 00, 5 15, 6 30, 8 9.20 and *11 30 p. m. (9 20, 11 20 and 3 00 to Oakland only).

LEAVE BROOKLYN (for San Francisco), *5 30, 6 40, 7 50, 9 00 and 11 00 a. m., 1 40, 2 40, 4 55, 6 10, 7.55 and 10 10 p. m.

LEAVE OAKLAND, *5 40, 6 50, 8 00, 9 10, 10 00, and 11 10 a. m., 12 00, 1 40, 2 50, 3 50, 5 05, 6 20, 8.05 and 10 20 p. m.

ALAMEDA BRANCH.—LEAVE SAN FRANCISCO, 7 20, and 11 15 a. m., 1 30, 4 00, 5 30, and 7 00 p. m. (7 20, 11 15, & 5 30 to Fruit Vale only).

LEAVE HAYWARDS (for San Francisco), *3 45, 7 00 and 10 a. m., and 3 30 p. m.

LEAVE FRUIT VALE, *4 40, 7 35, 9 00 and 11 20 a. m., 1 30 4 05 and 5 30 p. m. * Except Sundays.

T. H. GOODMAN, Gen'l Pass'r and Ticket Agt. A. N. TOWNE, Gen'l Supt.

J. S. PHILLIPS, M. E.,

Examiner of Mines, Consulting Engineer,
MINERAL ASSAYER AND METALLURGIST,
423 Washington Street, San Francisco.

Author of the "Explorers', Miners' and Metallurgists' Companion." (The very Comprehensive Work of 639 pages and 81 illustrations.

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SAN FRANCISCO, SATURDAY, NOVEMBER 30, 1872.

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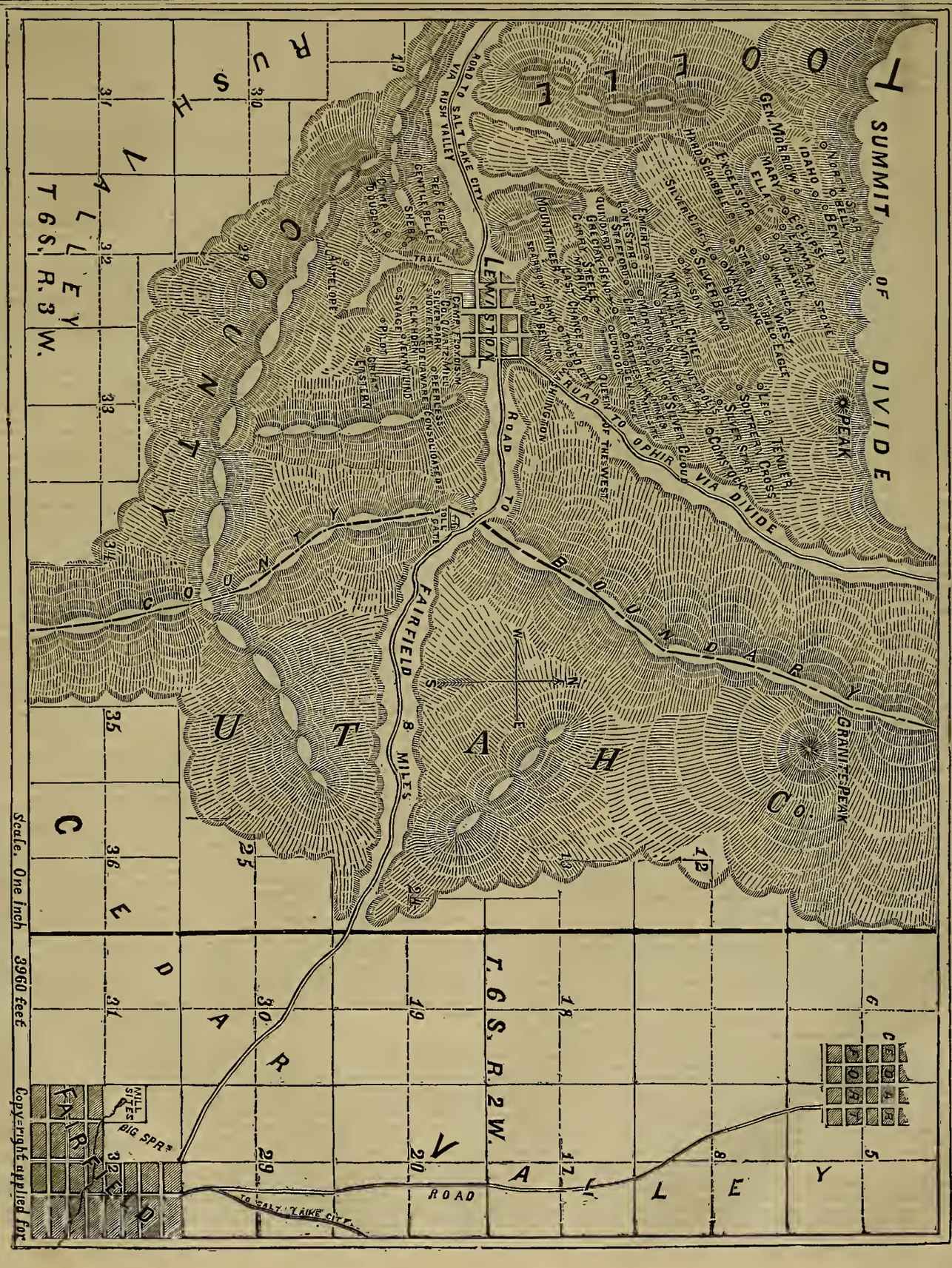
AN ORIGINAL MAP OF CAMP FLOYD MINING DISTRICT, IN UTAH TERRITORY.



For Description of this Map see page 341.

Notes on the Management of Mining Companies.

BY H. A. THOMPSON, M. E., OF MELBOURNE.

[Concluded.]

Many of these remarks, although written with special reference to quartz mining, are applicable to alluvial works when they are on a sufficiently large scale to deserve the name of a mine.

Methods of Treating the Ores.

The next subject requiring the attention of a company after the cost and risk of finding and raising the gold bearing material has been incurred, is the method to be used for crushing the quartz, and extracting the gold.

On this point many erroneous views are entertained, and the endeavors made to discover improved methods of treatment, have seldom been based on sound principles. Most persons engaged in conducting reducing works, are aware of the great loss of gold sustained, and try to decrease this loss by various means, but there are still too many managers of the class who look on an assertion of this kind as a slur on their ability, and from them little advance can be expected. The great loss sustained in reducing gold ores, in every gold mining country in the world, is not a matter of opinion, but a fact long known and established beyond a doubt by the most carefully conducted investigations, and this in not newer countries only, but in the older mining districts of Europe and South America as well. In Victoria, the loss of gold from the mines whose works are below the water level, may be set down as varying from twenty-five to seventy per cent., this loss usually being in proportion to the amount of sulphides in the quartz. Such being the case, it behooves all companies to bear this fact in mind when laying out the reducing works, and to remember that with even the best appliances the loss must be considerable, and with anything less than the best, it may be greatly increased.

In the erection of crushing machinery they will have to take into account the peculiarities of the material to be crushed, the character of the gold deposit, the quantity and description of the other metallic ores in the quartz, both at the surface and what it is likely to be in depth, together with the amount the mine can supply, the quantity of water available, etc.; before deciding on the extent and kind of machinery that will be most suitable for the mine. In determining on the appliances to be used for separating the gold, and gold-bearing ores from the waste, a knowledge is required of the different plans now in use, the principles on which these plans are based, their respective advantages and defects, to enable a reliable opinion to be formed as to which is the most applicable to the peculiar character of the quartz to be treated. When the machinery has been got to work the whole process will have to be checked, the loss sustained in each part of it determined from time to time, the proper remedies applied, and much valuable material now mostly thrown away, saved for re-treatment. It must be evident that to perform this work satisfactorily, it is necessary to have a thorough knowledge of the metallurgical treatment of gold and gold ores, such as is possessed by few of our managers.

Too frequently this part of the business is placed under the control of the working engineer, and in consequence there are not many crushing-floors where the experienced metallurgist will not be able to point out the means of saving several ounces of gold per week; and in some he will see material holding from one hundred to one thousand ounces of gold per ton wasted. This is only the loss occurring on the crushing-floor,—that in the tailings, after all the ordinary means of separating the gold has been used, requires a distinct method of operating. One instance came under the writer's notice, where, on a small establishment, 200 ozs. of gold was obtained from this apparently valueless material in six months; and about 15 cwt. of poorer material, but still holding over 100 ozs. of gold per ton, was piled, and the gold afterwards extracted. At another place, material was thrown away, holding at the rate of over 1,000 ozs. of gold per ton. These were, probably, extreme cases; but they show what may be lost through ignorance and the prejudice which usually accompanies it.

The great question of the separation of the auriferous sulphides from the waste tailings, and the extraction of the gold they contain, has yet to be encountered; and there can be no reasonable doubt of the result, when one crushing establishment, where the sulphides are very poor, has been making over £2,000 per annum for some time past, by operating on them.

If the gold at present needlessly thrown away were saved, the aggregate profits from our quartz mines would be at the least double what they now are.

Looking back over this outline of the duties to be attended to in establishing and conducting a mine, few will be prepared to assert that they can be performed by a board of directors and a legal manager, having little, if any, practical acquaintance with the subject; or that any but a professional man, having a thorough knowledge of the business, is likely to be capable of conducting such operations to the greatest advantage.

Necessity of a Competent Resident Manager.

The result of this state of affairs is, that the directors have to depend almost entirely on the resident manager, and such is the real position of nearly all the Melbourne companies. The control of the mine is virtually in his hands, and if there is sufficient gold to leave a good profit, the manager is looked on as a first-class man, whatever may be the loss of gold, or however incompetent he may really be; and on the other hand, if there is not gold to pay cost, the management is blamed, not the mine.

Such being the case, it is necessary to enquire into the competency and character of the class to whom the control of the immense expenditure on our gold mines is entrusted.

It is but just to acknowledge that good managers are to be found scattered about our mines, and more especially is this the case on our large quartz fields, men with whom any company ought to be satisfied. But these really competent miners will bear out the statement that the majority of the managers throughout the colony are not qualified to perform the duties they undertake, and will be able to point out case after case where the capital had been squandered recklessly from this cause. Numbers of them are merely working miners who, whatever their knowledge of the mere details of mining work may be, are without the education or capacity required to fit them for the conducting of a mine, and too many do not even reach this standard; while there are few having such an acquaintance with the principles on which the plans used for the extraction of gold should be based, as would enable them to adapt the treatment to the character of the material to be operated on. Indeed, any one well acquainted with the way in which mining companies are usually conducted must feel surprised at the number of successful ventures, rather than at the number which fail.

This Mismanagement

Appears to be one great cause of the losses and consequent disfavor under which the mining interest is now suffering; and if any means could be adopted, tending to check the wasteful expenditure of capital now so common, mining would become a much more certain and profitable business than it can ever be under the present system.

With over six hundred mining companies at work, it is not to be expected that managers, capable of performing all the duties now thrown upon them, can be found for more than a small minority of these companies; and even the best miners would be rendered more useful, if they were in constant communication with a body of men whose experience was not confined to a single mine, a single mining field, or even to the colony. The great majority of the mining companies have, therefore, to fall back on an inferior class of men, certainly not such as would be entrusted with the management of a mine in England, leaving out of sight the important operation of extracting the gold, where the inevitable loss is so considerable, and may be so largely increased by inattention or incompetence. In some instances, more especially in distant and isolated districts, metters are in a still worse state than is here represented; many of the local managers being even without an elementary knowledge of the work they have undertaken, or else they are positively dishonest. In either case, the result to the companies they may represent cannot well be otherwise than disastrous.

Consulting Engineers.

Although it may not be easy to find a complete remedy for this state of affairs, the mischief might at least be greatly mitigated by the introduction of another element into the management. If these evils arise from the want of such practical experience on the part of the board as would enable them to keep an efficient check over the local management, and of a sufficient knowledge of mining and metallurgy on the part of the mining manager, the object should be to supply these deficiencies. This purpose might be in part attained by attaching a consulting engineer to each company, taking care that the company so engaged is acquainted with mining in all its branches, and not merely a mechanical or civil engineer. The consulting engineer would attend to the mining correspondence, either directly or through the legal manager, as might be found convenient, and his duties may be roughly enumerated as follows:

He would lay down or amend the proposed scheme for proving, opening and working the mine; see to the purchase, and find plans for the erection of the machinery; select the stores required for the mine, and see that they were of the right description; take care that the best method of extracting the gold was adopted, and that the gold-bearing material now running away in the waste was utilized, so far as our present knowledge enables this to be done. In supervising the mining correspondence, he would see full information was afforded as to the true state of the mine and the work going on, so as to keep an efficient check on the local management and expenditure. Sometimes through design, but more frequently through inadvertence, the reports give only an imperfect idea of the true state of affairs, managers being more inclined to dwell on the hoped-for results than on the actual facts; and the latter can only be drawn out and separated from the former by those practically acquainted with all the details of mining operations. The arrangement of the workmen and the cost of the work would also be checked, the pay bills drawn out in a simple yet, complete form, and proper plans of the work kept up. Copies of the latter, and the records belonging to them, would be kept in the office, so that the state of the mine, both in the past and present, might be seen at any time by the directors.

Having thus obtained full information of the actual position of the mine, he would attend the board meetings, when required, for the purpose of explaining this to the directors, divesting the questions brought before them of the technical difficulties which render them indistinct, and thus enable the directors to bring their business knowledge to bear on the points they have to decide. Finally, he would make periodical visits of inspection to the mines under his charge, personally examining into the state of each, and consulting with the mining manager as to future arrangements or operations. Such is an outline of the duties of the consulting engineer. He would not supersede or interfere with the functions of the board, the object being to keep them so thoroughly informed of the true state and prospects of the mine as to enable them at once to decide on the right course to be pursued in any contingency, and thus act with the vigor and energy which is so great an element of success in every undertaking. To the local management he would supply the more extended experience which his position enabled him to command, and the good managers would certainly prefer to have their work supervised by one who would form his opinion of their capabilities by that work alone, rather than by the quantity of gold in the vein.

It has been urged that managers would not submit to such a supervision of their work. Considering the class of men we have as manager, compared with the standing of those holding a similar position in Europe—where a like system to the one recommended is in use—such an objection is simply absurd, and no opposition of this kind need be expected, except from those who are conscious their work will not bear inspection.

Another objection which has been urged against the proposed system is the increase it would cause in the cost of management. It is said that companies are not in a position to bear any addition to their expenses; and if the employment of a consulting engineer had this effect, the objection would be a well founded one, as it would indicate that the management was so satisfactory as to leave no room for improvement. The object, however, aimed at is the decrease, not the increase, of the expenditure; and although the salary of the consulting engineer will appear as a distinct item in the accounts, while the saving he may effect does not do so (except, perhaps, in the case of gold wasted, when the amount retained may be approximately determined). Yet even in the mining work it may be shown that such saving will be made. The cost of employing a consulting engineer would be covered if his services resulted in the saving of the labor of one man in the arrangement of the work—a trifling reduction in the price at which contracts are let—or the retention of one ounce of gold per week out of the large quantity now lost. There are few men acquainted with business but will acknowledge that the supervision proposed, when exercised by a competent man, would alone produce such an increased amount of care and attention on the part of the local management as to more than repay its cost, irrespective of the much greater advantage that would be derived from the introduction of improved methods of working the mine and extracting the gold.

Under the proposed system the directors would have a clear and distinct idea of the true position of the company to lay before the shareholders, and much of the distrust now so prevalent would be abated, seeing that it arises more from doubt of the power of the board to detect mismanagement—or to set it right if they do detect it—than from disbelief in the honesty of their intentions. If the board had an officer under their control, whose duty it was to be thoroughly acquainted with the state and prospects of the mine, so as to be in a position to supply them with the information they may require—the knowledge that such was the case would tend greatly to restore confidence to the shareholders, and prevent much undeserved obloquy from falling on directors—who, after all that can be said against them, have still acted to the best of their judgment, and are probably the greatest sufferers from any errors that may have been committed. The system should be blamed, not the directors, as the latter have only followed the plan in general use; and many have no doubt felt its unsatisfactory character, but without seeing in what manner a remedy could be provided.

Some persons may doubt if a sufficient number of competent mining engineers could be found in this colony, willing to enter on such a business; but once let the demand for their services arise, and the best men who are now scattered over the gold-fields would be drawn to Melbourne by the more congenial employment afforded in the exercise of the higher branch of the profession, instead of their time being wasted in looking after the working details that would elsewhere be left under the captains of a mine.

Conclusion.

The concentration in Melbourne of a select body of the best mining engineers, constantly meeting and exchanging information and opinions connected with their professional labors, and whose experience would extend over the whole colony, could not fail to be attended with great benefit to the mining interest, both in elucidating points at present obscure, and in rapidly spreading real improvements over all the mines. At present, if any beneficial results are obtained from new methods of operating it is seldom known beyond the locality in which it is tried, or if a rumor of it reaches outer fields it attracts little attention. In consequence, each mining center has its own peculiar system of working, and local prejudices—in many instances producing a most injurious effect on the property of the district. Instead of this isolation, the accumulated experience of all our mining fields should be brought to bear upon the subject, and then some progress may be made in ascertaining the peculiar characteristics of our quartz veins, and the best methods of treating the gold ores.

It may be said, that at a time when the mining interest is in such a state of depression as at present is not a favorable one for the inauguration of a new system, and many persons may feel inclined to turn from the whole question with distaste, as one they have decided on having no direct connection with in the future. Still, it must be remembered that the great producing interest of the colony is of too much importance to all making this country their home, to allow of its being ignored, and, whatever may be the state of feeling that now exists, the desire to invest in mining companies will again spring up, and the majority of those who now repudiate it will once more enter on the pursuit.

To those still engaged in mining who regret its present depressed state, and who are anxious to raise it from the low position in the public estimation into which it has fallen, it may be urged, that this depression has in a great measure arisen from the mischief attending a system of working which these suggestions propose to remedy, and the adoption of them would tend to restore the confidence so much wanted, while it would prevent a great part of the reckless speculation—to use no harsher term—which has brought such discredit on mining enterprise. If the parties still interested in mining affairs believe that the introduction of the plan described above is likely to be attended by the benefits the writer anticipates, it is for them to bring it into practical operation, as the change can only be effected by those who have the power to carry it out.

California Mining Property in London.—The London market presents a new California stock to the public—"The Quicksilver Mining Company" (limited), capital, 40,000 shares, £5 each, or $1,000,000, for working quicksilver mines in Pope Valley, Napa county, California. From the statements made, the property is 132 acres in extent, about seventy-three miles from San Francisco, and within sixteen miles of St. Helena station of the Napa Valley railroad. Mr. Francis Fowler was appointed to inspect the property for the buyers. He reports that: "On the supposition of working only two furnaces, reducing together 40 tons of ore per day, assaying on an average 4 per cent of mercury (which I consider to be a low estimate, judging from the assay accompanying the report), it would yield as a result $2,720 per day, at the standard price of 85 cents per pound; deducting from this expenses of mining, reducing, and all other charges, which will not exceed $5 per ton, would give a return of $2,520 per day, which, reckoning at only 300 days per year, will produce a net result of $756,000, or £151,000 per annum, which at a capital of $200,000 will pay 75 per cent. dividend. By increasing the number of furnaces, and further development of the mine, I am sure this return may be largely increased." The nominal consideration is £160,000, of which the vendors take £50,000 in paid-up shares, which they are not to sell for or sell for the space of twelve months. These shares are not to receive any dividend until 15 per cent. has been paid to other stockholders. The California manager is Donald MacDonald, Esq., of Napa valley. The London *Times* has seen proper to denounce this Company in very severe terms.

Immense Ore Deposits.

Some months ago we made a report on the Richmond Consolidated in the columns of the *Sentinel*, in which we mentioned the body of ore there as immense. Yesterday, by an order from the District Court, a party of gentleman, including the Superintendents of both the Eureka and Richmond went through and inspected the new workings. The sight exposed is one beyond description; in fact, the enormous quantities of ore in sight make one stand dumbfounded and amazed. And the strangest feature in the case is that the workings have been carried completely through the ground known as the "Lookout," which location belongs to the Eureka Consolidated, and has hitherto been considered of but little value. After a thorough inspection of the various shafts, drifts and inclines, the whole party were prepared to say that no such immense bodies of ore had ever been seen in Eastern Nevada, and perhaps in the world. In one place, Superintendent Fisher exhibited a body of ore, which, by actual measment, would aggregate 40,000 tons of ore in sight, which at a value of $60, would show the the large sum of $2,400,000. This, in connection with the late strike in the Phenix, will cause Eureka stocks to look up again, and place this really meritorious district where she properly belongs—in the front rank.—*Eureka Sentinel.*

The directors of the Boston and Albany Railroad have decided to substitute steel for iron rails upon the entire track of the road as fast as practicable. About 9,000 tons of steel rails have already been purchased in Europe, 4,000 tons of which will be delivered this year, and 5,000 tons next year, and they will be laid as fast as received.

SCIENTIFIC PROGRESS.

The November Atmospheric Wave—An Interesting Discovery.

From time immemorial a succession of great atmospheric waves has been known to commence their flow, usually, in October, upon and over the coasts of England and Western Europe, and to mark the commencement of the winter season in that latitude. The phenomena connected therewith, have been a speculative theme with scientists for the last century or more. Sir John Herschel and others have supposed it was peculiar, and confined to England and Western Europe, which it reaches from the South Atlantic, over which it rolls in long, continued undulations, from October to January, constituting an important element in the phenomenal character of the European winter.

This wave seemed to have reached its culminating violence, this season, in the great gale which burst upon the European coast last week, the disastrous results of which, in the destruction of shipping and human lives, has been reaching us daily by telegraph, during the past week.

A Similar Wave Discovered on the Pacific Coast.

The facts connected with this meteorological phenomenon have been closely studied during the past and the present season, under the peculiarly favorable circumstances presented by the various signal offices of this country and Europe, and the interesting and important fact has recently been announced by the Signal Bureau at Washington that on the 12th of November, almost simultaneous with the advent of the great gale in Europe, a similar atmospheric wave began to break over the shores of Oregon and British Columbia, as shown by the weather telegrams. By the evening of the 13th inst. it had spread over nearly all the Pacific States and Territories, Utah and Nevada. At midnight it was pouring through the passes of the Rocky Mountains. On Thursday, the 14th, it descended upon Colorado, Nebraska and the Indian Territories. On Friday morning it extended in unbroken magnitude from Oregon and Washington Territory eastward through the Great Trough or depression in the Rocky Mountains, the Backbone in Idaho and Montana, and stretched thence to the lower Missouri and Mississippi valleys, and over the western shores of the Mexican Gulf.

This discovery will enable meteorologists to anticipate by many days the approach of winter as it advances from the Pacific Coast eastward, in the great current of westerly winds. It serves to clear up the old mystery of the American winter storms, showing that they originated in the Rocky Mountains, upon whose cold and lofty summits in Utah, Colorado, and Southern Wyoming, the vapors of this wave coming from the warm Pacific are now seen to be condensed in overwhelming snows on the forty-first parallel.

As this vast aerial wave is probably like the English wave, continued in successive undulations for two or three months, it may assist in explaining the comparatively high temperature and light precipitation in the winter along Puget Sound and eastward.

Crystallized Silica From Aqueous Solutions.—In a paper published some time ago, in which the author had attempted to obtain quartz crystals from aqueous solutions of silicic acid, at ordinary pressures and at both ordinary and elevated temperatures, only negative results could be reported. In this series of experiments, attempts were made to obtain crystals after Senarmont's method, in water heated to 200° or 300°, and therefore under pressure. Crystals under these circumstances, were obtained, but small, and evidently consisting of hydrated silicic acid, and with these crystals were numerous granules of silicic acid, consisting of two distinct parts, a nucleus and a coating. Tridymite appeared to have formed, and over it a coating of minute crystals of hydrated silicic acid, which evidently had formed as the temperature had lowered.

His conclusion is that quartz cannot be formed under any circumstances, at ordinary or even at slightly elevated temperatures, or under ordinary pressure, in aqueous solutions. *O. Maschke.*

The Influence of the Sun.—However complicated soever the motions of animals may be, whatever may be the changes which the molecules of our food undergo within our bodies, the whole energy of animal life consists in the falling of the atoms of carbon and hydrogen and nitrogen from the high level which they occupy in the food to the low level which they occupy when they quit the body. But what has enabled the carbon and the hydrogen to fall? What first raised them to the level which rendered the fall possible? We have already learned that it is the sun. It is at his cost that animal heat is produced and animal motion accomplished.—*Tyndall.*

The fact that the atmosphere at and near the sea shore is richer in ozone than it is in inland places has been explained by M. Gornp Besanee, who finds by experiment that ozone is oxygen in a most active condition.

Effects of Slow Action.—Dr. Becquerel gives in the *Comptes Rendus* an account of the results of some experiments which prove that, by slow but continued action, curious interchanges of salts may be obtained; for instance—crystals of aragonite are formed upon a piece of gypsum (lance-shaped variety) kept in a closed vessel in a solution of bicarbonate of potassa; the gypsum has almost entirely disappeared, having become converted into aragonite. A similar piece of gypsum, placed in a solution of arseniate of ammonia, has been converted into arseniate of lime. With a solution of alumiuate of potassa and gypsum, the result is the formation of glauberite (double sulphate of lime and potassa, the latter substituto for the soda in the mineral just named). Pieces of galena, kept for twenty years in a solution of bicarbonate of potassa, have yielded well-defined crystallized carbonate of lead. When pieces of limestone were immersed in a solution of plombite of potassa (solution of oxide of lead in caustic potassa), the result was the formation of beautifully-crystallized hydrated carbonate of lead; malachite has been obtained by the action of limestone upon nitrate of copper, converting it into subnitrate, which in its turn, is converted into malachite by bicarbonate of soda.

Interesting Scientific Experiments.—Prof. Tyndal in one of his Boston lectures, while dwelling upon the effects of polarised light, said: "The study of this branch of optics, leads us into a new world—a world of chromatic beauty. There has been nothing in the past to set beside it but the attraction of gravitation. In these latter days, however, we have a study which may become yet more wonderful—the conversion of energy. He then exhibited plates of selenite of uniform thickness, and it was found that they produced certain definite colors. These plates were arranged as sectors of a circle, each sector being of a different thickness, and thus producing a different color. When the beam was reversed the complement of the first color was produced. The effect was very fine. He sent the beam through some plates that were so arranged that they produced a fine-colored heart's-ease on the screen; Another represented a rooster, with all the shades and tints of color which that fowl generally wears, and far more brilliant. When the beam was reversed the complementary colors resulted, and a rooster was seen with a green comb and its feathers colored with red.

Simple Bleaching Process for Oils.—Mix 100 parts of the oil with 2 parts of a mixture of equal parts of 96 per cent. alcohol and sulphuric acid. Where the acid alone is used some of the oil is converted into resin, which does not take place in this case, for the sulphur ether mixes very gradually with it. The green cloud that soon forms afterward turns black, and after standing 24 to 48 hours forms a slight black deposit on the bottom of the vessel. Poppy and rapeseed oil become as clear as water, but linseed oil, when viewed in thick strata, shows a yellowish color. To remove traces of sulphuric acid the decanted oil is mixed with a few liters of hot water and violently shaken, then left standing.

New Mode for Utilizing Silica.—M. Muller proposes the following new mode for utilizsilica:—Reduce the silicate to an impalpable powder and mix with water to form a thick paste, so that it can be moulded. The silica so prepared, on being heated to a bright red, fuses together, giving a vitreous form of pan silica. If the pulverization is to an impalpable powder the entire mass will be so fused; if only coarsely pulverized the larger grains will be sufficiently fused on their surfaces to agglomerate with the silicious powder and thus form a compact whole, but with a less smooth surface than when the whole mass is reduced to an impalpable powder.

Artificial Indigo.—By a scientific investigation, which for difficulty and complexity is almost unequalled, says Professor E. Davies, the coloring matter of indigo, indigotine, has been added to the list of natural products now made artificially. The process is in no sense commercial; but neither was that by which alizarine was first produced. The way being pointed out, probably improvements will be introduced, and indigo become a product of our own country.

Absorption of Ammonia by Nickel.—Boettger finds that nickel absorbs ammonia like palladium. A piece of nickel used as a negative electrode in acidulated water absorbed 165 times its volume of hydrogen. On being detached from the battery and plunged into water, it gave up the whole of its hydrogen in the course of a few days. Palladium absorbs four times as much, and gives it up more rapidly.

Luminous Fungi.—The Rev. M. J. Berkley describes in the *Gardener's Chronicle*, a very remarkable instance of luminosity in fungi. It occurred in the mycelium of an unknown species growing on a trunk of spruce or larch, and vividly illuminating everything in contact with it. It gave almost light enough to read the time on the face of a watch, and continued for three days.

Effect of the Perfume of Flowers. — The presence of the perfume of lavendar in the air increases the power of absorption of heat sixty times, and anise-seed 371 times; hence the perfume arising from a bed of flowers increases the temperature of the air around them.

MECHANICAL PROGRESS.

Metal Paper Hangings.

Paper hangings for walls are known to everybody. It is now proposed to use hangings made of metal, and an account of this new invention, which comes to us from Paris, has been read before the Society of Arts. The metal employed is tinfoil, in sheets about 16 feet long, and from 30 to 40 inches wide. The sheets are painted and dried at a high temperature, and are then decorated with many different patterns, such as foliage, flowers, geometrical figures, imitation of wood, or landscapes. When decorated the sheets are varnished, and again dried, and are then ready for sale. Tinfoil is in itself naturally tough, and the coats laid upon it in preparing it for the market increase the toughness. The hanging of these metallic sheets is similar to paper hanging, except that the wall is varnished with a weak kind of varnish, and the sheet applied thereto. Thus, in this way, a room or a house may be newly painted, without any smell of paint to annoy or harm the inmates. Moreover, tinfoil keeps out damp, and as the varnish is a damp-resister, the protection to the room is two-fold.

Experience has shown also that cornices, moldings and irregular surfaces may be covered with the tinfoil as readily as the flat surface; hence, there is no part of a dwelling house or public building which may not be decorated with these new sheets; and, as regards style and finish, all who saw the specimens exhibited at the reading of the paper were made aware that the highest artistic effects could be achieved at pleasure. The decoration of small tin plates for ornamental purposes has, we hear, been introduced into Cornwall—the county of tin. In this case, the color and pattern are printed on the plates by means of lithographic stones and rollers; but, to insure excellence and permanence, the plates must be heated. Difficulty was first experienced in keeping the plates at the required temperature, the upper part of the oven being always hotter than the lower; but it was overcome by fitting into the oven a vertical roundabout, which carried the plates from top to bottom of the oven during the whole process of heating. We think there are many purposes to which the plates could be applied beyond that of mere ornament.—*Chambers' Journal.*

Machine for Testing Building Material.—We learn from the *Scientific American* that in a paper read at the recent meeting of the American Society of Civil Engineers, Mr. Robert G. Hatfield, architect, of New York, described a machine made by him for practically testing the strength of building materials. It is a platform scale set in a table, and so arranged with hand wheel and gearing as to produce a pressure upon the platform. This pressure is transmitted in the usual manner, by levers on knife edges, to the scale beam. By an ingenious contrivance suggested by Mr. R. F. Hatfield, the poise upon the scale beam, instead of being moved by hand as the pressure is applied, is made to travel by a clock movement, stopping automatically when reaching the point on the beam which represents the pressure upon the platform, thus indicating truly the highest pressure attained. The following were ascertained by this machine to be the comparative strengths of the several kinds of stone mentioned, being the weight in pounds required to break a bar 1 in. square and 1 ft. long in the clear between the bearings:—

Greywacke, North River, Blue stone	250·76
Eastchester marble	150·77
Portland, Conn., sandstone	94·
Belleville, N. J.	88·47
Bricks, North River, Hard	42·74
Bricks, Philadelphia pressed	41 85
Bricks, Perth Amboy	26·36

The above were the best results. Some specimens of materials from the same localities exhibited considerably less strength than that here indicated.

Woven Fabrics from Rabbits' Hair.—The *Austrian Exhibition Gazette* calls attention to a new and important industry, viz., the incorporation of rabbits' hair with wool and cotton in weaving textile fabrics. The shorter hairs which are incapable of being woven, are readily purchased by felt hat manufacturers at $3 a pound. When properly prepared, the hair affords a good strong yarn, which is said to be in no way inferior to wool. If all that the Austrian journal says on the subject be true, the raising of rabbits will soon become an important business. No animal is better adapted to raising on a large scale than the rabbit; they multiply almost as rapidly as white mice, and are not confined to any particular climate. It is rather remarkable that this use of the hair has not been thought of before, particularly when we consider how many hundred million rabbits are annually destroyed. The meat of the rabbit is agreeable and nourishing, and the skins have long been prized. The *Austrian Gazette* anticipates that an important industry will grow out of the successful introduction of rabbit hair weaving in all countries.

Ship-building.—In Maine there is more demand for ship timber than there has been for years, and a capitalist whose interests are directly connected with shipbuilding gives it as his opinion that next year there will be a general revival of shipbuilding in New England.

The Diamond as a Cutting Instrument.

It is noticeable that the diamond as a cutting instrument makes but little headway outside of America. The diamond drill is hardly a subject of experiment in Europe. But here we have proved its value, while we are talking about its results being "still doubtful."

One of the most promising applications of this novel cutting instrument is its introduction for the sawing of stone. A machine for this purpose has been constructed as follows: A broad blade of steel has, at certain intervals, pieces of soft steel placed in its edge, and projecting say three-eighths of an inch. These contain black diamonds, usually three to each holder. As the saw is drawn over the surface of the stone the diamonds make a deep cut, but in the return stroke they are lifted clear of the stone. By this method the cuttings are all drawn gradually to one end, instead of being shoved back and fourth in the cut. The machine does beautiful work. It leaves the surfaces free from saw marks and ready for the polishing stone. The edges are unbroken, and the stone if for building purposes, is ready to set without further preparation. Specimens of its work in all kinds of stone are exhibited, with the time of sawing marked on them. they are indeed admirable pieces of work.

This new use of the diamond is one that appears to have a bright future before it, and its successful introduction in America promises to afford us facilities that may be of the greatest service in encouraging the increased employment of stone as a building material.

An Experiment With Paper Car Wheels The Connecticut River Railroad Company is about introducing, for trial, a set of paper car wheels under the forward truck of one of its engines. These wheels have been known to car-builders for some time, but the demand for them has been moderate on account of their cost, notwithstanding the universally admitted fact that they are safe and easy going. The wheels are manufactured by bringing a pressure of 350 tons upon sheets of common straw paper, which forms them into a compact mass, which is then turned perfectly round and the hub forced into a hole in the center, this requiring a pressure of 25 tons weight. The tire is of steel, and has a one-quarter inch bevel upon its inner edge, thus allowing the paper rolling to be forced in, 250 tons pressure being required in the process. Two iron plates, one upon each side of the paper, are bolted together, which prevents the possibility of the fillings coming out. The tire rests upon the paper only, and partakes of its elasticity in consequence. Although these wheels are much more expensive than those in common use, the patentee claims that they are cheaper in the end, as they wear longer, injure the track less, and run with less noise than wheels of any other pattern.

Machinery for Corn-cutting.—It is remarkable that, with all the inventions of an agricultural nature, there should be nothing in relation to cutting corn. The millions of acres in the United States have still to be cut down by the old corn-knife made out of a piece of old scythe, just as it was cut a hundred years ago; and it all has to be gathered and shocked by hand in the same manner it was in the olden time. Yet it seems as if something might easily be devised. Certainly a machine can be readily adapted to cutting it; but the shocking by machinery could not perhaps be as well done. Still, American genius ought to be equal to the accomplishment of such a machine to perfection; and, only that it has not yet been done, we might hazard a guess that at some future time some one will succeed in doing so.—*Am. Artisan.*

Cutting up Whales by Steam.—The whaling bark Java, of New Bedford, is provided with an upright five horse power engine, to be used in cutting in whales and discharging cargo, hoisting topsails, if required, etc. This must prove a great saving of time and labor, as it usually requires 15 or 16 men to cut in a whale, while, with the help of the engine, six men can easily attend to it. The engine is stationed in the forecastle, occupying a space ten feet by four feet. It will be the first ever carried to sea in a whaler for these purposes. The idea originated with the first officer of the Java, Mr. E. T. Fish, of Falmouth, Mass.

Ornamental Crockery. — A gentleman in New Haven, Conn., has invented a machine for printing in colored and gilt enamels on china and pottery of all kinds which, it is claimed, will revolutionize the whole business of ornamenting crockery, reducing the cost to a small fraction of what it now is. He has applied for patents in several foreign countries as well as in the United States.

Narrow Gauge in Russia—The Fairlie narrow-gauge system in Russia has met with complete success. The Emperor has forwarded to the inventor a bronze medal, in recognition of the value of his engines, which have been placed on the Livny Railroad.

Mr. Bessemer's new anti-sea-sick arrangement has been tried with great satisfaction. Though the vessel rolled, the saloon was as quiet and soothing as a country church on a summer day.

Heavy Bars.—An English firm is rolling iron bars of the enormous weight of 540 pounds per yard of the special quality used in the manufacture of Armstrong guns.

Stock Sales for Week Ending Nov. 28—S. F. Stock & Ex. Board.

NAMES OF COMPANIES.	Assess't.	Shs. in ft.	FRIDAY. Shs	Prices.	SATURDAY. Shs	Prices.	MONDAY. Shs	Prices.	TUESDAY. Shs	Prices.	WEDNESD'Y Shs	Prices.	THURSDAY. Shs	Prices.	Tot'l Sh's Sold.	Assess't Dividends
Adama Hill	*				150	1	100	1					No Session of Board.		250	
Alpha	*	300	20	30	32			½	10	52	35	50¾@51			110	1
Alpe	*	800	27½	60	5¼		200	4½	50	3¾@ 4¼	470	4½@ 4¾			1250	¾
American Flag	§	2600	11½	200	12 @12½		120	11 @11½	180	10 @10½	440	9¾@10			990	2½
Amador Tun	§			150	6 @ 6¾		40	5							190	
Arkansas	§						250	3	140	2¾@ 3					390	
Arizona & Utah	*	1900	1¾	100	2¼		60	2							160	
Belcher		1010	40	550	105 @112		208	111 @ 115	510	104 @108	350	105 @ 106			1825	6
Baltimore Con	*						100	2⅜	30	2	50	2½			180	
Bowery	§	1000	30													
Bacon	§	65	61½				10	10			100	9			110	
Buckeye	*			60	1		40	1¼	30	1	170	1 @ 1⅛	200	87½@1	490	
Best & Belcher		224	100	90	7										90	
Bellevue	‡	8000	2½													
Belmont				500	5 @ 5¼		380	5 @ 5¼	600	4¾@ 5⅛	900	5 @ 5¼	100	4¾@ 5⅛	2480	⅛
Challar	*			228	70 @71½		175	70 @75	110	71	560	69 @71½	375	68 @68	1458	3½
Caledonia	*	5000	10	230	29¾@30½		110	29¾@30	145	29¾@30	345	29 @30	340	26½@28	1170	2½
Cons. Virginia	*	1160	20⅝	90	56¾@57		55	57⅜@59			95	55⅝@58⅝	715	47 @54½	950	2½
Confidence	*	130	192	220	13¼@13½		135	13 @13¾			40	13	295	13 @13¾	690	⅛
Crown Point	*	600	166⅔	410	118 @121		45	119	155	119@ 120	170	118 @ 120	575	109 @ 115	1555	6
Central	*			70	357											
Calaveras	‡	3200	6¼													
Condor	§						100	1¼	100	1½	150	1	20	1	370	
Columbus																
Chapman	§	700	40						150	1⅝					150	
Chief of the Hill		1060	30	495	5½@ 5¾		380	5¼@ 5⅜	30	5½	100	5¼	235	6	1260	¾
Chief East Ex.	§															
Cederburg	‡	1200	20													
Con. Gold Hill Q.	*	13½	537													
Daney		2000	12	100	1		350	1	150	1	15	1¼			615	
Eureka Cone	*	1000	30	1035	19¼@20¼		60	19 @19¼	185	19 @19¼	265	18¾@19	335	18½@18	1930	1¼
Eureka	‡	1680	¼2								5	10			5	
Exchequer	*	400	20				10	18			20	18½	10	14	40	
Eclipse	*	70	357				20	10½@11	20	10½	90	10½	220	10	350	
Empire Mill	*	75	6	150	9¼		250	10			250	9½			650	
Excelsior	§	4500	2⅝													
Gould & Curry	*	1200	4	47	207 @ 215		17	220	20	225 @230	30	225 @ 230	74	220 @ 222	188	7
Golden Chariot	‡	750	14½	210	13¾@14		100	14¾					155	13	360	1
Globe	*	1600	12½	50	1⅞		100	2	50	13¾@ 1⅞	50	1¾			250	
Hale & Norcross	*	400	4	290	@90		170	87 @88	25	88 @90	51	88 @90	165	85 @87	691	3
Hnhn & Hunt	§	3600	8½	905	3⅝@ 4		100	3⅝	320	3¼@ 3½	940	2⅝@ 3¼	60	3	1725	1
Hermes	§			715	13 @14		675	14¾@15½	1170	15¼@16½	990	14¾@16	425	14½@14¾	3975	¾
Ida Elmore	‡	1300	17⅞	20	10		45	9 @50	90	10	80	10			235	
Imperial	*	15	542⅞	370	10 @10⅞		660	10⅝@11	160	10¾@10⅞	125	10¾@10¾	125	10¾@16¼	1440	½
Ingomar	§	1000	40	400	1⅝@ 1⅞		1100	1⅞@ 2¼	327	1⅝@ 1⅞	150	1⅞	60	1⅝	2037	¾
Independent	‡	1800	14						400	40c					400	
Ivanhoe	§	600	5				200	1	100	87½c		100 c50		100 50	500	
Julia	*	2000	15	150	4		115	3¼@ 3½	200	3⅝@ 3¾	350	3⅝@ 3¾	2275	3⅝@ 4¼	3090	¼
Justice	§	3000	7				75	9	160	8¾@ 9	90	9	50	9	324	
Kentuck	*	95	21	12	215 @220		20	210		210	20	210	3	220	55	20
Kentucky	§												50	5	59	
Knickerbocker	*	1200	20	135	5¾@ 5¾		120	5½	20	5	270	5¼@ 5⅜	325	6¼@ 5¼	870	¼
Mammoth		1800	20													
Meadow Valley	§		12¼	1165	21¾@22		1035	20⅜@21¼	2035	20 @20½	938	20 @20¼	1175	20 @20⅛	6548	½
Mahogany		720	137½	450	12 @12¾						35	9 @ 9½	230	11½@12	715	¾
Mooking Bird		1200	25													
McMahon																
Manhattan																
Newark	§	800	40	1070	4¾@ 5⅛		427	4 @ 4⅜	20	4¾	210	4 @ 4½	40	4½	1767	⅝
Ophir	*	1400	12	425	49¾@52				30	54 @56	220	56 @59	65	56¾@57	5784	
O. H. Treasure	‡	800	26⅔	250	6 @ 6¾		150	5¾@ 6	43	5 @ 5½	25	4½	135	55 @56	406	
Overman	*	12.0	10⅝	10	77		10	78	10	77	35	76 @76¾	90	75 @76	155	1
Occidental	*	600	2½	20	1⅝						650	2 @2¼			670	
Piocbe	§	1000	20	13	13¾@14		30	13¼	20	13 @13¾	275	10 @12	470	9¾@10	975	4
Piocbe West	§										100	2			100	
Pioche Phœnix	§						40	3					30	2½	70	
Page & Pannes	§	2400	166⅔	350	2 @ 2¼				240	2¼@ 2¼	400	2 @ 2¼			950	
Pea Vine	§	1000	20	350	1¾				150	1	300	1			800	
Phœnix	*			300	3¾				450	3 @ 3¼	250	3¼@ 3¼			1000	
Raymond & Ely	§	4000	7½	723	99 @ 104		745	91 @95	1035	94 @97	630	102 @ 108	265	109 @ 113	3398	9
Savage	*	800	20	270	86 @88		85	86¾@88	65	85¾@86½	150	84 @86	795	79 @83	1365	5
Seg. Belcher	*	40	10	10	75						40	80	5	78	253	
Sierra Nevada	*	3000	7½	90	15¾@15¾		10	15¾	220	15¾@15¾	145	15¼	80	15	545	¾
Senator	*			400	80c		30	75c	450	75c @80c					880	
Succor	*	7600	3													
Silver Hill	*			570	8½		400	8⅝	140	8	550	7⅞@ 8⅛	95	7½	1265	¾
Silver Peak	*			700	5¾@ 5½		230	5			775	4	275	3½@ 3⅞	1980	1½
South Chariot	‡	660	30½								400	1¾@ 1¾				
Trenoh	*	20	250													
Tecmueoh				200	1¾		50	1¾							250	
Wash. & Creole	§	200	170	130	2¼		140	2¼	480	2¼@ 2½	160	1⅞@ 2¼	350	1¾	1290	¾
Woodville		1400	20	225	6 @ 6⅛				20	5	720	5 @ 5¼	525	5¼	1790	⅞
War Eagle		1000	10													
Utah		1000	20													
Yellow Jacket	*	1200	20	175	105 @110		55	107 @108	35	108 @109	115	106 @ 108	485	101 @ 105	865	5
Yolo Canal		400	95													

NOTE.—†—California. *—Washoe. ‡White Pine. §—Ely District ¶Eureka District. ‖—Idaho. ⊥—Nearly.?—Over.

S. F. Stock and Exchange Board.

THURSDAY, November 28, 1872.

Mining stocks bave, this week, been in light demand, and very little business has been done. To-day being Thanksgiving day, there was no session of the Stock Board. There are few orders in the markst, and prices have ruled low. The stringency of the money market, the large nnmber of assessments, and the few dividends have depressed values and restricted business. Assessments havs been unusnally frequent in the last few months and dividends unusually few. The following assessments have been levied during ths month of November by miuing companies: Alamo, Washoe, 25 cents; Arkansas, Ely Dist., 50 cents; Atlantic & Pacific Cons. Cal., 10 cents; Baltimore Cons. Washos, 50 cents; Calaveras, Cal., 25 csnts; Caledouia, Washoe, $3; Golden Rule, Cal., 50 cents; Great Blue Gravel, Cal., 10 cents; Hndson, Cal., 7⅛ csnts; Hermes, Ely District, $1; Huhn & Hunt, Ely District, $1; Harper, Ely District, 10 cents; Julia, Washoe, $2.50; Lander Cons. Enreka, Nev., 10 cents; Mammotb Blue Gravel, Cal., 8 cents; Mammoth, White Pine, 10 cents; Mina Rica, Cal., 30 cents; McMahon, Schell Creek, 25 cents; Minnesota, Idaho, 50 cents; "420" Washoe, $1; New York Cons., Washoe, 25 cents; Norman, Cal., 5 cents; National, Nye Co., Nev. 50 cents; Old Providence, Cal., 25 cents; Pioche, Ely District, $1; Phœuix, Enreka District, 50 csnts; Piermont M. & M. Co., Nev., 50 csnts; Pacific Borax, Nevada, 35 cents; Placer, Cal., 20 cents; Rising Star, Eureka District, Cal., 15 cents; Savage, Washoe, $10; Sanderson, Cal., 12½ cents; Schsll Creek, Schsll Crsek District, 10 cents; Star Cons., Eureka District, 25 cents; U. S. Grant, Cal., 50 cents; Utah, Washoe, $1; Wellington, Utah, 10 cents; War Eagle, Idaho, $2; Washington & Creole, Ely District, 50 cents; Ward Beecher Cons., White Pine, $1.

Assessments delinqent this month are as follows: Bsllsvue, $6,000; Eliza, $5,000; El Dorado, $3,000; Empire Mill, $50,000; Greenville, $15,000; Gould & Curry, $96,000; Hale & Norcross, $80,000; Howard Hill, $25,000; Imperial, $100,000; Justice, $21,000; Knickerbocker, $24,000; Kentucky, $15,000; Lemon Mill, $20,000; Noonday, $4,000 Ophir, $84,000; O. H. Treasure, $32,000; Overman, $64,000; Peter Walter, $4,000; Peavine, $75,000; Pictou, $5,000. This makes a total of $650,500, the largest amount in one month for some time. The *Bulletin* has compiled tbe following comparative monthly statement which shows very clearly the state of affairs for the past few months:

	Assessments. No.	Assessments. Amount.	Dividends. No.	Dividends. Amount.
May	11	$351,750	5	$1,067,000
June	15	220,850	5	882,000
July	15	278,700	4	852,000
August	9	234,800	5	587,000
September	18	337,900	2	222 000
October	24	584,550	1	210 000
November	21	670,500	2	213,100
Totals	113	$2,679,110	241	[$4,303,100

We must maks a better showing than this if we expect mining to be considered as a favorable means of investment.

Below will be fouud news from the prominent mines later than that in our "Mining Summary."

CHOLLAR POTOSI.—For week ending Nov. 23d, 888 tons of ore were extracted of an averags assay value of $32.40 per ton; 918 tons ssnt to mill.

HALE & NORCROSS.—For week ending Nov. 23d, 1,049 tons of ore were extracted, 886 tons sent to mill, and 1,478 tons remaining on the dnmps.

SAVAGE.—For week ending Nov. 23d, 1,020 tons of ore were extracted of an average assay value of $26.35 per ton; 900 tons were delivered at the mill; and 164 tons remained on dumps.

RAYMOND & ELY.—On the 23d $36,636 was shipped, which addsd to prsvious shipments, makes $230,828 for 21 days, or $10,991.80 per day.

PHŒNIX.—On the 18th $3,947 was shipped; on the 20th, $5,857; on the 23d, $5,697.

EUREKA.—Last wseklj clean up with 10 stamps was 1,700 ounces of amalgam.

From the AMADOR TUNNEL mine, $4,350 has been received. Last shipmeut from tbs MAHOOANY was $5,607.32. Four bars of bullion were shipped from ths SILVER PEAK on the 23d, and ten on the 26th. From the WOODVILLE $4,558.42—proceeds of 100 tons—has been received. From the CEDERBURG, 280 ounces of bnllion was received on the 26th inst. This mine has declared a second dividend, payable on the 30th inst.

OUR MINING SHAREHOLDERS' DIRECTORY.

[COLLECTED WEEKLY FROM ALL NOTICES ADVERTISED IN S. F. JOURNALS.]

ASSESSMENTS.

Name of Co.	Location.	Secretary.	Office in S. F.	Assm't.	Levied.	Delinq't.	Sale.
Alamo G. & S. M. Co.	Washoe.	G. W. R. King.	411 Cal. St.	25	Nov. 2	Dec. 5	Dec. 26
AMAZON S. M. CO.	Ely District.	M. J. McManus.	609 Sacramento St.	50	Oct. 27	Dec. 2	Dec. 23*
Alpine G. M. & M. Co.	Amador Co.	W. L. Ustick.	438 California St.	1.50	Oct. 16	Nov. 16	Nov. 30
Arkansas M. Co.	Ely District.	J. H. Applegate.	729 Monig'ry St.	50	Nov. 6	Dec. 16	Jan. 10
Atlantic & Pacific Con. M. Co.		A. Nagel.	419 California St.	10	Nov. 8	Dec. 18	Dec. 30
Bellevue M. Co.	Placer Co., Cal.	T. F. Cronise.	438 California St.	75	Oct. 12	Nov. 13	Nov. 30
Buckeye M. Co.	Washoe.	Chas. H. Fish.	419 California St.	2 00	Oct. 28	Dec. 2	Dec. 23
Baltimore Con. M. Co.	Washoe.	D. T. Bagley.	401 California St.	50	Nov. 12	Dec. 18	Jan. 11
Calaveras G. M. Co.	Cal.	T. B. Wingard.	218 California St.	25	Nov. 14	Dec. 18	Jan. 7
Caledonia S. M. Co.	Washoe.	R. Wegener.	414 California St.	3 00	Nov. 9	Dec. 13	Jan. 3
Eliza M. & M. Co.	Siskiyou Co., Cal.	T. F. Cronise.	438 California St.	1 00	Oct. 11	Nov. 12	Nov. 28
Emerald Hill M. Co.	Utah.	F. Mudge.	Merchants' Exchange.	50	Oct 17	Nov. 20	Dec. 17
Empire M. & M. Co.	Washoe.	W. E. Dean.	419 Cal. St.	1 00	Oct. 8	Nov. 10	Dec. 2
"420" M. Co.	Washoe.	H. D. Howard.	223 Monig'ry St.	1 00	Nov. 23	Dec. 27	Jan. 14
Gen. Lee S. M. Co.	White Pine.	C. F. Schulze.	426 Monig'ry St.	10	Oct. 29	Dec. 3	Dec. 27
GOLDEN RULE M. Co.	Tuolumne Co.	J. B. Russell.	432 Monig'ry St.	50	Nov. 2	Dec. 3	Jan. 4*
GREAT BLUE G. R. CO.	Cal.	Wm. H. Watson.	302 Monig'ry St.	10	Nov. 16	Dec. 18	Jan. 7*
Hale & Norcross M. Co.	Washoe.	J. F. Lightner.	438 California St.	5 00	Oct. 18	Nov. 2	Dec. 14
Harper S. M. Co.	Ely District.	J. R. Wilde.	306 Monig'ry St.	10	Nov. 23	Dec. 25	Jan. 13
Howard Hill G. M. Co.	Nevada Co.	J. L. King.	411 California St.	1 00	Oct. 23	Nov.	Dec. 16
HUDSON G. M. CO.	Cal.	J. L. King.	411 California St.	7½	Nov. 11	Dec. 16	Jan. 6
Hermes M. Co.	Ely Dist.	B. B. Minor.	411¼ California St.	1 00	Nov. 7	Dec. 13	Jan. 6
Huhn & Hunt S. M. Co.	Ely Dist.	J. Kaplan.	Merchants' Ex.	1 00	Nov. 12	Dec. 18	Jan. 8
Ida Elmore M. Co.	Idaho.	Wm. Willis.	419 Cali ornia St.	2 50	Oct. 25	Nov. 30	Dec. 21
Independent G. M. Co.	Butte Co., Cal.	G. T. Grimes.	240 Montgomery St.	40	Oct. 15	Nov. 19	Dec. 10
INDUS G. & S. M. Co.	Virginia City, Nev.	David Wilder.	24 Merch'te' Ex.	50	Oct. 19	Nov. 23	Dec. 16*
Julia G. & S. M. Co.	Washoe.	A. Nocl.	419 California St.	2 50	Nov. 6	Dec. 10	Dec. 28
KINCAID FLAT M. CO.	Tuolumne Co.	H. H. Cornell.	220 Clay St.	3 00	Oct. 18	Nov. 21	Dec. 10*
Lander Con. M. Co.	Eureka, Nev.	J. Lincoln.	332 Montgomery St.	10	Nov. 14	Dec. 16	Jan. 8
Lemon M. & M. Co.	Eureka District.	J. T. Milliken.	608 Merchant St.	1 00	Oct. 26	Nov. 30	Dec. 20
McMahon S. M. Co.	Schell Creek.	G. R. Spinney.	320 California St.	25	Nov. 25	Dec. 28	Jan. 20
MAMMOTH BLUE G. CO.	Cal.	J. M. Buffington.	New Merchants' Ex.	8	Nov. 18	Dec. 23	Jan. 13*
Mammoth S. M Co.	White Pine.	J. L. King.	411 California St.	10	Nov. 12	Dec. 18	Jan. 8
Minnesota G. & S. M. Co.	Idaho.	Wm. Willis.	419 Cal. St.	50	Nov. 21	Dec. 28	Jan. 18
MINA RICA M. Co.	Placer Co., Cal.	G. R. Spinney.	320 California St.	30	Nov. 19	Dec. 23	Jan. 13*
New York Con. M. Co.	Washoe.	H. G. Kibbe.	419 Cal. St.	25	Nov. 6	Dec. 12	Dec. 30
NOONDAY S. M. CO.	White Pine.	Chas. H. Fish.	419 California St.	20	Oct. 11	Nov. 15	Dec. 4*
NORMAN G. M. Co.	Amador Co.	W. H. Watson.	302 Montgomery St.	5	Nov. 11	Dec. 12	Jan. 4*
National M. Co.	Nye Co., Nev.	B. B. Minor	411½ California St	50	Nov. 7	Dec. 13	Jan. 6
OLD PROVIDENCE M. Co.	Lassen.	Frank Swift.	415 Montgomery St.	25	Nov. 7	Dec. 14	Jan. 6*
O. B. Treasure M. Co.	White Pine.	D. A. Jennings.	401 Cal. St.	1 50	Oct. 9	Nov. 15	Dec. 6
Ophir S. M. Co.	Washoe.	Wm. Sharon.	Merchants' Exchange.	5 00	Oct. 23	Nov. 26	Dec. 13
Pacific Coal M. Co.,	Contra Costa Co.	A. Lachman.	First and Market.	10 00	Sept. 25	Nov. 13	Nov. 30
Panper M. Co.	Idaho.	J. L. King.	411 California St.	50	Oct. 1	Nov. 19	Dec. 16
Peavine S. M. Co.	Ely District, Nev.	C. F. Balcom.	426 Montgomery	25	Oct. 11	Nov. 20	Dec. 16
Placer M. Co.	Placer Co., Cal.	H. J. Owens.	Express Building.	50	Oct. 21	Nov. 26	Dec. 17
Pictou M. Co.	Washoe.	S. Phillips.	415 Montgomery St.	12½	Oct. 18	Nov. 18	Dec. 6
Pioche S. M. Co.	Ely District.	C. E. Elliott.	419 Cal. St.	1 00	Nov. 6	Dec. 12	Jan. 6.
Phœnix S. M. Co.	Eureka District.	J. Maguire.	419 California St.	50	Nov. 8	Dec. 16	Jan. 6
Pacific Borax Co.	Nevada.	E. Lenha.	507 Montg'ry St.	35	Nov. 12	Dec. 12	Dec. 27
PIERMONT M. & M. CO.	Nevada.	J. W. Clark.	418 California St.	50	Nov. 21	Dec. 20	Jan. 24
Placer G. M. & O. Co.	California.	G. W. R. King.	411 Cal. St.	20	Nov. 11	Dec. 14	Jan. 4
Rising Star.	Eureka Dist., Cal.	J. M. Buffington.	Merchants' Ex.	15	Nov. 22	Dec. 27	Jan. 13
Rising Star M. Co.	Idaho.	Wm. Willis.	419 California St.	1 00	Oct. 28	Dec. 3	Dec. 23
Sanderson G. M. Co.	Cal.	W. Stuart.	418 California St.	12½	Nov. 25	Dec. 27	Jan. 17
Savage M. Co.	Washoe.	E. B. Holmes.	401 Cal. St.	$10 00	Nov. 12	Dec. 17	Jan. 4
Schell Creek M. Co.	Schell Creek, Nev.	P. W. Van Winkle.	301 Cal. St.	10	Nov. 1	Dec. 3	Dec. 23
Shipley M. & M. Co.	Placer Co., Cal.	W. L. Ustick.	438 California St.	1 00	Oct. 16	Nov. 16	Nov. 30
Senator S. M. Co.	Washoe.	Henry Bayle	Stevenson's Building.	50	Oct. 29	Dec. 2	Dec. 21
St. Patrick M. Co.	Placer Co., Cal.	D. A. Jennings.	401 Cal. St.	2 00	Oct. 21	Dec. 3	Dec. 24
STATE OF MAINE M. Co.	Amador Co.	H. E. Comdon.	306 Montgomery St.	5	Oct. 17	Nov. 26	Dec. 16*
Star Consolidated M. Co.	Eureka Dist.	G. R. Spinney.	320 Monig'ry St.	25	Nov. 1	Dec. 6	Dec. 27
Tecumseh G. S. & C. M. Co.	Calaveras Co.	F. J. Herrman.	634 Washington St.	25	Oct. 10	Nov. 16	Dec. 5
U. S. GRANT M. CO.	Cal.	Enos Taylor.	226 Clay St.	50	Nov. 19	Dec. 30	Jan. 20
Utah M. Co.	Washoe.	W. E. Dean.	419 California St.	1 00	Nov. 7	Dec. 12	Jan. 4
Washington & Creole M. Co.	Ely Dist.	F. D. Cleary.	Merchants' Ex.	50	Dec. 21	Dec. 26	Jan. 15
Wellington M. & S. Co.	Utah.	R. Wegener.	414 California St.	10	Nov. 12	Dec. 18	Jan. 7
Wer Eagle M. Co.	Idaho.	C. F. Balcolm.	426 Monig'ry St.	2 00	Nov. 4	Dec. 10	Jan. 6
Ward Beecher Con. M. & M. Co.	Nev.	D. A. Jennings.	401 California St.	1 00	Nov. 21	Dec. 28	Jan. 22

MEETINGS.

Name of Co.	Location.	Secretary.	Office in S. F.	Meeting.	Date.
Chief East Ex.	Ely District.	R. Wegener.	414 California St.	Annual.	Dec. 9
Consolidated Creek G. M. Co.		J. L. King.	414 California St.	Special.	Dec. 2
Deseret Cons. M. Co.		J. L. King.	414 California St.	Special.	Dec.
Golden Sun G. M. Co.		S. H. Sheplar.	611 Washington St.	Annual.	Dec. 9
Gould & Curry S. M. Co.	Washoe.	Called by Trustees.	Merchants' Ex.	Special.	Dec. 23
Heckerlorn M. Co.		L. Leorne.	613 Jackson St.	Special.	Oct. 26
Independence Con.	Nevada Co., Cal.	A. F. Benjamin.	420 California St.	Annual.	Dec. 2
Sidney Brooks Tunnel Co.			Merchants Exchange.	Special.	Dec. 7
Storer M. Co.		R. H. Sinton.	Montgomery Block.	Annual.	Dec. 2
Sutro Tunnel Co.	Washoe.	F. W. Ames.	321 California St.	Special.	Dec. 14
War Eagle.	Idaho.	C. F. Balcom.	426 Montgomery St.	Annual.	Dec. 9

LATEST DIVIDENDS—Within Last Three Months.

Name of Co.	Location.	Secretary.	Office in S. F.	Amount.	Payable.
Belcher M. Co.	Washoe.		419 California St.	$3.00.	Sept. 10
Black Diamond Coal Co.	California.	F. B. Cornwall.	Cr. Harrison and Spear.	½ per cent,	Nov. 11
Cederburg G. M. Co.	California.	D. M. Bokee.	420 Montgomery St.	50c.	Nov. 30
Crown Point G. & S. M. Co.	Washoe.	C. E. Elliot.	419 California St.	$3 00	July 5.
Eastport Coos Bay Coal.	Oregon.	J. L. Pool.	Merchants' Ex.	$5 00	Nov. 12
Mahogany G. & S. M. Co.	Idaho.	H. J. Owens.	402 Montg'ry St.	$1 50	Aug. 7
Raymond & Ely M. Co.	Ely Dist., Nev.	A. J. Moulder.	419 California St.	$7 00	Nov. 11
Pioche S. M. Co.	Ely Dist., Nev.	C. E. Elliot.	419 California St.	$1 00	Aug. 10
Providence G. & S. M. Co.		J. M. Buffington.	Merchants Exchange.	$1 00	Nov. 12

* Advertised in this journal.

MINING SUMMARY.

THE following is mostly condensed from journals published in the interior, in proximity to the mines mentioned

California.

ALPINE COUNTY.

TARSHISH.—Monitor *Miner*, Nov. 16: Col. Moore has come upon a 4 ft. vein from whicb Mr. Henry took average samples, assaying over $150 per ton.

SILVER GLANCE drift is running in the casing rock alongside the vein for the sonth chimney. Good indications ars struck daily.

AMADOR COUNTY.

BACON.—Jackson *Dispatch*, Nov. 13: The sbaft is down about 85 ft., at wbich deptb tbey have a 6 ft. ledge of fins looking ore. A fine whim is being erected.

SOUTH KEYSTONE.—The work of opening and developing the mine will be commenced witbout delay.

CALAVERAS COUNTY.

CAMPO SECO.—San Andreas *Citizen*, Nov. 23: The Spencer is prospecting well, a large vein, free gold occasionally visible to the eys. Shaft down 100 ft.

The Sims' tunnel is in about 150 ft.

EL DORADO.—The Madrid shaft is down 165 ft. and a level is being run on the vein, which is 12 ft. wids in the bottom of the drift. There is about 350 tons of rock ready for crushing which assays from $300 to $800, and the sulphurets assay $400, but the rock yields by mill process only $10 per ton.

LLOYD'S.—There is a breast of 70 ft. wids and near 3 ft. desp, which pays exceedingly well.

SCIEFFARD. — At 90 ft. from tbe top they are running a drift across tbe lead to sse how wide it is. Their drift is in 10 ft;, and thsy expect to go 5 or 6 ft. further bsfore reaching foot wall.

WOLVERINE.—Calaveras *Chronicle*, Nov. 23: Rock of unprecedented richness was struck one day last week. At 230 ft. the ledgs has widened out to about 4 ft., and not a piecs of quartz can be found tbat does not show fres gold.

PETTICOAT.—Ths shaft is down 450 ft. and sinking has been discontinued. Levels are being run from the bottom of the shaft both north and south.

HUDSON.—The new machinery was started up Friday of last week. Anotber ledge has recently been discovered near the Hudson that prospscts largely.

MOSQUITO DIST.—The Grasshopper has been stopped for ths present.

Sbaft No. 2 of the Dolly Varden is down 70 ft. Veiu 5 ft. wide and ore improving.

Tbe Cnba shows a vein of 4 ft. in width at 12 ft., with a streak of pay ore 16 inches thick.

In the upper tunnel of the San Bruno preparations ars beiug made for stoping. The lower tunnel is being run in search of a vein. Nsw discoveries are of daily occurrence.

KERN COUNTY.

ECLIPSE. — Havilah *Miner*, Nov. 16 : Tbe Eclipse, at White River, has a large dump of assorted rock, valued at $400 per ton.

BIG DUMP.—The St. John has about 290 tons of $38-rock on dump.

Tbs Bacchus mads a favorable clean-up last week.

CLEAN-UP.—A clean-up of 29 tons of quartz from tbe Jnpiter returned $878.

BIG BLUE MINE.—A clean-up of 60 tons of rock, last week, rsturned a littls over $4,000.

NEVADA COUNTY.

EUREKA.—G. V. *Union*, Nov. 24: The Eureka had a clean-up yesterday, after a run of six days, witb 10 stamps, and tbe amalgam produced amounted to 1,700 ounces, or $12,000.

IDAHO.—The Idaho new machinsry has been running for 2 weeks. Yesterday tbere were bars of gold valued at over $22,000 brought in, the product of the run.

WYOMING.—Ths owners propose to put up hoisting works, erect a mill and to opeu the mine in a most thorough manner. A devslopment made in ths west drift shows splendid-looking ore and very rich sulphurets. There ars about 300 tons of fine milling ore on dump. The rock pays about $30 per ton.

RISING STAR.—Nsvada *Transcript*, Nov. 23: Thsy bave struck a rich body of ors, showing free gold and rich sulphurets.

THAT RICH LEDGE.—Ws have published ssveral items in rsgard to the ricb discovery ou Wood's ravine. The last crnshing a few days ago netted about $50 per ton, and the snlphurets assay $204 per ton. The ledge is bstween 3 and 4 ft. in tbickness, and they are down ou it about 50 ft. There is a seam running through ths entire ledge, so far as it has been opened of between 3 and 4 incbes which is "lousy" witb gold.

MOHAWK.—The shaft is down 75 ft., and is being sunk at tbe rate of about 3 ft. psr day.

COPPER.—Marysville *Defender*, Nov. 19: The coppsr mines near Spencsville are being workd. Smelting furnaces will be erected, and tbe ledgss fairly tssted.

SIERRA COUNTY.

Rich.—Downieville *Messenger*, Nov. 19: The Bald Claim, Forest City, is reported richer than ever.

Got the Ledge.—The Oro owners have tapped the ledge in two places, several hundred feet apart, and at considerable depth. It prospects well in both places.

Oak.—Truckee *Republican*, Nov. 19: W. R. Litchfield, presented us yesterday with some very fine specimens of silver and copper ore from the Bullion, Antelope Neck. The Bullion has been opened by a shaft to the depth of 75 ft. The ore assays 20 per ct. of copper, and about $60 in silver per ton.

SISKIYOU COUNTY.

Prospecting.—Yreka *Union*, Nov. 16: There has been considerable prospecting in the eastern part of this county; and there are several persons still engaged.

Humbug.—On Lawson Gulch, P. McGarvey has done well, as also a Chinese Co.

A China Co. below Riverville, have done very well.

D. N. Lash and S. H. Crary are running a tunnel into the old Sebastapool claim.

Lash & Lecty are making good pay on the main stream, below the Forks.

White & Co. are averaging $100 per week to each partner above expenses.

TUOLUMNE COUNTY.

Strike.—Sonora *Independent*, Nov. 20: N. Banle & P. Banle struck a rich pocket in the Bald Mountain lode and took out 18 lbs. of gold mixed with very little rock. The vein averages about 6 inches in thickness.

Another Strike.—Sonora *Democrat*, Nov. 22: A Rocco and Co. struck very rich gold-bearing rock last week, in a quartz vein in the Deer Flat hill.

Nevada.

EUREKA DISTRICT.

Strike.—Eureka *Sentinel*, Nov. 23: Another large body of fine ore has been developed within the last day or two in the Phenix.

Seaton.—A shaft has been sunk 17 ft., and at the bottom shows a well defined vein of ore about 2½ ft. in width. Active operations will be commenced within a few days. The Springfield, owned by the same parties, is only a short distance from it. A shaft has been sunk 30 ft. and the indications are very encouraging.

Starten Up.—The works of the Ruby Con. Co. started up on Friday. The furnace seems to work perfectly, and bullion was turned out yesterday.

ELY DISTRICT.

Bullion.—Ely *Record*, Nov. 17: Shipments for the past week were $110,844.38.

Silver Peak.—The main shaft is down 120 ft. On the 90-ft. level drifts running both east and west have proven the ledge to be well defined and from 3 to 9 ft. wide, with an average of 4 ft. of pay ore. They are taking out from 12 to 15 tons per day, which will mill at least $100.

Portland East Ex.—The shaft has reached 60 ft. in depth, and the vein is fully defined. Assays were taken which run from $125 to $150 to the ton. It is probable that within 30 days an immense body of ore will be struck.

Chapman.—Hoisting works will be erected soon. Arrangements have been made with the American Flag mill to work 500 tons of ore. There is on dump about 160 tons. The force of men will be increased in the stopes next week, and the ore extracted from the upper levels. The ledge cut at the 160-ft. level is improving.

Assaying.—T. R. Butler, during the past week, has been steadily at work melting and refining bullion from the Pioche and Condor mills. Thirteen bars from the Pioche averages about 900 and that from the Condor 800.

Ivanhoe.—Drifting east and west on the vein. At a depth of 200 ft., considerable ore is being hoisted and is found to be first-class. Assays made yesterday showed $575 to the ton.

Newark.—About 3 tons of first-class ore is raised daily. The winze in the west drift, first level, is looking well and improves with depth. The main shaft has reached 97 ft. below the first level. On Monday a drift will be started south to cut the ledge.

Marion.—The sinking has reached 100 ft. The stopes in the drift are looking well; 3 tons of ore from the stope have been placed on dump in the last two days.

Floral Mill.—The work is being pushed forward rapidly, and the mill will be ready for operation on the 15th of next month.

Kentucky.—Is being worked vigorously.

Portland Co.—Working 4 shifts. The perpendicular shaft has reached 110 ft. Workmen are drifting from the main shaft, on the ledge, which is 5 ft. in width, and are taking out ore of a superior quality. About 70 tons of good pay ore are on dump.

Chief of the Hill.—Taking out 4 to 6 tons daily, which is being crushed at the Magnet Mill. The battery assays are higher than heretofore. Winzes Nos. 2 and 3 are down about 90 ft. Will commence shipping bullion in a day or two.

Baltic.—The contract of 100 ft. was completed on the 9th inst. The ledge looks well, carrying small bunches of good ore.

Pioche Champion.—Working 2 shifts. Down 140 ft. and looking remarkably well. Expect to strike pay ore soon.

Pacific Tunnel.—In 1,068 ft. Drifting 542 ft. and have struck rich ore.

HUMBOLDT.

Bullion.—Unionville *Silver State*, Nov. 16: Amount shipped from the Arizona since our last issue, was $6,872.

Central.—Same paper, Nov. 13: The shaft on the Marietta is down 220 ft. The ledge in the bottom is 3 ft. wide, and carries ore of excellent quality. Work is being prosecuted on the Teamster. The Central mill was started up last Monday, on ore from the Potosi.

Roasting Furnace.—The Pioneer & Inskip Co. have contracted for the construction of a roasting furnace.

REESE RIVER.

Belmont.—Reese River *Reveille*, Nov. 16: The Monitor will start up about the 1st prox. The El Dorado Co.'s mill has all the foundations laid, the battery blocks set, smoke stack up, and the lower portions of the furnace well under way. This Co. is opening up its two mines in shape to keep its mill running steadily. Several large bodies of good ore are exposed in the 340-ft. level; splendid ore is being taken from the 240-ft. level of north incline; 400 ft. of level contract goes ahead fast. In the Arizona first class ore has been found 200 ft. north of the Monitor line. This Co. is working 70 men.

Monitor Co.—Will commence stoping out as soon as the ore is needed for the mill, the ore house and dump being already filled with assorted ore. Working 60 men.

Belmont Co.—Continuing its levels in Canfield under contracts with favorable prospects. Hoisting works nearly finished. Working 25 men.

Combination Co.—Taking out fine ore from the Translyvania. Working 25 men.

WASHOE.

Chollar-Potosi.—Gold Hill *News*, Nov. 23: Daily yield 165 tons, worth $29 per ton. Repairing the shaft is completed to the head of the incline. The incline will be put in good working order as fast as possible.

Con. Virginia.—The shaft is down 50 ft. below the 500-ft. level. Work has been resumed in the west drift of the 1167-ft. level from the Gould & Curry shaft. Erecting the new hoisting works progresses finely.

Imperial-Empire. — The foundation work for the new pumping machinery is approaching completion.

Belcher.—Daily yield 300 tons. The main incline is down 133 ft. below the 1100-ft. level. The 1200-ft. level shows better as further developed, and the ore breasts of the 1100 and 1000-ft. levels look and yield well.

Hale & Norcross.—Daily yield 140 tons. The main incline is down 337 ft. below the 1500-ft. level. The work of sinking a winze from the 1500-ft. level to connect with and ventilate the 1700-ft. level is commenced.

Silver Hill.—The north drift at the first station is following the ore vein, which is 7 ft. wide and of moderate grade. In the south drift, first station, the ore body is 5½ ft. wide, assays of which average $13 per ton. The raise to connect with the winze from the old upper tunnel is 23 ft. above the level of the first station, at which point the ore body is 12 ft. in width and of good quality. In the winze below the old tunnel level the ore continues of an excellent quality and the width of the body is unknown.

Schell Creek.—Schell Creek *Prospect*, Nov. 16: The McMahon is looking better. The shaft is down 110 ft. from the croppings, the bottom of it looking exceedingly well, the ore vein being 3 or 4 ft. in width. The intention of the Co. is to sink the shaft 170 ft. to connect with the tunnel. The tunnel is in some 140 ft. showing considerable vein matter. The Jupiter is worked to good advantage, a marked change for the better having taken place within the last few days. The Kavanagh tunnel is in about 115 ft. in a granite and quartz formation, and is improving in appearance daily. The mines of Queen Springs, Centreville, and Ruby Hill are looking their best, but little or no work is being done on them owing to the cold weather. Work on the Tehama mill has been temporarily stopped.

Savage.—Daily yield 150 tons worth $28 per ton. The incline is down 49 ft. below the 1,600-ft. level in good sinking ground. Both the main north and south drifts on the 1,600-ft. level are being driven vigorously ahead.

Caledonia.—Work on the 400-ft. level progresses with the exception that a new drift, running northward, has been started on that level.

Succor.—Shaft down 215 ft. Rock hard.

Crown Point.—The 1,300-ft. level developments showing better than last week, and the ore breasts in the other levels yielding splendidly.

Globe.—The main west tunnel is pushed vigorously ahead. A raise has been commenced from the tunnel level in the ore body already penetrated.

Baltimore Cons.—Shaft down 320 ft. The drift at the 250-ft. level is in 80 ft. from the shaft.

Julia.—Fair progress is made in sinking the shaft. The main east drift is in 307 ft. in low grade ore.

Insurance.—The incline is down 40 ft. below the tunnel level, in ore that assays from $8 to $23 per ton.

Yellow Jacket.—Drifting and cross-cutting at the 1,300-ft. level. Drifting east for the ledge at the 1,400 and 1,500-ft. levels is progressing.

Overman.—Work on the new machinery goes steadily on.

Knickerbocker.—The main west drift is in 352 ft., the face in blasting porphyry with occasional streaks of clay and quartz.

Senator.—The shaft is down 297 ft. in barren quartz. Good progress has been made during the week.

Buckeye—Turning out an unusual amount of good ore.

Woodville.—Everything working finely.

WHITE PINE.

Eberhardt & Aurora Co.'s Mines.—White Pine *News*, Nov. 16: The Eberhardt, Blue Belle and Attwood shafts have connected at the lower level, and sinking for better ventilation. The DePass and Ridsdale chambers are full of broken-down rock. Prosecuting the drift from the bottom of the North Risdale chambers to the north. The central shaft is down 160 ft. Running a drift from the Lady's chamber south to connect with the central shaft.

Beecher Cons.—The mine has shut down temporarily.

O. H. Treasure.—The various workings are looking well; considerable dead work is being done with fair indications. The Wheeler tunnel is being pushed ahead in spar and vein matter, which is dipping downward.

Sunbeam.—Sinking in the Moscow shaft, and running a little to the south in quartz and black spar. The mine shows some improvement.

Mammoth.—The bottom of the shaft is looking well, and down about 65 ft. in good ore.

Silver Plate.—Running in the tunnel, which is over 60 ft. deep, and in good ore.

Noonday.—Struck rich ore in the crosscut of the lower level. Penetrated the ore body 4 ft. and found good ore still ahead. Average of several assays above $200 per ton.

East Sheboygan.—Prospecting and forming connection with the south drift, with good indications of striking ore.

Copper Glance.—Breasting ore from the northwest drift.

Outside Dists.—Muncy Creek.—The Muncy Creek Cons. Co. will start up work on their mines about the 20th inst. The Co. is down on one of their claims 33 ft., in carbonate ore, and in another a tunnel of 30 ft. has been run in the same mineral.

Ruby Hill.—A body of rich ore has been struck in the Lookout.

Hunter.—The owners of some of the principal mines are about to start up work on their property.

Arizona.

Items.—Prescott *Miner*, Nov. 9: A. B. Smith, of Lynx Creek, says water was very scarce when he left.

In the past 18 months, one miner has taken out, with his rocker, nearly $5,000 in gold.

The miners of Mohave and Yuma Counties are shipping a great deal of gold, silver and copper ores, to S. F.

Montana.

Spokane Bar. Helena *Herald*, Nov. 14: Mr. Stewart last week cleaned up $1,135. of fine gold dust from his claim and his summers's work has netted him over $3,000.

Phillipsburg.—The 5-stamp mill of the Imperial Co. is pounding out the Silver bullion very successfully.

Items.—Virginia *Montanian*, Nov. 14: A lot of magnificent ore came in on Saturday from the lead owned by Word, Morris & Co., Silver Shower Dist. The recent development has discovered a solid vein of first-class ore fully 3 ft. thick, which pays $300 per ton.

The Messrs. Covely, at Summit, are taking out a splendid quality of rock. The test run on their ledge, from 20 ft. development, runs over $24 per ton.

The Cork Co. have been cleaning up for the past two months, with a daily average of $30 per day to the hand.

Idaho.

Rich.—Idaho *Statesman*, Nov. 16: Gov. Bennett and others, mining on Republican river, struck it very rich last week. Several spots panned out from $50 to $500 to the pan.

Ina Ellmore.—Silver City *Avalanche*, Nov. 16: High grade ore continues to be raised from the 7th and 8th levels. The ore house and all the ore chutes are full of ore. To-morrow they will resume hauling ore to mill. The main shaft is down 60 ft. for the 9th level, and the winze, 66 ft. north of the shaft is down 52 ft. below the 8th level in fine looking ore.

Minnesota.—The shaft is down nearly 400 ft.—about 80 ft. below the fourth level. The ledge has gone to the east of the shaft for the last 20 or 30 ft. The 4th level drift south and the south winze are connected; they have commenced stoping from the winze each way, and will soon be taking out from 10 to 15 tons of ore a day that will mill $35 to $40.

Red Jacket.—The large adit level is going ahead rapidly, and the face of the drift is in fair pay ore.

South Chariot—The shaft is down 15 ft. for the 7th level, and the 3d and 6th level drifts north will be started next week.

Empire.—The 1st, 2d and 3d levels are being driven north into the hill, which gives about 300 ft. of backs on the north side of the shaft and about 200 ft. on the south. The 2d level drift south is in 140 odd ft. to the south winze. On the north side of the shaft, underhand stoping is going on at a rapid rate. The 2d level drift is in north about 160 ft., making the entire distance of that level on the vein, 300 ft. The 3d level drifts are fairly started. Underhand stoping has been commenced on each side of the shaft below the 2d level. The shaft is down 30 feet below the 3d level, with good sinking and going down at the rate of 10 ft. per week. The Owyhee Co's mill is running 20-stamps on Empire ore, of which three are between 300 and 400 tons on the mill-yard, 200 in the ore house, and 150 broken down in the mine; 75 men are employed.

Mahoany.—They have struck it in the 6th level, 113 ft. south. The ledge is 18 inches wide, and the richest ore that we have seen in camp for many a day.

Golden Chariot.—The 4th level south is in 160 ft., from which point a winze has been sunk to the 5th level, where they are stoping in the true vein. There are 20 men at work stoping in the 5th level, where the vein looks well for 200 ft. They have struck rich ore in the bottom of the 6th level drift 210 ft. south of the shaft, at which point 10 men are stoping. The 9th level south drift is in 62 ft., and the vein continues to look well. From 15 to 20 tons a day are being raised from the 5th and 6th levels; 10 stamps of the Ellmore mill are running on Chariot ore.

War Eagle.—Will commence hauling ore to the Owyhee mill to-morrow for another crushing.

Utah.

American Fork.—S. L. *Tribune*, Nov. 19: The Wild Dutchman consists of a vein of argentiferous galena and chlorides about 3 ft. in width between the wall-rocks, which are composed of limestone. This mine has on hand about 250 tons, assaying on an average $200 in silver.

The Miller ore produces bullion about $100 in silver and $10 to $28 in gold, with a small per cent. of copper.

The Alta consists of a vein of argentiferous ore containing grey carbonates, and yellow and green chlorides. It is 4 ft. between well defined wall rocks consisting of a dark limestone. The discovery shaft has been worked but a few feet in depth. A tunnel has been opened on the vein and worked 60 ft. About 15 tons of ore has been taken from this tunnel assaying from $100 to $400 silver per ton and 35 per cent lead.

Little Cottonwood.—S. L. *Journal*, Nov. 16: In the Grizzly the vein is about 18 ft. in width, and shows a body of good ore throughout. The Victoria tunnel is in about 200 ft.

California Trout.

The most delicious fish we have on this coast are our trout, and very few streams will be found without them. In localities within reasonable distances of the city, they afford great amusement for amateur Isaac Waltons, and further off the Indians depend upon them for a portion of their subsistence, and ranchmen vary their diet of bacon and beans, or mutton, with an occasional dish of trout. The abundance of these fish in most streams is, however, no excuse for parties to slaughter them wholesale by the use of Giant Powder, or with seines. The former method was extensively practiced until forbidden by law. Large charges of Giant Powder were placed in a favorable spot in a creed and then exploded. The concussion caused the fish to come to the surface, where they were captured in large quantities.

The use of seines is almost as bad as this, and more especially when used in breeding seasons. The law forbids the catching of trout during certain seasons, varying in different counties of the State, and we believe, expressly prohibits the use of seines in any instance; nevertheless this rule is frequently broken. We know of an instance where a gentleman in Marin County, after stocking a creek on his private property with fish, at considerable expense, found to his chagrin that an enterprising Frenchman had taken advantage of his temporary absence, and had captured nearly all the fish in the stream by means of nets. If this practice is allowed to continue, it will result in a total extermination of our brook trout, much to the sorrow of legitimate sportsmen.

The Fish Commissioners have been very active in endeavoring to suppress all of these nefarious practices, and we hope they will continue to do so. A contemporary mentions an instance of wholesale destruction, which only occurred last week, in which a two-horse wagon load of salmon trout were caught in Pescadero Creek, with a seine. That particular locality is one that should be especially guarded, since its close proximity to the city renders it a favorite resort for sportsmen in the summer. It would be well to see that all such creeks as Purissima, San Gregorio, Pescadero, Butano, White House, Waddel's, Scott's, San Lorenzo and others on the Coast, with which sportsmen are familiar, should have some sort of supervision from residents near them, to prevent similar depredations occurring there.

The trouble taken by many gentlemen in this State in pisciculture will be more than counterbalanced by a few dozen men with nets; and while some are endeavoring to stock new creeks with fish, others will be emptying the inhabited ones by means unbecoming sportsmen. There are so many people who delight in angling that it is a pity that their sport should be stopped to satisfy the pecuniary desires of a few "pot-hunters." If every farmer who lives near a creek which contains these finny beauties, were to keep an eye on the people who they see in the neighborhood, and would report to the Fish Commissioners any violation of the law, these offences would be much less frequent.

Miscellaneous.

Mining Operations in Lower California.

A correspondent of the *Alta* writes as follows from San Diego, under date of November 14th:

Since the discovery of placer diggings, which was made in 1870, by Ambrosio del Castillo, in the Valley of San Rafael, in Lower California, about 90 miles south of San Diego, several veins of quartz have been discovered in the same district. They are generally found rich in gold, with an additional percentage of silver as the developments become deeper.

Among these veins those best known are

The Trinidad and San Nicholas.

The first was discovered by parties in the interest of Castillo & Co. Notwithstanding it has been poorly worked, the proprietors have profited by a good yield of the precious metal. The want of machinery is the cause of slow progress. Until about four months ago this mine has been what is called a pocket mine (*mina bolsera.*) It was found generally that the vein was only two or three inches in width, while at irregular intervals of distance they encountered pockets so rich in metal that in the space of five or six feet they have yielded from ten to twelve thousand dollars. Since then the vein has been constantly widening as work progressed, so that now—at a depth of ninety feet—it has a width of three feet. The ores extracted now are yielding seventy-five dollars to the ton. The proprietors are negotiating with San Francisco parties for a ten-stamp mill, to be erected at the mine. They are to give a one-third interest in the mine for such increased facilities for working.

The San Nicholas is also reported to be very rich. It was discovered by Enrique Leon & Co. It is the only mine in the valley which has a mill of ten stamps. The weekly product in gold at present is reported to be from $2,000 to $2,500.

The other veins which have been up to the present time discovered in this district—among which are La del Pueblo, La Amistad, La de Zapata, and others, the names of which are forgotten by the writer—are believed to be rich, but they have not yet been sufficiently developed to determine their value.

The Real del Castillo.

This mining district, which is situated at one end of the beautiful Valley of San Rafael, is named "Real del Castillo," after the discoverer. There is water and wood (oak, willow, sycamore, etc.,) in the immediate vicinity. Some of the miners complain that the local provincial or territorial authorities do not stimulate or encourage the work of prospecting and developing the riches of the country, but discriminate between the people coming there, and check immigration.

A resident mine owner, writing in Spanish to your correspondent, says:—"Since the administration of the Sub-Prefect, Manuel C. Rojo, who now rules La Frontera, a righteous administration of justice has not been known. There is no government there based on laws; there is no other will but that of his supreme absolutism, supported by his ready tools, the Justices of the Peace and the Town Council (Ayuntamiento). In consequence thereof many worthy and industrious citizens have been compelled to leave the country, fleeing before the acts of these authorities, and abandoning their interests in fear of assassination—that is to say, they persecute the worthy man and protect the bad man."

Fortunately for the inhabitants of this district, the Governor of the Territory, who resides at La Paz, (Capital of Lower California,) listening to the many complaints which have been preferred against the Sub-Prefect, has named already another to take his place. He is expected to arrive by the next steamer from the coast of Mexico. If this be true, there is not the least doubt but that this section of Lower California will receive a large immigration within a few months, instead of having, as at present, only about four hundred inhabitants; because then, in place of being ruled by a demoralizing authority, which combines every class of vicious men, they will be governed by the young man, Coronel Jose Maria Villagrana, which, according to reliable information, is the name of the one who is to relieve Rojo.

This Coronel Villagrana is one of the most talented men of La Paz, and was formerly the Secretary of the Governor of that capital; and I do not doubt but that the Frontera will progress very rapidly under the Administration of so distinguished a Mexican, inasmuch as I have already indicated that that beautiful and rich country, in order to be prosperous, needs only an authority that will cause the law to be respected, giving guarantees to all its inhabitants.

Interesting Mineral Land Decision.

As the question whether land is mineral or agricultural is one of great importance and frequently arising, we give below the opinion of the Register and Receiver of the Sacramento Land Office in the contested case of Blakely, mineral applicant, vs. Johnson, agricultural claimant. The Register and Receiver, after reciting the record facts, proceed as follows:

The evidence shows that Johnson, the agricultural claimant, settled upon the land in contest in the year A. D. 1849, and has lived upon it and made his home ever since—rearing upon it a family of children.

Blakely, the mineral claimant, and his grantors, went into possession of a small part of the disputed premises in September, 1867, under a contract with said Johnson, who was then in possession, by the terms of which the possession was to revert to Johnson after the expiration of four years and nine months from the 20th day of September, 1867.

Johnson has valuable improvements on the land, is a *bona fide* settler and has been since 1849, and filed on the land in time.

It is insisted by counsel for the mineral claimant that the only question to be decided in this proceeding is whether the land in contest should be treated as mineral or agricultural. We will therefore examine the question first.

The present case differs from most of the cases tried in this office which involves the character of the land. As the general rule in that class of cases, the land claimed to be agricultural is the common red land of the mountain slopes of the Sierra Nevada. Such land is very valuable for the cultivation of the vine—a branch of agriculture yet in its infancy—and of fruits of almost every variety. With little manuring, and such cultivation as lands in the Eastern States receive, it would successfully grow nearly all the grains and vegetables. It is generally believed by those best acquainted with this subject, that in a few years the most thrifty farmers in the State will be found on this character of land. Still such land could not with propriety be called rich and fertile. It could not be classed with the first quality of agricultural lands. The soil is light, and exhaustive crops would soon make manuring necessary.

It is in the kind of land above described that gold mines are generally found or claimed. It overlies gravel hills and ledges of quartz; and as the general estimate of its agricultural value has been very low, and as there is a good deal of such land, the fact that it contains good mines which will pay ordinary days' wages by extensive working, has been deemed sufficient warrant for its destruction by mining processes. This rule of decision has perhaps been carried too far in view of a wise consideration of the future; but under the law and the decisions such land must be held mineral, when it can be mined with any profit whatever.

The land in contest in this case, however, differs very materially from the class of land described. That portion of it which is claimed to be mineral is rich bottom land, such as is seldom found in the Sierra Nevadas. It is natural meadow land, with a rich black soil several feet in depth. Such land is very valuable for agricultural purposes in that region of country—much more valuable than it would be where such land is common. It will grow in large quantities almost all kinds of agricultural products at a locality where such products command the highest price. Evidently, therefore, this land should not be considered more valuable for mineral than for agricultural purposes, unless it appears affirmatively that the washing away of such valuable soil by mining processes will pay a handsome profit. But upon a careful examination of the evidence we fail to see that the mining already done on this land has paid the expenses incurred in working it. The mineral claimant seems to have been sluicing off this rich soil with the vain hope of some time or other making it profitable. And yet he has worked out what is evidently the best part of the land for mining purposes. There is no probability that what remains will pay better than the part already worked. He had already sluiced off the centre or lowest part of this meadow, where the richest deposit of gold would naturally be. More clear profit could have been made from the agricultural products of the land annually, if it had been carefully farmed, than the evidence shows to have been received from mining it. The use of it for agricultural purposes would have left the land in its original condition, a source of continuous profit in the future; all of it that has been mined is practically destroyed. A true statement of the question is this: If the land was owned in fee simple by a man of good judgment, well acquainted with both mining and farming, and knowing all about the premises that is shown by the evidence, would he preserve it for agriculture, or destroy it by mining?

Geological Survey of the Yellowstone.

Outline of what has been Accomplished.

The U. S. Geological Surveying party of Dr. F. V. Hayden, has returned from their trip of exploration from the Yellowstone District, Gallatin, Madison and Snake River country.

One division of the party explored the first named district.

The second, and largest division, were to explore to hitherto unknown sources of the Snake River, its tributaries, together with its lakes and mountain ranges. Among the principal objects during their "trip of observation," was also the Teton range, situated on the west-ern bank of the Snake river, and near a large and most interesting lake known formerly, through indefinite maps and charts, as "Jackson's Lake."

The main observation of the Snake River Division commenced near Fort Hall, and proceeded northward to a point where the two great forks of the Snake river form a junction, namely: Henry's or North Fork of Snake river, and main Snake river. Thence they proceeded eastward for twenty miles to a place near the Crater Butte, two extinct volcanoes; followed the North Fork up to the junction with the Middle Fork; crossed and located on their route for 40 miles towards the east, over thirty streams of more or less magnitude, and reached (after exploring a good part of the Teton River Cañon,) the Teton range, where the Teton river emerges out of this most interesting, and in more than one respect, characteristic Mountain Range.

From there (after due observations) the party's march was directed northward to the upper waters of the Henry's Fork—which river has for its source a magnificent lake, surrounded by picturesque and commanding mountain ranges.

From there, the party proceeded through Targhis Pass into the Upper Madison Basin, and through Upper Madison Cañon into the Geyser or Fire Hole Basin.

Thorough observations, in all branches of science, were made at the latter place, which, in due course of time, will prove to be one of the most interesting spots on earth.

From there the party's attention was directed to the discovery of the main source of the Snake river.

In order to obtain this object, one branch of the expedition explored several Mountain Divides to the south and to the east, located on Shoshonee and Lewis Lakes properly, and discovered also the head-waters of the Middle Fork.

The main party proceeded after this, through a steep and high cañon, through which the outlet of Lewis Lake flows into the upper main Snake River Valley, while the topographer, with a small party of men, made a tour of over 150 miles, and visited all the principal sources of the East Snake River waters, together with their cañons and ranges, thereby obtaining information that will greatly improve our geographical knowledge of that part of the country.

Another large stream, with nine magnificent falls, was also discovered and followed up. It was found to be a tributary to the Middle Fork, situated at the northern extremity of the Teton Range.

The large stream known to the trappers by the name of "Buffalo Fork," was followed up by the surveying party for forty-five miles into almost impenetrable cañons. So were several other important side streams of this *terra incognita.*

The finishing part of the work was done in thoroughly examining the East Teton Basin, its grand and splendid Lake, the immense Mountain range of the Teton, with its narrow defiles, and its numerous Snowy Peaks.

The surveying party were finally compelled to force a passage through the two lower Snake River cañons, making a march of eighty miles in length. It took nine days of hard travel, while the main party proceeded through the so-called South Pass of the Teton Range.

The place of re-union was a camp near the mouth of the Lower Snake River cañon.

All camps during the whole trip were astronomically located, and both latitude and longitude taken, together with meterological observations. Botany and everything pertaining to the different branches of science, also received the most careful attention, and nothing was left undone that might promote the interests of science or aid in the development of the hitherto unexplored portions of our country.—*Ex.*

Iron Ore.—The Grass Valley *Union* says: The iron ore claims, located a few weeks ago by Messrs. A. H. Hagadorn and George K. Phillipa, is appearing exceedingly well. The claims are two or three miles east of Nevada city. Samples of the ore has been sent to San Francisco for working trial, and the ore proved to be 75 per cent. of iron of the best quality. A company to work the mine has been incorporated. The company will have plenty of capital, and its affairs will be managed by experienced men. How this county does need a narrow gauge railroad through its interior, so that its iron, copper, marble, lumber and other things can be sent to market.

Oregon Mines.—The quartz mines of Baker county, Oregon, are beginning to receive more attention than heretofore, and two new mills have been erected near Hogem, and one at Gem City, both of which are being worked with good results.

Mining Matters in Nevada County, Cal.

Mining prospects in this vicinity are most excellent, says the Nevada City *Transcript*, and a large number of men are employed in the several newly developed mines. The indications are that next Spring and Summer will be the most prosperous mining season, so far as quartz is concerned, that the county has ever known.

Nevada District.

In this district, during the past few months, a number of new mines have been worked and good ledges have been struck with pay rock. The Providence, Gold Tunnel, Nevada, Pennsylvania, the Murchis mine and several others which we do not now call to mind. The California, Gold Run or old Mohawk, Home and a number of others are being worked or about to be opened in this district. The forces employed in quartz mines has been largely increased by the working of these mines.

Eureka District.

The Eureka District, near Granvilla, is also looking well. The Rising Star, formerly the old Grizzly, is being prospected under the superintendence of Mr. Moran. They have a fine ledge 2,000 feet below the surface in the tunnel, which is from 2 to 7 feet wide and shows free gold all through it. The prospects of these mines are most excellent. The Erie, which was sold to an English company for $200,000 some time ago, is being fitted up in the most thorough manner. The heaviest kind of machinery is being put up, and in the Spring a systematic opening of the mine will commence. There are a large number of other ledges in the vicinity which show excellent prospects, and this, in time, will be a prosperous district.

Grizzly Ridge.

A company is being organized to again work the ledges on Grizzly Ridge near Columbia Hill. Several years ago these ledges were worked and some very rich rock was taken out, but litigation among owners and bad management in working prevented them from paying and for several years they have not been worked.

Grass Valley.

A marked improvement has occurred in the condition of the quartz mines in Grass Valley district in the last two months, and we learn that every man in that district who desires employment can now find it.

Photographers' Materials on this Coast.

In full accord with the remarkable progress of photography on this coast, is the increase in the manufacture and sale of photographers' materials at the establishment of John Taylor & Co., Nos. 512 to 518 Washington street. Four years ago this firm created a special department for the implements and accessories of photography, having at that time some $3,000 worth of goods on hand and in various stages of manufacture, and such has been the growth of the business that their stock now represents $40,000. It is interesting to learn that the competition of Eastern firms who sent out runners, and by other means endeavored to exterminate this California industry while it was yet in its infancy, met with a signal defeat at every turn, and they eventually allowed Taylor & Co., to have their own way. The manufacturing department is devoted to frame work. Here the charming rustic frames, so popular in the ornamentation of parlors, are wrought into graceful forms by skilled workmen, and the more ambitious gilt frames are also produced. In some instances, the leaves and vines and bits or branches of the frames are moulded in the East and received shaped and finished at the hands of the local workmen, and again the entire work is done here. Five men are at present employed in the manufactura and gilding of the frames, and as the demand increases the facilities for production will be improved. The local woods used are pine and redwood, and in gilding, Rodger's California gold leaf is utilized. The details of manufactura are not of sufficient interest to warrant an elaborate mention, and the materials in the sale department are pleasanter to view than to read about, and it is the value of the establishment as the champion of a local industry that warrants this reference in our columns.—*Bulletin.*

A Persevering Miner.—John R. Hite, the proprietor of the mine at Hite's Cove which bears his name, is in town this week, and brings the gratifying news of the completition of the tunnel which he has been running, night and day, for about five and a half years. It is about 1,400 feet in length, and through a very hard species of rock. The tunnel is about seven feet in height by about five in width, and taps the vein at a depth of 900 feet. They struck the the vein last week and find it as rich in gold, or perhaps richer, than it was near the surface. They have not yet gone through its entire thickness, but the indications are favorable for an immense body of very rich ore. They will work upward now in order to meet the shaft which is being sunk from a drift above for ventilation. The mine can now be classed as one of the most valuable in the state, or in the world.—*Ex.*

Useful Information.

Indian vs. Chinese Tea.—Indian tea is said, on the authority of a correspondent of the *London Grocer*, to possess nearly double the strength of the Chinese article, and it is principally used by tea merchants and grocers for mixing with China tea to give strength and flavor to the latter. Most of the China tea sold in the London market, brings from 25 to 37½ cts. per lb. exclusive of 12½ cts. duty, while scarcely a chest of Indian Congon sells as low as 37½ cts. Indian teas in the London market generally retail about 50 per cent. higher than similar grades of China teas. Moreover while adulterations are not uncommon in China, they are never known in India. Green teas are almost exclusively the product of China, and are never known in India, with the exception of a limited quantity manufactured at some of the tea plantations on the Himalayas, mostly sold to the traders from Turkestan and Thibet, and only the surplus is sent to Europe. It pays the tea planter to make his tea leaf into black tea rather than green. Tea drinkers who prefer green tea must therefore be content with the product of Chinese ingenuity, and be satisfied to drink the compound of tea, turmeric, Prussian blue, China clay, etc., prepared for the British "barbarians."

Blood and Lime Varnish.—The Chinese are said to make a varnish by heating together fresh blood with quick lime, which is extensively used as a coating for wooden articles which they wish to make completely water-tight. Von Scherzer, who first introduced this substance to the notice of Europeans, says he has seen in Pekin wooden chests that had been varnished with it, which after a journey over Siberia to St. Petersburg and back, were still sound and perfectly water-tight. Even baskets of straw, used for the transportion of oil, are made fit for the purpose by means of this varnish. Pasteboard coated with it becomes, both in appearance and firmness, like wood. Articles requiring to be absolutely impervious are varnished twice, or at most three times, by the Chinese. The preparation has been tested in various ways, both in Europe and Australia, and although it gives to vessels covered with it a rough, ugly red appearance, its use is recommended as a sure means of making wood impervious to water.—*Cabinet Maker.*

Food from the Sea.—Richard D. Cutts, Esq., in his elaborate report to Congress showing the catch, consumption, and value of food from the sea, estimates its yearly worth at $120,000,000 in Europe and the United States, including Japan. Valuing the fish at three cents per pound, it gives an amount of four billion pounds as the yearly yield of the sea of food for man. If we estimate the weight of neat cattle at 700 pounds each, and a pound of fish to be equal to a pound of meat, we have here as much food, all the uncostly growth of the ocean, as is equal to five and three-fourths millions of cattle. The smallest consummere of fish per head are Japan and Russia; the largest Newfoundland, Prince Edward Island, and Nova Scotia. The last named places are surrounded by water, and the fish are abundant at their doore and always in a condition for a meal. Norway takes the lead, and France and the United States follow in production.

Vinegar From Rhubarb.—Good vinegar cannot be made of rhubarb (pie-plant) juice. Acetic acid, which is the sour principle of vinegar, is formed from alcohol, which is made from sugar, which in its turn may be made from starch. The juice extracted from the stocks of rhubarb is almost, if not entirely, destitute of sugar or starch, and accordingly contains little or nothing from which vinegar can be made. It contains, however, several vegetable acids, that are healthful and have agreeable flavors, and on this account some people add the requisite amount of alcohol, sugar or molasses to do it, and ferment the mixture in one of the ways we lately described for making vinegar from cider. It is rather an expensive way of making vinegar, and the product is not on the whole superior.

A Perpetual Paste—Dissolve a teaspoonful of alum in a quart of warm water. When cold, stir in as much flour as will give it the consistency of thick cream, being particular to beat up all the lumps; stir in as much powdered resin as will lay on a dime, and throw in half a dozen cloves to give a pleasant odor. Have on the fire a tea-cup of boiling water, pour the flour mixture into it, stirring well at the time. In a very few minutes it will be of the consistency of mush. Pour it into an earthen or China vessel; let it cool; lay a cover on, and put in a cool place. When needed for use, take out a portion and soften it with warm water. Paste thus made will last twelve months. It is better than gum, as it does not gloss the paper, and can be written on.—*Journal Applied Chemistry.*

Preserving Fungi.—It sometimes becomes desirable to preserve specimens of fungi for future or more convenient examination. For such purpose the following mixture has been recommended: Sulphuric acid; 2 pints, water, 8 pints; mix and add creosote, 1 pint. Bottle the fungi in this and cork tightly. It is said to preserve them perfectly, without change of color. Fungi may be preserved by drying by bedding them in silver sand, gills upwards, in tin boxes, and placing them in a slow oven, even for two or three hours.

Industrial Progress in Russia. — Next to our own country, there is no nation in the world that gives evidence of such rapid progress in industrial matters as Russia. Her mechanical and metallurgical interests are almost daily developing, and new means of utilizing her great resources are constantly coming into existence. A gigantic establishment has been recently founded by MM. Sturve, Brothers, near the city of Kolom, which it is stated, rivals in magnitude the finest workshops of England or Belgium. It has been in operation but five years, and is at present engaged in the manufacture of iron bridges and railroad freight cars, though recently locomotives and passenger coaches have also been produced. At times, during the year just past, the works employed 4,000 hands. To give an idea of the importance of the establishment, we may add that since its foundation it has completed 3,000 cars; and since it has begun the manufacture, 79 locomotives have left its shops.

Loss of Weight in Freezing Wood.—A century ago Dathand showed that when wood is submitted to a degree of cold sufficient to freeze the water contained in its texture, the wood, on being thawed, had diminished considerably in weight. This he explained it on the hypothesis that the wood, in the contraction produced by the cold, had expelled a portion of the water contained in its tissues.

Hofmeister proved the loss of weight, but explained it on the theory that, in freezing, the fluids of the plant had surrendered their dissolved gases and thus diminished its weight.

Studying the phenomena of freezing under these conditions, M. Ed. Prillieux thinks that since the ice forms around the cells, the fluids contained in these organisms must pass outside of them, and consequently be more favorably exposed to the influence of evaporation, and the diminution of the weight he thus produced.

Artificial Magnets.—Tempered steel is used for the most part in making artificial magnets, and the harder the temper of the steel the greater is the strength or "coercive force" of the magnet. The horse-shoe form is very common on account of its convenience in experiments. The steel bar to be magnetized is laid on a table, and the pole of a powerful magnet is rubbed a few times upon the bar in the direction of its length, and always in the same direction. To magnetize steel in the form of a horse-shoe, a magnet of the same shape and nearly the same size should be used. This should be placed vertically on the magnet to be formed, and moved from the ends toward the bend, or in the opposite way, and brought round again on an arch to the starting point. A piece of soft iron as the armature should be provided and placed at the poles of the new magnet to act as the conservator of its magnetism.

Zinc Labels for Trees.—Buy a foot of sheet zinc, cut it in stripe one inch by two, or whatever size is desired, and if the name of the tree or plant is written on with ink made of the following ingredients, it will be indelible:

"Take of verdigris and salammoniac each two drachms, lamphlack one drachm, water four ounces, to be well mixed in a mortar, adding the water gradually. It must be kept in a glass stepped vial. Write on the zinc with the ink, after shaking it well, with a quill pen; and after it is dry you may expose it to the weather or bury it in the ground for years, and it will be as legible as when first written."

Strength of Gunpowder.—Would one grain of gun or blasting powder, in the middle of a cubic yard of copper, crack this mass of metal from its center if it could be fired so as to get all its force?

Ans.—Gunpowder, in burning, changes form, becomes gas, and requires many times the space it occupied while in the solid state. If it were possible to inclose a small quantity of powder in a large mass of solid metal and so ignite it that there would be no escape of gas, its explosive energy would either split open the metal or make room for the generated gas by enlarging the powder chamber. The experiment, however is an impracticable one.—*Ex.*

If a tallow candle be placed in a gun, and shot at the door, it will go through without sustaining any injury; and if a musket-ball be fired into water, it will not only rebound, but be flattened as if fired against a solid substance. A musket-ball may be fired through a pane of glass, making the hole the size of the ball, without cracking the glass; if the glass be suspended by a thread, it will make no difference, and the thread will not even vibrate.

"Deer tongue," a little plant that grows abundantly in the pine forests throughout the lower Southern States, is now attracting considerable attention as an article for scenting tobacco and wrappers for cigars, the leaves having a strong vanilla odor. A Southern paper is confident that the day is not far distant when the "deer tongue" will become one of the most important productions of the South. This is probably an extravagant estimate of the value of "deer tongue."

How is It?—It is stated that the artesian well at St. Louis developed a temperature at the depth of 3,800 feet too cold to be determined by any instrument of science at the time in use for such purpose, and that the opponents of the theory of high central heat in the earth refer to this fact as an important argument in favor of their assumption.

Good Health.

The Way to Treat Consumption.

Dr. Goodwin W. Tims, of the North London Hospital, furnishes to the Dublin *Medical Press and Circular* the following results of his experience in managing this fatal disease:

We may sum up shortly our treatment of consumption: Light, simple, and nourishing diet, in quantity always in proportion to the appetite of the individual (the palate is an excellent guide, which we should he always afraid to offend), all wholesome fruits and vegetables, a moderate amount of thoroughly cooked meat, and dilutents, tea, milk, whey, etc., according to the patient's experience, avoiding all stimulants and forcing of the appetite. Regimen: excitement of the skin by constant cleanliness, friction, and woolen clothing; fresh air, sea air if possible; exercise of every kind, gymnastic exercises, singing, reading; the avoidance of every restriction by dress upon the chest-walls, and of indolence, and self-indulgence of every kind; the exclusion of gas from all apartments inhabited by the invalid; early hours, and as short a sojourn as possible in the same atmosphere; hence it is better to take a short sleep in the day than to remain more than six or seven hours in the bedroom, the windows of which should never be shut except upon particular occasions, or under peculiar circumstances.

Drug treatment. An obstinent cough with expectoration in the member of a consumptive family, unaccompanied by much general disturbance, is most successfully treated by twelve or fifteen drops of dilute hydrochloric acid in one ounce of water every two hours. Patients often declare that they taste the chlorine in the expectoration.

An obstinate dry cough accompanied by emaciation, debility and fever, is very successfully treated by half an ounce of cod-liver oil three times a day after meals, in a draught containing one fifteenth of a grain of bichloride of mercury. Either of these remedies is good in all stages of the disease, with or without oil.

In children cod-liver oil alone is very successful; as age advances, the remedial power of cod-liver oil is diminished.

Steel is only to be given for a few days at a time. All astringents, except for special objects, are injurious. The citrate or tartrate of soda or potash should be given occasionally, and these salines are quite as generally useful as steel.

Mild laxatives occasionally are very beneficial: pills of gray powder and rhubarb for the young and a mild aloetic pill for the middle-aged will tempt the practitioner who tries them to very frequent use. Trying to help towards the successful treatment of a few varieties of consumption, it would not become me to condemn any drugs recommended by other practitioners. So intractable is the disease, that every new remedy ought to have a fair trial. Familiar with the idea of patients being induced to swallow the urine of the boa constrictor, and the pancreatic fluid of a pig, if a patient were to tell me that he had found benefit from imbibing the saliva of a goat, I should not hesitate to recommend him to persevere in its use.

The Feet in Winter.

Through the feet comes every year to multitudes—death! Especially in winter ought pains to be taken to keep the feet warm, to be healthful; the warmth comes from within. Stockings keep the feet warm because they keep about the feet the warmth which comes from them; hence those materials are the best for the feet that are non-conductors; thus it is that woolen stockings are considered warmer than cotton or silk; there is less warmth in cotton than in woolen, because they convey the heat with very great rapidity from the feet. Yet some people's feet are more comfortable in winter with cotton or silk, than woolen, because persons with a vigorous circulation give out so much heat, that if kept about the feet, perspiration is induced, this becomes condensed by the cold from through the boot or shoe, thus keeping the feet cold and clammy and damp, and most disagreeably cold, but if such persons wear cotton or silk, the extra heat is conveyed away, leaving enough to keep the feet warm.

If the pores of the skin are closed in any part of the body, that part is either unnaturally hot or cold. If the circulation is vigorous, it overheats because it cannot escape through these escape pipes of the system. If the circulation is sluggish, if there is but little vitality, the blood of the veins stagnates and the blood of the arteries, which carries heat and life, cannot get there; hence the first step in keeping the feet warm is to keep the pores open. That can only be done in one way—keep the feet clean; clean away the concretions of perspiration, oil and dust, which are always accumulating, and which seal the tops of these pores—the chimneys of the system—hermetically.

The Function of Breathing.

Considered in all its relations, the function of breathing is a wonder of wonders. Because we are familiar with the process of inhaling and expelling air from the chest, it excites neither admiration, nor even thought. By watching the play of the respiratory apparatus, however, some perplexing phenomena are presented well worth studying.

The lungs are two membranous sacks, one on each side, of unequal dimensions in men, separated by a vertical partition, but united at the bottom of the neck in a single tube—the windpipe.

When one lung is diseased, life is maintained by the other. If both are severely inflamed, ulcerated, or in any way incapacitated for vital service, death inevitably ensues.

By taking a breath of air about six millions of minute cells, which make up the body of the lungs, are distended, and at that instant of inflation oxygen is separated from it, and taken into the system. Life therefore is solely and exclusively sustained by that element.

Every living thing, from animals to the whole vegetable kingdom, is just as dependent for life on atmospheric air as man. Trees breath through their leaves. If torn away the trunk would languish and die. Were all the leaves of a full-grown apple tree placed side by side, were it possible to have their edges exactly touch, so as to appear like a carpet, it is calculated they would cover more than an acre of ground. Some of the gigantic forest trees yield leaves enough to cover an area of nearly two acres.

Our own lungs afford an absorbent on which air infringes equal to almost one hundred square feet, it is assumed by some physiologists.

In transplanting young trees it is an unphilosophical process to trim the limbs so closely that only a few twigs are left. In that mutilated condition the effort to live is a hard struggle.

More die than survive the violence, because they are deprived of their breathing organs. One side of each leaf imbibes carbon from the air for making wood, while the other throws off oxygen for keeping the atmosphere supplied with a material that supports life, without which death would reign triumphantly.

Nearly all leaves of trees contain a large amount of astringent property called tannin. When quite dry and driven about by the wind, if boiled, they yield just what is necessary for tanning leather. Barks, now extremely expensive, might be given up almost entirely if this economy were pursued. Maple, willow, chestnut, and indeed almost all those of familiar growth here at the North might be utilized in that important art, to the saving of millions of dollars in this country annually.

After the tannin is dissolved in the leaf cells the strong decoction is ready for the vats. The pulp thus deprived of the matter which prevents leaves from decomposing for a very long while, becomes an excellent fertilizer. Farmers make a mistake in gathering leaves into piles or mixing them with other manure, because it is a loss of time and labor, it is so long before they decompose and become food for living plants.—*Ex.*

Absinthe a Poison.

A French commission, consisting of experts, has just made a report, reviewing all of the methods employed in the manufacture of absinthe, and the great loss of life entailed by its use in France. They recommend that this article be included under the list of poisons, and that its sale be interdicted, excepting on prescription of a physician. They think its sale should be visited with heavy penalties, and that every effort be made to break up the indulgence in an article possessing such poisonous properties. It is not the absinthe alone that prove so dangerous, but the inordinate consumption of alcohol that accompanies it. Some have been known to take 30 glasses of absinthe every day, the greater part of which is absolute alcohol, and thus the danger is largely increased.

It is thus practically shown that the pleasant flavor of the absinthe induces persons to consume twenty times as much alcohol as they would be likely to do if their drinking was confined to brandy or *eau de vie*. Absinthe was almost unknown, except as a medicinal agent, before the Algerian expedition, under the reign of Louis Philippe. Fever made sad havoc in the ranks of the army, and the doctors recommended the soldiers to mix absinthe, which is the bitter extract of wormwood, with their wine, as a preservative against miasmata, in lieu of quinine, which was too costly to be generally distributed. During the whole of the campaign the army drank this mixture, and also mixed absinths with their brandy. The habit was retained by the troops after their return to France, and the liquor now known as absinthe thus became a popular drink throughout France. As a means of sure and speedy suicide, absinthe is scarcely excelled by strychnine.

Care of the Hair.—To keep the hair healthy, keep the head clean. Brush the scalp well with a stiff brush, while dry. Then wash with Castile soap, and rub into the roots, bay rum, brandy or camphor water. This done twice a month will prove beneficial. Brush the scalp thoroughly twice a week. Dampen hair with soft water at the toilet, and do not use oil.

MINING AND SCIENTIFIC PRESS.

W. B. EWER.....SENIOR EDITOR.

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San Francisco:

Saturday Morning, Nov. 30, 1872.

Legal Tender Rates.—S. F., Thnre., Nov. 28—Buying, 88½; Selling, 89.

Table of Contents.

GENERAL EDITORIALS.—California Trout, 340. The Diamond Fields a Fraud; Camp Floyd Mining District, 334. A Useful California Invention; Wooden Pavements, 348. ILLUSTRATIONS.—Map of Camp Floyd Mining District, 337. Woodhnry's Brush Machine, 345.

MINING SUMMARY from various countiee in California, Nevada, Arizona, Colorsdo, Idaho, Moutana, and Utah; Mining Shareholders' Directory, 340-1. Market Reports, 348.

SCIENTIFIC PROGRESS.—The November Atmospheric Wave—An Interesting Discovery; Crytallized Silica from Aqueous Solutions; Effects of Slow Action; Interesting Scientific Experiments, 339.

MECHANICAL PROGRESS.—Metal Paper Hangings; Machlne for Testing Building Material; Woven Fabrics from Rabbit'e Hair; The Diamood as a Cutting Instrument; An Experiment with Paper Car Wheels; Machinery for Corn-Cutting, 339.

USEFUL INFORMATION.—Indian *vs.* Cninese Tea; Blood and Lime Varnish; Food from the Sea; Vinegar from Rhubarb; A Perpetual Paste; Preserving Fungi; Industrial Progress in Russia; Loss of Weight in Freezing Wood; Artificial Magnets; Zioc Labels for Trees; Strength of Gunpowder; How ie It, 348.

GOOD HEALTH.—The Way to Treat Consumption; The Feet in Winter; The Function of Breathing; Absinthe a Polson; Care of the Hair, 343.

MISCELLANEOUS.—Notes on the Management of Mining Companies; Immeuse Ore Deposite, 338. Miuing Operations in Lower California; Interestiog Mineral Land Decislon; Geological Survey of tbe Yellowstone; Mining Mattere in Nevada County, Cal.; Photographera Materials on this Coast, 342. The Carihou Mine and Reduction Works; The San Juan Country; The Table Mountain Blue Gravel Co; Mauna Loa; The Only Nickel Mine; New Quartz Battery, 346. Patents and Inventione, 348.

STRAWBERRIEe AND THANKSGIVING.—We observe this morning—the day before Thanksgiving—beautiful strawberries at the fruit-stands. On inquiry, we find they are growu in the open air, forwarded fifty miles by railroad, and sold at twenty cents a pound.

IN LUCK.—The engineer of the Yellow Jacket mine, John F. Coleman, who drew $20,000 in the Omaha lottery, has gone to get his money.

The Diamond Fields a Fraud.

For the past few months the principal excitement on this coast has been the "diamond question," for until within a few daye it has been a qnestion, and our community has been on the tiptoe of expectation to learn the exact location of the reputed fields. Developments have, however, been made publc this week, which prove that the whole matter is a swindle and tbat the "fields" were systematically salted. Clarence King, the eminent geologist, has visited the Harpending and Lent location, and the resnlt of his visit astonishes the people who had confidence in the managers of the undertaking, and fulfils the predictions of those who had not taken, or were financially unable to take, any share in it.

Without doubting that there are on this coast diamond deposita yet to be found, we have all along taken the recent highly colored statements of interested individuals *cum grano salis*, giving the current news concerning the matter for just what it was worth; but at the same time advising our readera to be cautious in going to the distant localities indefinitely mentioned, without more assurance than the mere word of the promoters of the enterprise.

We confess, however, that we were somewhat taken by surprise to find out that the matter had been euch a deep laid scheme to defraud tbe public and that it waa a wholesale swindle. And this, too, after this particular location of Harpending and Lent had been reported on favorably by Henry Jauin, a mining engineer, who possessed the confidence of the commnnity. It is not probable, that, with all the well concocted plan, the stock could have been placed upon the market at all in the face of an unfavorable report by that gentleman. A number of onr most prominent capitalists have invested in the enterprise and lent it the sanction of their names, and by this means the stock of the original company was eagerly sought after.

Now the dream of glittering gems is dispelled and visions of fabulous fortunes have vanished. Messrs. D. D. Colton, Henry Janin and Clarence King have made reports to the company, the latter of which we give in full, and to which comment is unnecessary. It explains the whole matter.

General Colton's Report

Is one of a practical man, and explains simply how the whole thing must have been prepared. He gives an account of his trip to the diamond fields (?), bow they made 96 tests, of the most thorough and careful nature, without finding a diamond or ruby outside of a certain locality. Where the ground showed no evidence of having been tampered with they found no precious stones; where it did, they fonnd a number. He describes the ground as being in Colorado Territory, in a due south direction from Black Butte Station, and not to exceed 50 milea therefrom. In closing, he says:

In behalf of myself and the gentlemen who accompanied me, whose names are already given, the only remuneration we aek at your hands for undergoing the hardships of this journey, is that you will spare neither time, money nor skill in finding out the guilty parties to this unparalleled fraud, and bring them to speedy justice. The good name of the State and the credit of our mining interests demand it.

I have taken the liberty in this report of announcing the location of the so-called "diamoud fields of Arizona," from the fact that I consider it high time the alluring fascination of secrecy and mystery be dropped from this diamond excitement, and the world be brought to understand tbat if there be any such immense deposits of precions stones as this excitement has led them to believe, the deposit is yet to be found, as it is my honest belief that to this time no new or rich discovery has been made in the section of country this mysterious whisper has pointed to.

In the few days I have beeu counected with the management of your company, it is impossible for me to give you tbe least imformation as to who are the guilty parties in putting this fraud upon the world; but the unimpeachable integrity of every member of your Board is a snfficient guarantee that this iuvestigation will be so thoroughly conducted by you as to do justice to all parties concerned. Trusting my course in this matter may meet the approval of your body.

Mr. Janin's Report

Acknowledges in substance that he was fooled—a most humiliating confession of a man in his position, and one in whom the public had heretofore so much confidence. For an *expert* to go for a special object and then suffer himself to be led to certain localities which had been cleverly salted and for him to report favorably on a question which not only involved his reputation as an engineer, but also millions of money, is to say the least unwarrantable. He acknowledges that the ground was absolntely barren except in spots where nature had no hand in placing the gems. He explains his former report and seems to have been so convinced from the assertions of prominent men before he visited the field, that he looked upon bis investigation as undertaken not to determine the *fact* of the discovery, but to ascertain approximately the extent and value of the same.

It will be seen from tbe above that this settles the question of Messrs. Harpending & Lents' location; but what of tbe innumerable others? What of Stanton's $250,000 ruby? What of Ex-Governor Gilpin's report on southwestern Colorado? What about the diamonds in Butte county, tbe San Juan country, the New Mexico, Arizona, and Utah fields? These questions can only be answered by the lapse of time, but we are convinced tbat these localities will, under the influence of the excitement of the last few months, be thoroughly prospected. In conclnsion we give the

Resolutions of the Board of Directors

Of the Harpending & Lent Company, after accepting the reports of Messrs. Coltou, King and Janin:

The undersigned members of the Bosrd of Trustees of the San Francisco and New York Mining and Commercial Company, having become convinced, by the foregoing reports, of the worthlessness of the pretended diamond fields referred to, have deemed it due to the pnblic to publish the above reports and denounce the fraud perpetrated upon tbis Company and the stockholders by the pretended discoveries.

No further stock of this Company ehall be issued, circulated or transferred, and at the earliest practicable moment the certificates sball be cancelled and the Corporation dissolved.

WM. M. LENT.
THOS. H. SELBY.
M. S. LATHAM.
LOUIS SLOSS.
MAURICE DORE.
W. C. RALSTON, Treas. WM. F. BABCOCK.
WM. WILLIS, Sec. A. GANSL.

San Francisco, Nov. 25th, 1872.

Report of Clarence King, United States Geologist.

SAN FRANCISCO, November 11th, 1872.

TO THE BOARD OF DIRECTORS OF THE SAN FRANCISCO AND NEW YORK MINING AND COMMERCIAL COMPANY: I have hastened to San Francisco to lay before you the startling fact thst the new diamond fields upon which are based such large investment and such brilliant hope are utterly valueless, and yourselves and your Engineer, Mr. Henry Janin, the victims of an unparalleled fraud. Having convinced you verbally that my investigations have been made upon no other than your own ground, I beg, herewith, to give a brief statement of my mode of study, and its unanswerable results. Fearing that so marvellous a deposit as the diamond fields must not exist within the official limits of the geological exploration of the 40th Parallel, unknowo, and unstudied. I availed myself of the intimate knowledge possessed by the gentlemen of my corps not only of Colorsdo and Wyoming, but the trail of every party traveling there, and was enabled to find the spot without difficulty, reaching there on November 2d.

After examining the camp ground, water notices and general features of the Diamond Mesa, I next traced the boundaries of your claims and then began in earnest to study the distribution and mode of occurrence of the precious stones.

Our first day was devoted to the sandstone table rock, at the head of Roby Gulch, where about all the stones collected by your parties have been gathered, and had our critical work ended with the close of this one day, we should have left the ground confidsot believers in the genuineness and value of the fields. My suepicious were however, aroused early in the second day's work, and I at once determined to make

An Exhaustive Series of "Prospects,"

Of which the following are the results:

First—A nearly uniform numerical rstio exists between the rnbies and diamonds.

Second—The gems, in nine cases ont of ten, lie directly upon the hsrd surface of rock or an indurated crust of soil. In the exceptional case, where I found them in crevices, there was always ample evidence that the sand or soil had been disturbed and broken up within a year.

Third—With the dismonds snd rohies occur quartz pebhles of various sizes, and concretions of iron oxyd containing crystalline particles of quartz, which are found freely mingled with the soil from surface and bed-rock; hence if the gems were a natural deposit, being of a specific gravity intermediate between the quartz and iron concretions, they must have also settled through the earth to hed-rock. I therefore selected ground on and immediately about Table Rock, where the top was more or less strewn with the so-called rubies, carefully shovelled off the surface—inch of ground and gravel—and examined hy means of sieves and pan-washing, all the materisl down to hed-rock. Ahout thirty of these tests were made encircling Table Rock, and in no instance was a ruby or diamond found.

Fourth—Ruby Guich, leading directly from Table Rock to Arnold Creek, and hy necessity receiving the wash of the gem-hesring snrface of the sandstone, was found to be extremely rich in rubles at the hesd; but this richness, instead of continuing down the bed, as, if genuine, it inevitably must be, proved to exist only in ground directly at the foot of Table Rock, where

The Soil was Clearly Disturbed, Mixed and Smoothed Over.

I sank a series of four pits to bed-rock down the gulch at intervals, excavating probably a couple of tons of materlal, aud although, as in every other iostance, quartz, and even concretions were disturbed throughout all the gulch soil, not a ruby or diamond was found.

Fifth—In the top of Table Rock and in the midst of thickly-sown rubies are certsin crevices not opened by your parties. They are filled with soil and pebhles, and more or less overgrown with grsss, ssge-hrush and small cactus plsnts. We carefully removed the top inch, dug out the whole crack, finding no trace of diamouds or even rubies. In the crevices which bore unmistskable evidence of having been tampered with, we never failed to find rubies and often small diamonds.

Evidence of "Salted" Hills.

Sixth—Upon rated dome-like portions of Table Rock, rubies and diamonds lay upon the summits snd inclined sides in positions where the etorms of one or two Winters *must* inevitshly have dislodged them, and where, moreover, they were unaccompanied by quartz or concretions.

Seventh—An exhaustive exsmination of the rock-material itself with a field microscope, revealed no grain, however minute, of either gem.

Eighth—In the ravines and upon the mesa nearly, ars numerous ant-hills built of small pebhles, mixed by the nots, and which we found to hear rubies on their surface. A still closer exsmination showed artificial holes, broksn horizontally with some stick or emall implement, through the nasural crust of the mound; holes easily distinguished from the natural svenues made hy the insects themselves. When traced to their end, each artificial hole held one or two rubies. Moreover, about these "salted" hills were the etorm-worn foot-prints of a man.

Many outside ant-hille were stndied, but there were neither artificial holes piercing them, rubies within nor without, nor human tracks.

Ninth—I discovered in the Table three smsll emeralds. Summing up the minerals, this rock has produced four distinct types of diamonds, Oriental rubies, garnets, spinels, sapphiree, emeralds snd smethysts—an associatiou of minerals I believe of impossible occurrence in Nature.

Tenth—When altogether satisfied that the gems had been "salted" on or about the Table, our party set out upon a series of outside prospects, which were carried on over all the mesa and its fisnking cañons until the absolute valuelessnese of the property was finally ascertsined.

The Results of these Ten Links of Proof

Are: Thst the gems exist in positions where Nature alone could never have placed them; that they do not exist where, had the occurrence been genuine, the inevitable laws of Nature must have carried them.

Finally, that some designing hand has "salted" them with deliberate, fraudulent intent.

Furthermore, this is the work of no common swindler, hut of one who has known enough to select a spot where every geological psrallelism added a fresh probability of houesty.

The selection of the geological locslity is so astonishingly considered, the "salting" itself so cunoing snd artful, the filling of all the conditions so fatally well done, I csn feel no surprise that even so truetworthy and cautious an engineer ss Mr. Janin shonld have brought home the belief he did, especially when, as his report states, he wae not allowed to prospect exhaustively; nor do I wonder that your second party of ten men brought back a confirmation of Mr. Janin's opinion, since they, too, were hurried from the ground without actually testing it.

I should add that on the evening of Wednesday, November 5th, when leaving the ground for the last time, I met Mr. J. F. Berry, of Salt Lake, who had arrived with a prospecting party. I honestly expressed my conviction to him, detailed minutely my mode of investigation, and ended hy urging him to remain and satisfy himself by personal examination, since he seemed to accept my result without question.

A sense of my duty as a public officer has impelled me to come directly and frankly to yon, gentlemen.

In answer to your request that I accompany General Colton back to the ground, while he and his party investigate for themselves, I place myself, my camp, men and field outfit at his disposal for two weeks, believing that in so doing I shall act as my Chief, Major-General A. A. Humphreys would order, were it possible at this sudden emergency to communicate with him. I am with respect, gentlemen, your obedient servant.

(Signed,) CLARENCE KING, U. S. Geologist.

Camp Floyd Mining District.

We present to onr readers on the first page a map of Camp Floyd Mining District, Utah Territory, Surveyed and drawn expressly for the PRESS by B. A. M. Froiseth, of the Surveyor General's Office, Salt Lake City, author of "Froiseth's new Mining and Sectional Maps of Utah." The map shows the United States snrveys by township and sectional lines adjoiniug the district, the town site of Lewiston and the numerous mines on either side of it, the roads to Ophir over the divide, to Salt Lake City by Rush Valley and to Fairfield or old Camp Floyd; also the aettlements of Cedar Fort and Fairfield and Cedar Valley and the quartz mill of the Camp Floyd Silver Mining Company. This will be a valuable map for all parties who are interested in mining in that region. We have also been furnished by Col. Froiseth with a description of the district and the principal mines which is as follows:

Camp Floyd is situated in Tooele and Utah counties and was organized about two years ago. It is distant from Salt Lake City 55 miles and is accessible from it by two routes of travel; one a daily line of fine stages, run by Wines & Kimball *via* Ophir, Stockton and Rush Valley, and the other by rail to Lehi, thence by stage by way of Fairfield. The district created little or no excitement for tbe first year, until the development of the Sparrow Hawk mine, which at once proved the richnesa of the district, and since that time it has been steadily improving as other mines have been furtber developed, and it is now considered one of the best districts in the country for milling ores. Its value has also been greatly enbanced by the erection of tbe

Camp Floyd Silver Co's Mill,

Built under the supervision of the energetic manager, Capt. E. H. Shaw. This mill is one of the most complete in the country, contains twenty stamps and is now capable of reducing thirty tons of ore daily, but with its capacity for thirty stamps, it will probably be soon reducing a much larger quantity. A tramway for the transportation of the ore from the minee to the mill has been built and is now in full running order.

The Mines.

The English Co.'s Mines the Sparrow Hawk, Last Chance and Marion have been actively worked all summer. From forty to fifty men are now constantly engaged in taking out the ore to supply the mill which is running night and day. Tbe Mormon Chief and its extension the Grecian Bend, and tbe London, consists of 3,000 linear feet along the lode by 400 in width, beginning at the upper end of the Camp Floyd mines, and running westerly along the line of croppings. The developmentss in tunnels, cuts, shafts, drifts and incliues will measure about 500 feet, ehowing a large body of free milling ore. The Camp Douglas is developing finely, and large bodies of antimonial silver have been struck about 25 feet down the shaft, running in an easterly and westerly direction. The shaft has been continned to a depth of 47 feet, where the foot wall was struck, passing through a fine body of vein matter the entire depth. From this point a drift has been commenced which is now several feet long. The Gen. Morrow, owned by the same company, is down 53 feet, and is very promising. The Antelope hss now a shaft 7x7 and 12 feet deep, and an open cut some 200 feet from the shaft, 6 feet wide and 10 feet in. The ore from this mine is of good quality, as a recent assay of quartz weut $362.70 to the ton, aud equally good results are anticipated as the work of development goes on.

The Silver Cloud has a shaft 55 feet deep, cutting a vein of ore at a deptb of 55 feet. A level has been driven 180 feet on the courae of the vein from the bottom of the shaft showing a vein of 12 feet of rich milling ore, assaying from $50 to $2,000 per ton. A tunnel has also been run 275 feet to cut the vein 200 feet below the face of the ehaft. A mill site has been located adjoining the mine upon which is a fine spring of water. The Star of the West, owned and worked by a New York Co., Joseph Rau, President, has a force of 12 men at work, and is taking out a large quantity of ore of very good quality. Tbis mine is very promising and will soon pay a handsome dividend to the owuers. Tbe Silver Circle and Wandering Boy have a large number of men employed and are developing well. Tbe Peerless, Bismarck, Elk Horn, Red Eagle and Silver Star are good mines and in a flourishing condition. Several minee have been sold during the past season to New York aud San Francisco capitalists, who have incorporated stock companies, and who are now busily engaged in developing their property.

Woodbury's Brush Machine.

The engravings shown on this page represent a machine for hunching, wiring and inserting bristles in brush backs, which is one of the most notable of modern mechanical improvements. It accomplishes a number of difficult movements with great facility and performs its work with ease. To describe the machine perfectly would require more diagrams than we would have space for, so only a more general description will be given. It divides the material to be inserted, into hunches of equal size, doubles the bunch, draws a proper length of wire from a spool, straightens it, puts it through between the two divisions of the doubled material, thrusts the wire into the form of a screw thread, screws the bunch into the hole in the back, and then causes the cut end of the wire to engage the wood like a pawl, so that the bunch cannot be unscrewed, finishing its work so strongly that the hunch can only be pulled out with strong pincers, and it does this by only stripping the wire over the end of the hunch.

The large figure is a perspective view of the machine with all the parts in adjustment for work, the brush block being in position and two of the holes having had bristles inserted in them. A very clear description of the machine has appeared in the *American Artisan*, and we can do no better than to use its words:

The material to be inserted is first drawn in between the teeth of a comb. *A*, Fig. 1. This comb is taken out of the machine for this purpose, and there being duplicate combs, empty ones can be filled while the machine is at work, so that it may run without intermission. The combs are filled by a very ingenious appliance, which enables one operator to serve several machines, and the material is drawn in so that it is compressed and held at the middle of the fibre or at any other desired point. The comb, when placed in the machine, slides in guideways, being actuated by a traverse motion, which, as fast as one space is emptied of its material, brings another up to the mouth of a twisted channel, *B*, Fig. 2, into which the bristles or other fibrous material is forced by a feed movement very much resembling the four-motion feed on a sewing machine, the teeth of which engage the entire rank of fibers.

The office of the twisted channel is simply to bring the rank of fibers from the vertical into the horizontal position. In this position it reaches the divider, *C*, where a portion of the rank of fibers is compressed by a spring device, so as to insure the proper quantity in the hunch which the divider separates. This divider which is attached to and forms a part of the tube which carries the bunch, has imparted to it, by suitable mechanism, a vertically reciprocating movement. As it rises, the peculiarly shaped point, *D*, separates from the rank of bristles enough to form a hunch, and as the separated portion cannot rise, the divider, in its further upward movement, brings the hunch down along the inclined way or channel, *E*, to the bottom, *F*, of the way; here it lies directly under the doubling and twisting plunger, *G*, shown in detail in Figs. 3 and 4.

The plunger, *G*, now descends, and, engaging the bunch in a hollow in its lower end, forces it down and doubles it in the manner shown in Fig. 3. Meanwhile the wire, *I*, Fig. 4, has been drawn off and straightened, preparatory to being thrust through a slot in the plunger at *H*, Fig. 3, and between the ends of the looped bristles, which being accomplished, it is cut off in a short length, as shown in Fig. 4.

The plunger and tube now descend together to the block, carrying with them both bunch and wire. On the interior of the tube is cut a female screw-thread. The plunger is caused to turn on its vertical axis during the descent, which winds the wire about the bunch of bristles in the form of a screw-thread, as shown in Fig. 4. Continuing the same rotating movement without descending further, it then screws the wired bunch into the block, *J*, Fig. 1, the lower cut end of the wire plowing a thread in the hole; then when the bunch has entered to a proper depth, a slight turn of the plunger in the reverse direction takes the twist out of the bristles, and the upper cut end of the wire engages the wood. The plunger is then withdrawn, and the same operation is gone through with a succeeding bunch, and so on, till all the holes in the block are filled.

The block lies on its back on a table made adjustable to any angle, so that the bunches may be inserted obliquely as required, the pitch of the table being regulated by the notched arc, *M*, and other appliances readily manipulated by the operator.

While one bunch is being inserted, the point of the guide, *K*, is inserted into the next successive hole by the operator, and as soon as the bunch is inserted, this guide automatically draws the hole with which it is engaged directly under the plunger to receive its bunch, accurately centering it, and obviating the possibility of mistake. The guide then releases itself from the hole, which immediately receives its bunch, and so on till the block is filled. The machine works tampico and all other vegetable fibre used for filling brushes as well as bristles, and the knots or bunches are inserted in hard rubber with the same facility as in wood.

Seventy-five to eighty bunches per minute is an easily maintained rate, and this is done without the slightest strain or injury to a block of any material, even of the most delicate, as nothing but the wired bunch enters the hole. It does this, moreover, in a more perfect and uniform and durable manner than can possibly be achieved by hand labor, or any combination of devices hitherto produced.

For further information address the Woodbury Brush Machine Co., No. 30 Cortlandt St., New York.

Fig 1

WOODBURY'S MACHINE FOR INSERTING BRISTLES, TAMPICO, ETC., INTO BRUSH-BACKS.

Fig 2

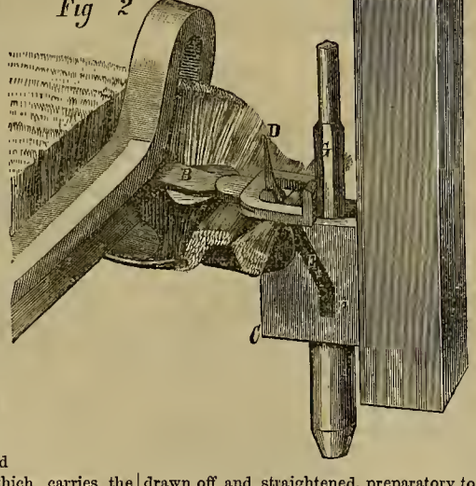


Fig 4

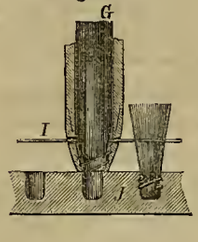
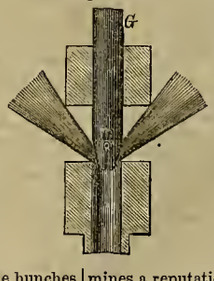


Fig 3



Successful Mining.—As an example of successful work on mining property we make some extracts from the quarterly report of H. Prideaux, of the Pacific Company's works at Austin, from a London paper. There were 819 feet of levels driven under contract; 183 feet of cross cuts; 198 feet of risers; 200½ feet of winzes sunk and 379 fathoms stoped. Raised from stopes 508 tons of ore; milled 498 tons at the Manhattan mill; gross assay value $95,564.53; average value $191.80 per ton. *Net* amount received from the ore $65,237.21. Net, we assume to be after paying charges for mill work. Ten tons were shipped to Liverpool of an estimated value of $6,500 to $7,000. The Manhattan Company calculates to return 90 per cent. of the contents when they have the Stetefeldt furnace in operation. The company having no reduction works of their own are unable to work any but the richest ore, which Mr. Prideaux considers a great drawback to their prosperity. This gentleman refers with pride to the results accomplished under his administration. He has drawn no money from London—an astonishing fact. He has remitted bullion and ore as profits and paid off some old debts.

Let our English friends send out a few more such gentlemen as this one appears to be, for he is unknown to us, and our mines will bear a much better reputation in Europe as paying properties than they have enjoyed hitherto. We do not think that the failures which have happened on this coast should always be attributed to the *mines* themselves, the only wonder has been to us that so many have paid even expenses under the extravagant systems of management so long in use, but we hope this will be remedied in the future. Intelligent, honest and economical management will do more to give our mines a reputation abroad than anything else that could be done to further that object.

Gloves.—Two thousand dollars worth of buckskin gloves per month are made at one establishment in the little town of Healdsburg, and about $1,000 is paid to the women and girls employed.

Miscellaneous.

The Caribou Mine and Reduction Works.

Four miles from Caribon, and 1,200 feet lower at the junction of the roads diverging to the four points of the compass, this embryo city is rounding into form. A beautiful sheet of water, the Middle Boulder, flows by on ths eonth, and pine-clad mountains rise grandly around it; a few miles below ie Bouldsr cañon, where nature has hnng one of her most eublime pictures. A great quartz mill and a little saw mill are humming to the tune of busy and profitable lives. The hotel, the post-office, and the two stores, together with two or three boarding houses, a blacksmith's shop, and fifteen or twenty dwellings and other buildings, besides the mills, is the aggregate of the town. The

Caribou Silver Reduction Works

Are the making of this rising little bnrg. The external dimensions of this great mill are 100 by 165 feet. There are five terraces or floors, devoted to as many different degrees iu the treatment of ores. The first, or npper floor, upon which rests a Blake crusher, is the ore room, where the wagons deposit the silver rock. It is then passed through the crusher and into the dry kiln. From the kiln it goes to the 15-stamp battery, and is there ground to powder beneath ponderous iron pestles, weighing 750 lbs. each, dropping 8½ in.. and 100 times per minute. After leaving the battery it passes through a No. 40 wire sieve, or bolt cloth, and hy conveyers to the hoppers resting over the Brnckner furnaces awaiting to receive the glittering dust. These great cylindrical furnaces have a capacity of 2 tons each every eight hours, or 1 ton for each of the 24 hours. From the furnace it falls red-hot into an iron car resting on iron rails heueath, and at each round a charge from a single furnace, nntil the four are empty. It is then wheeled a few feet, and dumped and spread on the cooling-floor, where it is wet down, or sprinkled with water, as we do dusty streets, and left to become cool. In the amalgamation paus the dusty treasnre next finds a lodgment. These pans are 10 in nnmber, each with a capacity 1,000 lbs to the charge. In the pans quicksilver is introduced, which collects to itself the genninesilver, after which it ie drawn off and strained, thus separating and saving hoth. The remaining contents of the pans are then let into five settlers, that catch any particles of silver or quicksilver that may have escaped the pans; and, to guard agaiust accidents, in the basement are two agitators, each of which receives separately the entire contents of the five settlers through which the hase material passes on its way to the creek. Thns it will he seen no loss can he snstained. The snperintendent, Prof. J. M. Dawley, offers $100 per ton for every ton of the material after it leaves the agitators that will assay $7. Alter the amalgam is taken from the pans and atrained it is snbmitted to a retort, when the remainder of the quick is snhlimed or vaporized, and the silver then becomes crnde bullion. It is next submitted to plumbago crucibles and placed in the meltiug furnace, where it becomes molten silver, after which it is ponred into cast-iron moulds, brick shape; out of them comes those famous silver bricks weighing from 1,800 to 2,000 ozs. each. These bricks are then taken to the assay office, and there assayed and marked, which renders them ready for shipment: 850 fine is their nsnal average, but some lots rnn as high as 950. These works are styled the old Freiberg process of calcining and amalgamating. The mill is bnilt on the Nevada stylc, and in all its details for treating these ores it is as near perfect as snch works can well he made. All this extensive and ponderous machiuery is driven by an engine of 150 horse power. From 8 to 12 per cent. of ealt is used, or about 3500 lhs. every 24 hours. The labor of 20 meu is requnred in aud about the mill, to keepit in operation day aud night. On the mill and mine $3,000 per month are expended, and 130 msn, including contractors, find employment. J. M. Dawley, of Nevada, one of the most skilful assayers, metallurgists and millmen on the Pacific slope, has charge of the assay-office and the entire mill, and is likewise driving the tnnuel at the miue. The coming year it is designed to double the capacity of the mill, thereby giving employmeut to a greatly increased number of meu, and add another fraction to the hullion product of the world.

Ths thriving town of Caribou, of 100 or more houses, is situated 9,500 feet above the level of the sea. Its first settlement was in May, 1870, when the celebrated silver mines hereabonts were first discovered. The place is accessible by good roads that span the couutry betweeu here and the older towns and the mining districts extending to the southern border of Colorado. Down the Middle Boulder, through cañons and gorges, whose mnral sidee rise like frowuing battlements, an important thorough-fare has been established to Boulder City, a distance of 20 miles, over which four-horse hacks and a mail perform tri-weekly service.

The Caribou Mine.

The grandest enterprise of this gold and silver region is the great "Caribou Mine," located about 800 yards west of the town, at au altitude of about 10,000 feet above tide water. It is universally conceded by experienced miners to be the richest and best paying eilver mine, in proportion to its development, of which we have any record. On the surface it extends 1,400 linear feet, for which a Government title has been obtained. Thers are eleven shafts, aggregating over 1,000 fest, ths deepest of which is 290 fset from the surface. Ths mins coutains ten levels, aggregating not far from 1,300 fset, width of crevics from 7 to 9 feet, with smooth and well-defined walls. This extraordinary silver ledge is embedded in a mountain of syenits, but the vein is so perfect that mining oprations ars carried ou at a rapid rats; and as the ores contain a large percsntage of sulphnrets and galena, carrying tons of silver glance and brittle silver, with very little zinc-blende, and no antimony or arsenic of any consequence, they are rendered exceedingly easy of reduction, while their richness is almost fabulous. Parties offer to wager that a ton of ore can be obtained from this mine that will yield $10,000—coin value. Two selected specimens, recently assayed by Professor Dawley, gave as follows: One at the rate of $26,301.60, and the other $29,797.40 per ton of ore. Along some of the principal levels, and at the bottom of the main shaft, the ore is so loaded with native silver that large bodies of it will yield in hullion from $1,000 to $10,000 per ton.

A better-timbered and a more systematically conducted mine is not to he found; it is as complete in all ite details as a great mine can well be. Over the main shaft stands a whim-house, 32 by 130 ft., a 15-horse power engine, a blacksmiths' shop and other useful apartments, all nnder this one roof. East of the main shaft another whim-house, 32 by 60 ft., has been huilt, where the ore is hoisted by horse-power from a depth of 170 ft. below the surface. West, again, two more honses are being erected, each 32 by 65 ft., for hoisting ore from shafts No. 5, 6 and 7. Near the base of the Carihou hill, on the east, a tunnel is being driven for the pnrpose of thoroughly draining the Carihon Mine, and to facilitate the handling of ore from the main shaft to the mouth of the tnnnel. The distance on the surface ie 1,058 ft., the length of the tunnel to the main shaft will he 840 ft., and its terminns will be 420 ft. heneath the snrface; 192 ft. are already completed, and nine men are crowding the work night and day. It will cut 15 or 20 rich lodee, and drain several valuable mines besides the Carihon. The coming winter will witness its completion, and render more valuable the tributary mines that surround. A total of 84 men are now at work on the tunnel and the great mine it is to penetrate, and the company propose to double that nnmher when the tunnel is completed.

The roads and all the varions interests pertaiuing to this mine are in the best possible conditiou, and the employeee eeem to take as deep an interest in the enterprise as the owners themselves. The vein broadens and increases in richuess as the work of development goes on; and, taking the present indicatione as a criterion, the mine within the next five years will prove equal, if not superior, to any eilver mine in the world. The ore at present yields at the mill an average af $200 per ton, aud the capacity of the mill is 20 tone per day, but it is the company'a intention to enlarge their works so as to enable them to take out and reduce ore that will produce $10,000 worth of hullion every day.—*Rocky Mountain News.*

The Sau Juan Country.

The Denver (Col.) *Tribune* has the following concerning this portion of that Territory, which, by the way, in addition to its mineral wealth, is said to contain extensive diamond fields: In the sonthwestern portion of Colorado, at present nnder the nominal control of the Utes, there lies a vast district, diversified with monntain and plain, magnificently watered and timbered, and generally considered as ahounding in an unnsual degree of mineral wealth. Without any exact bonndaries this great stretch of country ia known as the San Juan District.

Varions attempte have heen made, in earlier years, to effect a permanent lodgment of whites in the District, but nntil the past season, all snch attempts have proven disastrous, thereby throwing a sort of discredit over the country, in the minds of many, which was altogether nnjust.

But without regard to the experiences of the past, which have heen fully detailed by *Tribune* correspondents, it is gratifying to know that the present condition of the District ie both prosperous and promising, and that a future development is sanguinely anticipated, equal to that of any portion of Colorado.

The arrival in Denver, of Col. Newgent and son, Capt. B. F. Newgent, with a large assortment of the very richest kind of specimens establishes the wealth of the District heyond peradventure.

The nearest town to the San Juan mine is Rio del Norte, formerly known as La Loma, which is described to be the Denver of South-western Colorado. It is in a prosperous condition, aud growing wonderfnlly.

An excellent toll-road is now in conrse of construction from Del Norte to the mines, a distance of ahont 100 miles. This will he completed by spring. At the mines there have been several hundred miners at work, and all were encouraged, contented and confident, Next season, the entire District will be crowded with a busy population, and we may look for the most wonderful development from this hitherto comparatively nnknown portion of our Territory.

We aunex the results of a number of assays made from the more prominent mines in San Juan, which demonstrates more forcibly than words can do both ths extent and valus of the discoveries:

LAKE DISTRICT.

			Ozs. per ton.
Eureka,	Silver		175
Silver Star	"		75@ 150
Mammoth	"		12 @ 136
Major	"		131
Scotland	"		100@2100
Mack	"		150@1300

ANIMAS DISTRICT.

Eclipse	Silver		$50@ 100
Swansea	"		92@ 100
Shenadoah	"		221@1300
"	Gold		175
Little Grant	"		125@4000
Silver Star,	Silver		125@ 200
Congress	"		13@ 112
Senator	"		13@ 112
Western Star	"		125@ 2 0
"76"	"		55@ 171
Green Mt.,	"		200@13 0
Samson	Gold		100@1500
Terrible,	Silver		70@117
Gadson	"		107
Wemenucha	"		50@ 125
Tom Thumb,	"		90
	Gold		13
Tucker,	Silver		130
Niagara	"		160

The Table Mountain Blue Gravel Co.

The Sonora *Independent* of a recent date has the following: Having heard it rnmored that this Company were so fortunate as to strike the famous New York channel, ahont a mile or more away from where it was last worked hy the New York Co., when their tnnnel was closed hy a ten-year litigation, we paid the mine a visit aud were well rewarded for our expenditnre of time. As is well known in this connty, the New York Co. opened a rich mine in Tahle Mountain from the *west* side, while the Humhug Co. opened in the same mountain from the *east* side. Both companies thought they were working in the same ancient river bed, though commencing a mile and a half or two miles apart, and each claimed grouud beyond the bounds set hy the other. A lawsuit resnlted which lasted nearly eleven years, and which was finally compromised by Bernhard Marks and Gen. G. A Darrow, on the part of the New York Co., aod Messrs. Mitchell and Wheelock, on the part of the Humbug Co.

As soon as the case was thrown out of eourt, (the next trial would have heen the eleventh) Bernhard Marks and Gen. Darrow bought the other parties out, and formed the company which, under the superintendency of Mr. Marks, is now working with unprecedented energy hoth mines at once. Although the Humhug Co. worked their grounds night and day for twenty-one years, and the New York Co. did the same for ten years, present developments show that neither mine is more than fairly opened. In examining ethis mine it wasncouraging to note the permanency promised by the developments presented, and we mentally exclaimed: "It will he a long time before Old Tuolnmne will be played ont." We were politely shown through the miue and were encouragingly impressed with the extent and richness of Tahle Mountain.

A new slope 450 feet long has just been completed at heavy expense into the New York part of the mine. This slope taps the Humbug channel and demoustrates that both companies erred when they thought they were workiug the same channel. There are two channels that, so far as explored, seem to have no connection with each other, though it is probahle that they *do* connect somewhere in the mountain. The rich gravel now beiug washed is out of tho Humhug chaunel and the Superintendent is putting forth energetic efforts to get into the New York channel, which is known to he far richer than the Humhug.

As the Humhug Co. worked up their channel they left the high ledge on their left entirely unexplored. When Mr. Marks became Snperintendent, he ran a drift over this ledge, and to his delight and the snrprise of the miners, found that what was supposed to be the shore of the ancient river was really a har covered with anriferous gravel, and heyond which lies another channel, parallel with the Humhug channel, and showing the coarse, hlack gold characteristic of the New York channel. Unfortunately, the drift had heen started from hreasted ground, and just as the developments were becoming interesting, the entrance to the drift became too dangerons to allow of its heing continued Although Superintendent Marks seems to be the only one on the ground to doubt the existence of the New York channel at that place, he has manifested sufficient confidence in its probability to start a new gangway in that dircetion, which he is pushing twenty-four hours a day. We take great pleasure in chronicling these evidences of our county's wealth, and have reason to know that in the near future we shall be able to eall attention to many other golden developments in the same and other parts of Tuolumne County.

Mauna Loa.

This grand volcano is again in eruption. There are few volcanic mountains that present a mors thrilling spectacle. It is situated in the island of Hawaii, in ths Sandwich group. Viewed from the sea it is most majestic, risiug to the height of nearly 14,000 feet in ons huge mass. The summit is visihls for an immense distance. There is upon the top a crater of enormous size, said to be not less than six miles in circumference, and mors than eight hundred feet deep in its shallowest part vast abysses sinking down from that into unfathomable depths below. Other craters mors active, but of smaller extent, exist upon the sides of the mouutain, and frequently becoms the cause of alarm to the inhabitants of the island. The chief of them is on the eastern side, known as Kilauea, and has an elevation of a little more than four thousand feet. From these craters eruptions are of frequent occurrence. As many as eleven have been recorded during the last eighty years. The crater of Kilauea was accurately described by Count Strzelechi, who visited it in 1838. He remarks in reference to it:

"Nowhere does the solution of the great problem of volcanic fires hy Sir Humphrey Davy receive a more palpable illnstration than here. The access of water to the ignited masses of minerals, of alkaline and earthy hases, by which that great philosopher explained the convulsions of volcanic fires, is displayed here in most portentions, most awful effects. It is only to those millions of vents all aronnd the crater through which the superabundance of steam escapes—to the millions of fissures through which the sulphurous and sulphuric acids liherate themselves that the preservation of Hawaii from utter destruction by the expansive forces of steam and gases is ascribed.

THE ONLY NICKEL MINE.—Few people are aware that the nickel, from which onr smaller coins are made, comes from a single mine, which is the only one in the country that is now being worked. This mine is situated in Lancaster county, Penn. It has been worked for seventeen years, aud developed to a depth of 200 feet. The length of this lode is between two and three thousand feet, and it produces from 400 to 600 tons per month, employing in the working of the mine a force of 175 men. In the arts, nickel is rapidly growing into favor as a substitute for silver in plating steel, iron and other metals. Its commercial demand is rapidly increasing, and as it is much cheaper than silver, it will undoubtedly he adopted in the manufacture of many articles, as a substitute for that more precious metal. One mine, the Mine-la-Motte tract, Missouri, was worked from 1850 to 1855. The ore was the sulphnret, associated with lead and copper. About $100,000 was realized from the croppings of the vein. Croppiugs of nickel ore are found also in Madison, Iron, and Wayne counties, Missouri. The refiued metal is worth $3 per pound.—*American Manufacturer.*

NEW QUARTZ BATTERY.—A short time since, says the Deer Lodge *Independent*, we mentioned that our townsman, G. S. Owlin, had invented a new quartz battery. One day thie week we examiued the model that is to he placed in the Patent Office. The battery ie so arranged that the quartz is crnshed in about the size of ordinary peas under the first stamp. It is then carried by a chute nnder the second stamp which has less drop and double the speed of the first. Here a finer screen is used aud it theu passes down to stamp No. 3, where it is reduced to dust. The last stamp being rnn faster than tho second will have less drop. For example: The first drop will fall ten inches, the second seven and the third four inches, and so geared that the first will drop 100 times per miuute, the next 200 and the last 300. The iuventor claims that by the nse of this battery, the same number of stamps will thoronghly pulverize one-half more quartz in a giveu time than that by the old style of batteries. The invention is a novel one and we doubt will not prove a valuable adjunct to mining.

LEGAL HOLIDAYS.—By the Civil Code, section 3,574, it is provided that "Holidays, within the meaning of this Code, are, every Snuday, the 1st day of Jannary, the 22d day of February, the 4th day of July, the 25th of December, every day on which an electiou is held throughout the State, and every day appointed by the President of the United States or hy the Governor of this State, for a public feast, thanksgiving or holiday." Section 3,574 (same page) provides, that, "if the 1st of January, 22d of February, the 4th of July, or the 25th of December falls on Sunday, the Monday following is a holiday."

CEMENT FOR AQUARIA.—The trouble with red lead and oil is, that it is apt not always to adhere to the glass. Probably the best cement is that which consists of three parts of powdered pipe-clay, one part oxide of iron, and as much linseed varnish as is sufficient to make a stiff paste; or the so-called stone cemeut — nine parts of pipe-clay, one of litharge, and so much linseed oil as to he of proper consistency. This becomes as hard as iron, and adheres with great tenacity to glass or almost any other substauce.—*Journal Applied Chemistry.*

SCIENTIFIC VALUE OF BEAUTY.—Mr. F. T. Mott, of the Brstish Scientific Association recently read before that body an elaborate paper on the "Scientific Value of Beauty" in relation to the doctrines of selection as held by Mr. Darwin.

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WALTER TURNBULL. JAMES HAY SMITH.
TURNBULL & SMITH,
Commission Stock Brokers,
Union Insurance Co.'s Building, 418 California Street,
(Up Stairs,) SAN FRANCISCO.
WALTER TURNBULL, Member S. F. Stock & Ex. Board.

$1,000 REWARD! For any case of Blind, Bleeding, Itching, or Ulcerated Piles that De Bing's Pile Remedy fails to cure. It is prepared expressly to cure the Piles and nothing else. Sold by all Druggists. Price $1.00.
U. F. RICHARDS & Co., Agents, corner Clay and Sansom streets, San Francisco, Cal.

OAKEY & SON'S EMERY AND BLACK LEAD MILLS, Blackfriar's Road, London, England.
OAKEY'S WELLINGTON KNIFE POLISH. Packets, 3d each; tins, 6d., 1s., 2s. 6d., and 4s. each.
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OAKEY'S GOODS SOLD EVERYWHERE by Ironmongers, Grocers, Oilmen, Brushmakers, Druggists, etc. 21v25-1y

Metallurgy and Ores.

RODGERS, MEYER & CO.,
COMMISSION MERCHANTS,
ADVANCES MADE
On all kinds of Ores, and particular attention
PAID TO
CONSIGNMENTS OF GOODS.
4v16-3m

LOUIS FALKENAU,
STATE ASSAYER,
Analytical and Consulting Chemist,
421 Montgomery St. up stairs.
Particular attention given to the Analysis of Ores Minerals, Metallurgical Products, Mineral Waters Soils, Commercial Articles, Etc.
One or two pupils can receive theoretical and practical instruction in Assaying, Analysis, or any particular branch of Chemistry at the laboratory. 11v21-3m

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C. W. STRONG & CO.,
Metallurgical Works,
No. 10 Stevenson Street, near First, SAN FRANCISCO
We purchase Ores, Bullion, etc. Ores worked and Tests made with care. Also, Assays of Gold, Silver, Copper, Lead, Tin and other Metals. 23v22tf

LEOPOLD KUH,
(Formerly of the U. S. Branch Mint, S. F.)
Assayer and Metallurgical
CHEMIST,
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One Door West of Montgomery.....SAN FRANCISCO.
J. A. MARS, Assayer.
☞ Analysis of Ores, Mineral Waters, etc. 10v26

Richardson & Co., Copper Ore Wharves,
SWANSEA.
RICHARDSON & Co. have been for thirty years established in Swansea as Agents for the preparation, Sampling, Assaying, and Sale of Copper, Silver, Gold, Lead, Zinc, and all other Ores and Metals, for which they have extensive Warehouses and Wharves under cover, 1,000 feet of Quay Frontage within the Floating Dock, and the most complete Machinery and Appliances. They are also prepared to make advances against Ores in anticipation of realization, and to guarantee all payments when required. 17v24-1y

PLATINUM
Vessels, Apparatus, Shsst, Wire, Etc., Eto.
For all Laboratory and Manufacturing Purposes
H. M RAYNOR,
25 Bond street, New York.
Platinum Scrap and Ors purchased. 22v18

S. W. HOWLAND & CO.,
Crushers and Samplers of Ores,
No. 16 DRUMM STREET,
BETWEEN CALIFORNIA AND SACRAMENTO STREETS.
S. W. HOWLAND, the Pioneer Crusher and SAMPLER of Ores and Pulvertzer of Mineral and Chemical substances, has returned to San Francisco and resumed business at the above, his original stand. He wishes it to be DISTINCTLY UNDERSTOOD that having several months ago dissolved partnership with Mr. Thurman at the Mission Street Mill, he has now NO CONNECTION WITH THAT ESTABLISHMENT whatever.
The Same Faithful Sampling
Formerly performed by him may be relied on, and such is guaranteed. oc1915p3m

United Royal Smelting Works
OF THE
KINGDOMS OF PRUSSIA AND SAXONY.
General Agency, R. J. ROBERTSON, Hamburg, GERMANY.
Whose Representative for the United States,
H. ROBERTSON, 149 Broadway, New York,
Is ready to receive consignments of
ORE and all kinds of FURNACE STUFF
For the above named Works.
FULL PARTICULARS GIVEN ON APPLICATION.
16v25-3m

Important to Miners and Mill Men.
Silver-Plated Copper Amalgamating Plates, for Saving Gold.
Of all sizes and in any quantity, furnished to order. Full instructions sent for operating.
Particular attention given to plating goods for Builders, Plumbers, etc. Hotel and Restaurant work replated.
SAN FRANCISCO GOLD AND SILVER PLATING WORKS,
655 Mission street, San Francisco.
2v25-3m E. G. DENNISTON, Proprietor.

Varney's Patent Amalgamator.
These Machines Stand Unrivaled.
For rapidity pulverizing and amalgamating ores, they have no equal. No effort has been, or will be spared, to have them constructed in the most perfect manner and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.
They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.
This Amalgamator Operates as Follows:
The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the apperture and between the griuding surfacee.—Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.
Setlers made on the same principle excel all others They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.
Mill-men are invited to examine these pans and setlers for themselves, at the office, 229 Fremont Street, San Francisco

JOHN TAYLOR & CO.,
IMPORTERS OF AND DEALERS IN
ASSAYERS' MATERIALS,
Chemical Apparatus and Chemicals,
Druggists' Glassware and Sundries,
PHOTOGRAPHIC GOODS, ETC.,
512 and 514 Washington street, SAN FRANCISCO.
We would call the special attention of Assayers, Chemists, Mining Companies, Milling Companies, Prospectors, etc., to our large and well adapted stock of
ASSAYERS' MATERIALS
—AND—
Chemical Apparatus,
Having been engaged in furnishing these supplies since the first discovery of mines on the Pacific Coast.
☞ Our Gold and Silver Tables, showing the value per ounce Troy at different degrees of fineness, and valuable tables for computation of assays in Grains and Ormmes, will be sent free upon application.
7v25-tf JOHN TAYLOR & CO.

Agents Wanted for Zell's Encyclopedia.
Z.E. is a Dictionary of Language. It contains every word in the English language with its derivation and definition.
Z.E. is a Biographical Dictionary. It has a sketch of every noted person of all ages, many of them with portraits.
Z.E. is a Complete Gazetteer. It has a description of every county, sea, lake, river, mountain, town, etc., in the world.
Z.E. is a Medical Dictionary. It contains a description of diseases, remedies lustruments, surgical operations, etc., etc.
Z.E. is a History of the World. It contains a description of the migration of races, the progress of nations, their customs, laws, religions, etc.
Z.E. is a complete Natural History. It describes all animals, birds, insects, fishes, and reptiles.
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Z.E. is a complete Church History. It describes impartially the various divisions of the church of all ages.
Z.E. is equal to a whole library of works. It describes every material or non-material thing that is capable of description in the language.
Z.E. is well illustrated. It contains nearly three thousand engravings of persons, animals, plants, trees, flowers, machines, buildings, etc.
A specimen number, containing forty pages, will sent to any address on the receipt of ten cents. Sold only by subscription. Apply to
FRANCIS DEWING & CO.,
542 California street, San Francisco.
7v4-4m General Agents for Pacific Coast.

The C-Spring Roller Skate.
PATENTED 1871.

Rights and Skates for Sale.
This superior Skate is now beginning to attract the attention of Rink Owners, it being the only Cramping Skate now before the public (except the Plympton Skate) that can run without infringing a former patent.
THIS SKATE IS POSITIVELY NO INFRINGEMENT
Of anybody's patent. It is made in the most substantial and workmanlike manner, and possesses the following points of merit: Beauty, Elasticity, Ease of Movement, Strength, Lightness, and does not injure the skating floor as much as the ordinary skate.
Every pair Warranted to be just what it is represented. Parties intending to
START A RINK,
Should examine and test this Skate. Sample pairs sent C. O. D. on application.
In ordering samples, state the number of boot or shoe worn, and whether for lady or gentleman.
For City, County or Rink Rights, call on or address
WIESTER & CO.,
No. 17 New Montgomery street (under Grand Hotel), 9v4swhp4m SAN FRANCISCO.

A Useful California Invention.

Hydraulic Elevator and Sewing Machine Motor.

Elevatore in crowded cities are now conceidered a neceessity, and few of the large wholeeale houeee in four or five etory huildings are without them. By their nse the npper etoriee are made availahle, not only as etore, but as salee roome, and goods may he displayed as well, and eometimee to hetter advautage in a room lighted from the roof, than they can on the ground floor. To run theee elevators by eteam requires an engineer, and etill further increasee expenses hy a higher rate of insnrance, fuel, etc. It is evident therefore that water power is the most convenient motor, eince no assistant ie required, and the whole arrangement may he managed hy eimply pulling certain ropee to open or close the proper valves. As a general thing, however, difficulty has heen experienced in providing a water engine which would not leak, or make that peculiar unpleasaut thumping noise which is nsually noticeable.

A California inventor has, however, eucceesfnlly constrncted a hydraulic elevator, which does away with these disadvantages, and its geueral introduction eeems to ue only a qnestion of time. An extended description of this machiue we will defer until ahle to procure the cuts necessary to explain it accurately, hnt a general idea may he given briefly. The elevator consists simply of two oscillating cylindere with right-angled crank, and the oscillation opene the porte precisely in proportion to the travel of the pistou; therefore there is no jar or sudden concussion asin ordinary water engines. This plan admits of the stroke heing changed without any change in the porte, and still the flow of water is in proportion. The cylindere each oscillate on a taper plng in which are a series of porte corresponding to a series of ports iu the cylinder, that oscillate with it, and are so adjnsted as to cut off and turn on the water at the proper time. The piston is connected in the ordinary manner.

The principle of this machine is that the circle described by the crank must be in proportion to the travel of the piston, and the oscillation of the cylinder must likewise he in proportion, which opens and shnts the ports exactly in proportion as the piston travels. Any number of norte can he made so as not to cramp the flow of water. In these machines more area of port is always made, than there is area of pipe, and moreover, the water is nsed over twice. It is run into a eide tank and utilized as a hrake to hring the cage down. Ordinary drums, etc., are nsed as usual, with a eafety clutch. The peculiar arrangement of the piston and ports allows the engines to attain a great speed of piston. They have heen operated successfully to a speed of 200 feet per minute without any jar or concussion.

The machine is adapted for use in any place where there is a good pressure of water either for quartz mille or on a sewing machine. We eaw a few machines of small eize which were attached to sewing machines and in practical operation. They work very smoothly and rapidly, at the same time without noise. They are placed under the tahle of the machine, and are regulated hy a treadle connected with the valves. The mannfacturere have orders for more than they can make with their preeent facilities, and are now makiug peculiar toole to enahle them to turn out the machines in quantities and of uniform eize so that piecee can he duplicated. One of the sewing machiue motors is iu operation in Sullivan & Fratinger's Cloak Store on Montgomery street, and another at the Ladiee Emporium under the Grand Hotel. When the process of manufacture is more systematized, as it will he, they can turn out the the machines at less cost than at preeent, and their use will doubtless become more geueral.

Thie engine ie strictly a California invention, brought out here and in use here. The inventor, Mr. H. B. Martin, of Martin & Co., No. 13 Fremont etreet, the manufacturer, is a Californiau, hut is at present in St. Louis introducing his invention. Quite a number of the elevatore have heen put up in thie city in such places as the wholesale houses of Uhlfelder, Cahn & Co., Shweitzer, Sachs & Co., L. & M. Sachs, Hostetter & Redington, Huntington & Hopkine, Bradley & Rulofeon, at the Custom House, and in many prominent houses iu the wholesale part of the city. In some places the hoistiug apparatus was fitted up very handsomely, and everywhere the engines seemed to give satisfaction. The machines will he made of different eizee, and Martin & Co. are preparing to turn them ont in numbers.

Wooden Pavement.—However well the different etyles of wooden pavements have stood the teet of durahilty in citiee in the Eastern Statee they have proven almost entirely worthlese in San Francisco. The majority of the streets here which are laid with Nicholson pavements are in a most deplorahle condition. The light rains of the heginning of this month swelled the wood eo much that it has hulged np in places to an extent not at all in accordance with city surveys or general utility. Our long and rainless summere dry the wood thoroughly and when the first rain comes its effect is immediately apparent. The only possihle benefit noticeahle, is the queetionahle one that the dieplaced hlocks offer a ready harvest of firewood for the impecunious familiee in certain neighborhoods; but whether the more fortnuate pereons who live on streets paved with these hlocks are satisfied to hear thie compnlsory charity, is another question.

It is a matter of douht whether there is any really efficient and durable pavement after all. The Russ is almost as had as the horse disease, in wet weather, and cohhle stones are an ahomination hoth on account of noiee and destruction to the horses feet. The Nicholson has a fine appearance and in dry weather does very well hnt onr seasone in this country have the effec of almost preventing travel on the streets laid with it, wheu the rains first come. The quesof pavemente is under consideration hy our City Fathere, and it is believed that those made of wood will he officially condemned. Can not some inventive geuius devise a new pavement which will be serviceable, and at the same time cheap?

New Incorporations.

Independent and Omega M. Co.—Nov. 21. Location: Virginia District, Storey Co., Nevada. Capital, $3,000,000, in 60,000 shares. Trustees—Philip Meagher, Wm. H. Brewer, T. C. Sanborn, L. B. Ward and R. H. Weber.

Frazer Lock Manf'g Co.—Nov. 21. Object: To manufacture and vend the Frazer lock. Capital stock, $150,000, in 1,500 shares. Trustees—Samuel P. Taylor, Jonathan Kittridge, Benjamin H. Freeman, John Daniel, Charles Miller, Vitruvius Frazer and Wm. L. Bovyer.

Miners' Protective Association.—Nov. 21. The objects are: To cultivate social intercourse, to maintain a Cheritable Fund for the benefit of the members, and for the furtherance of all moral and benevolent purposes. Branch Associations will be established in different parts of the State. Trustees—Henry Schening, John Garwis and John Young. H. Meyer, President; Albert H. Nelson, Vice-President; John Schneider, Treasurer; James B. Wheeler, Recording Secretary; H. H. Suhling, Financial Secretary.

Meetings and Elections.

Frazer Lock Manufacturing Co.—Meeting, Nov. 26th, Officers elected as follows: Benjamin H. Freeman, President; John Daniel, Vice-President; Vitruvius Frazer, General Manager; Daniel McLaren, Secretary; Charles Miller, Treasurer.

Carson Consolidated M. Co.—Nov. 20th. Trustees—R. F. Knox (President); J. S. Nesmith, J. S. Jameson, E. D. Hutchinson and A. D. Carpeuter (Secretary and Treasurer).

Mining Accidents.—An unusual number of mining accidents seem to have occurred within the past few weeks, and a large proportion of them fatal. In most mines of any size; all possible precautions to provide against accidents are taken, but it is impossible to provide against carelessness, especially in the use of powder, so we hear of many fatal cases.

On the 22nd, Michael Hawkins was fatally injured by the premature explosion of a blast in the Crown Point mine.

Cyrus Grant was severely hurt in the Julia mine Washoe, by the cage dropping upon him as he was landing at a station.

Fred Wagner was crushed to death in the machinery of the Magnet mill last week.

Thomas B. Mills was instantly killed on the 11th inst., by falling down a shaft in the Sutro Tunnel, a distance of 275 feet.

Richard Jackson was killed last week, at the Amador mine, Sutter Creek, by being knocked down the shaft—1300 feet—by the hoisting bucket swinging against him, while he was standing near the mouth of the shaft. His body was terribly mangled.

A man named McGowan was killed recently in the Egan mine, Egan Cañon, Nevada, by falling down the shaft—420 feet deep.

The Gold Hill *News* mentions a narrow escape of a German in the Bowers mine. A shute was blocked up with boulders, and a charge of powder put in beneath to loosen it. It did not explode until jnst as the German went to examine it. About three car-loads of rock covered him up, but when dug out he was, strange to say, totally unhurt. The *News* thinks he is the hardest Dutchman it ever heard of.

Railroad Convention.—A meeting of the citizen of Sau Mateo Couuty was held at Redwood City, on the 26th, to take into consideration the feasibility of building a narrow-gauge railroad, through the county. The matter was fully discnesed, an addreee preseuted, and resolutions adopted to the effect that the county needed the road; that it ehould take stock in it, and that an Aseociation be immediately formed for the purpoee of constructing the road; and an Executive Committee he appointed to receive subscriptione. This is a step in the right direction.

Ore Shipments.—A dispatch of Nov. 26th, from Battle Mountain, Nev., states that 6 "prairie schooners" arrived there on that date, with rich silver ore from the Consolidated White and Shiloh minee at Galena. The ore was shipped to San Francisco.

Patents & Inventions.

Full List of U. S. Patents Issued to Pacific Coast Inventors.

[Reported Officially for the Mining and Scientific Press, Dewey & Co., Publishers and U. S. and Foreign Patent Agents.]

By Special Dispatch, Dated Washington, D. C., Nov. 26th, 1872.

For Week Ending November 12th, 1872.*

Furnace for Roasting Ores.—Martin P. Boss, Enreka, Nev.

Gang-Plow.—Charlee Kewin, S. F., Cal.

Tappet for Quartz Mills.—Benjamin McCauley, Grass Valley, Cal.

Apparatus for Amalgamating Gold and Silver.—James Oliver, Ophir, Cal.

Manufacture of Sugar in Blocks or Cubes.—A. F. W. Partz, Oakland, Cal.

Fruit Box.—Charles W. Weston, S. F., Cal.

Animal Trap.—George Barr, Clatskanie, Oregon.

Car Coupling.—Elisha T. Barlow, S. F., Cal.

Balancen Slide Valve.—Henry Kessler, S. F., Cal.

Bottling Machine.—James Armstrong and Samuel Marks, S. F., Cal.

Bottling Apparatus.—Asher S. Taylor, S. F., Cal.

Device for Charging Drill Holes.—Francis X. Lavalle, Auhurn, Cal.

*The patents are not ready for delivery by the Patent Office until soms 14 days after the date of issue.

Note.—Copies of U. S. and Foreign Patents furnished by Dewey & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacinc coast inventors transacted with greater security and in much less time than by any other agency.

Ely District.—We have received from A. Noel, room 20, Hayward's Buildiug, an excellent map of Ely district, Nevada, compiled and drawn by F. E. Durand, C. E. It shows the location of the mills and mines, and the relative position very clearly, together with the route of the Pioche and Bullionville Railroad, and the eituation of prominent officee, buildings and stores in Pioche City. The map is well executed and will he found very convenient for partiee interested in this rich and growing camp.

Coal.—A coal mine has been found in Tehama county, near the railroad; the vein ie eight feet in width. The coal hae heen tested and found to hnrn well.

Leather Market Report.

San Francisco, Thursday, Nov. 28, 1872.

[REPORTED FOR THE RURAL PRESS BY DOLLIVER & CO.]

City Tanned Leather, ₱ lb	26@29
Santa Cruz Leather, ₱ lb	26@29
Country Leather, ₱ lb	25@28
Stockton Leather, ₱ lb	28@28

French skins continue firm. All California ekins are eoarce and bring full pricee.

Jodot, 8 Kil., per doz	$60 00@
Jodot, 11 to 19 Kil., per doz	66 00@ 85 00
Jodot, second choice, 11 to 15 Kil. ₱ doz	66 00@ 75 00
Lemoine, 16 to 18 Kil., ₱ doz	75 00@ 77 50
Levin, 12 and 13 Kil., per doz	68 00@ 70 00
Cornellian, 16 to 19 Kil., per doz	63 00@ 65 00
Cornellian, 12 to 14 Kil., per doz	56 00@ 60 00
Ogeran Calf, ₱ doz	54 00@
Simon, 18 Kil., ₱ doz	60 00
Simon, 20 Kil. ₱ doz	65 00
Simon, 24 Kil. ₱ doz	72 00
Robert Calf, 7 and 8 Kil	35 00@ 40 00
French Kips, ₱ lb	1 00@ 1 30
California Kip, ₱ doz	55 00 to 70 00
French Sheep, all colors, ₱ doz	8 00@ 15 00
Eastern Calf for Backs, ₱ lb	1 15@ 1 25
Sheep Roans for Topping, all colors, ₱ doz	9 00@ 13 00
Sheep Roans for Linings, ₱ doz	5 50@ 10 50
California Russett Sheep Linings	1 75@ 5 50
Best Jodot Calf Boot Legs, ₱ pair	5 25
Good French Calf Boot Legs, ₱ pair	4 50@ 5 00
French Calf Boot Legs, ₱ pair	4 00
Harness Leather, ₱ lb	30@ 37½
Fair Bridle Leather, ₱ doz	48 00@ 72 00
Skirting Leather, ₱ lb	34@ 37½
Welt Leather, ₱ doz	30 00@ 50 00
Buff Leather, ₱ foot	18@ 21
Wax Side Leather, ₱ foot	20@ 22
Eastern Wax Leather	26

San Francisco Metal Market.

PRICES FOR INVOICE.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

Thursday, Nov. 28, 1872.

Iron.—		
Scotch Pig Iron, ₱ ton	$60 00 @	65 00
White Pig, ₱ ton	60 00 @	65 00
Refined Bar, bad assortment, ₱ lb	— 04½@	— 5
Refined Bar, good assortment, ₱ lb	— 05 @	— 5½
Boiler, No. 1 to 4	— 05½@	— 06
Plate, No. 5 to 9	— 06½@	— 07
Sheet, No. 10 to 13	— 07½@	— —
Sheet, No. 14 to 20	— 07½@	— —
Sheet, No. 24 to 27	— 08 @	— —
Horse Shoes	8 00 @	
Nail Rod	10	
Norway Iron	8	
Rolled Iron	5	
Other Irons for Blacksmiths, Miners, etc.	5½@	6½
Copper.—		
Sheathing, ₱ lb	— — @	— 45
Sheathing, Yellow	— 38 @	— 40
Sheathing, Old Yellow	— — @	— 13
Composition Nails	— 28	— 30
Composition Bolts	— 28	— 34
Tin Plates.—		
Platee, Charcoal, IX ₱ box	18 00 @	— —
Plates, I C Charcoal	14 00	— —
Roofing Plates	18 50	— —
Banca Tin, Slabs, ₱ lb	— 50	— —
Steel.—English Cast, ₱ lb	— 19	— —
Drill	— 19	— —
Flat Bar	— 19	— —
Plough Points	3 75	4 00
Russia (for mould boards)	— 12½	— 15
Quicksilver.—₱ lb	— 85	— 87½
Lead.—Pig, ₱ lb	— 5¾	— 6
Sheet	— 10	— —
Pipe	— 9	— 10
Bar	— 6½	— 7
Zinc.—Sheets, ₱ lb	— 11	— 11½
Borax.—Refined	— 28	— 30
Borax, crude	— 5	— —

Raymond & Ely Suit.—The suit of McDonald against the Raymond & Ely mine, to which we have referred hefore, has heen eettled and dismissed. The suit wae eettled hy Captain Raymond paying on his own account $75,000, ae the Company refused to compromiee.

The Mining and Scientific Press for 1872 is Still Marching Onward!

Our careful system of compiling, judiciously condensing, and conveniently arranging into regular departments, has been heartily endorsed. It renders the paper worth mors to readers, who can find handily that which intereets them most. This plan will be continued in Volume XXV.

The weekly issues of the Press will contain reliable

Information for Practical Miners,

Treating on the Opening of Mines; Mining of Ores; Milling of Ores; Smelting of Ores; Separation and Roasting of Ores; Amalgamation; Saving of Gold and all precious Metals; New Processes of Metallurgy; New Discoveries of Mines; Mining Engineering and Hydraulics.

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All new and important developments in Sclentific and Mechanical Progress; Patents and Inventions of the Pacific States; Progress of Home Industries; Hints for Local Manufacturers; Illustrations of New Machinery; Reports of Popular Scientific and Industrial Lectures.

Our Mining Summary

Gives the progress of mining work from week to week in the various counties and districts throughout the principal mining regions of the United States, arranged in alphabetical order. It is the most extensive record of mining operations published in the world. It affords the intelligent miner a rare opportunity to know and profit by the work and experience of his neighbors. Miners have few sources of practical information in their calling, and should embrace every reliable means for improvement. Mining Operators and Shareholders, at home and abroad, weekly examine our Summary with increased interest and profit.

Our "Domestic Economy"

Embraces new and important facts which should be known in every cabin and household. Short and interesting—the articles under this heading are freely read and practiced with profit and improvement to the readers.

The Press i not strictly a "paper for professional, scientific men," but rather a

Liberal and Popular Scientific Journal,

Well calculated to make practically scientific men from our intelligent masses. This is our stronghold for accomplishing good. Plain, correct and pleasing language, easily comprehended by all, confined mostly to short articles, is our endeavor.

For Self-Improvement,

Every issue of the Press abounds with articles of an elevating character, to stimulate the higher virtues and natures and progressive intellects of both men and women.

The New and Novel Developments

In the progress of this comparatively new section of the Union (but recently settled and now rapidly increasing with a population of the most intelligent and venturesome people, attracted from nearly every quarter and clime on the globe), enable us, with due enterprise, to display vigor and freshness in our columns not met with in similar journals elsewhere. The same circumstances also render such a paper more especially valuable to its readers in a new, and to a certain measure, untried field, where the best methods and processes of industry are not so well established or traditionally known as in older communities. Published expericuces often eave costly experiments and disastrous results.

Hundreds of Dollars

Are oftentimes saved to the readere of this paper by a single hint or article of information in its columns. Such instances have been repeatedly reported to the editors and proprietors during their long connection with the Press. Our paper presents

A Great Variety of Industrial Information,

In brief and fresh form, suited to the wants and tastes of the readers of this coast, which is not obtainable otherwise so timely, or in so cheep and convenient form. As an industrial publication, meeting the wants of so many kindred industries, this journal stands preeminent and without a precedent.

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Our Friends can do much in ald of our paper and the cauee of practical knowledge and science, by assisting Agents in their labors of canvassing, by lending their influence and encouraging favors. We intend to send none but worthy men.

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Subscribers will notice that the figures found on the right of the pasted slips, represent the date to which they have paid. For instance, 21sp70 shows that our patron has paid his subscription up to the 21st of September, 1870; 4jy72, that he has paid to the 4th of January, 1872; 4jl73, to the 4th of July, 1873. The inverted letters (ɟɐɥɟ, etc.,) occasionally used are marks of reference, simply for the convenience of the publishers.

If errors in the names or accounts of subscribers occur at any time an early notice will secure their immediate correction. Please notify us if you are not properly credited within two weeks after paying.

☞ *Postmasters, please send corrections also.*

☞ Send by letter, and give your name and P. O. Address, when you wish this paper stopped, if it is continued beyond the time paid for, as sometimes happens through request of agents or other parties. Returning the paper, or telling the P.M. you will not take it, is not sufficient notice. Parties requested to notify us, frequently fail to do so. Papers sent back are liable to miscarry. Without your address with your name we might have to look over near 10,000 names before finding yours, to erose off. We do not intend to send the paper to a single person who does not desire it, and in case of mistake, will thank any subscriber to inform us. bptf

Mining and Other Companies.

Owing to the time necessary to await the present large edition of the M. & S. Press we are obliged to go to press on Thursday evening—which is the very latest hour we can receive advertisements.

Excelsior Silver Mining Company—Location of works, Yellow Pine District, Lincoln County, Nevada.

At a meeting of the Trustees of the above named company, held October 29th, 1872, at the office, No. 640 Washington street, San Francisco, it was, on motion, ordered that the following resolution, which was unanimously passed at a meeting of the Stockholders, held October 28th, 1872, be advertised for one month in the Mining and Scientific Press, and a personal notice served on each member:

Resolved—That we, the Stockholders representing in our individual names 4,840 shares of the Excelsior Silver Mining Company, do hereby mutually agree to return our individual certificate or certificates in stock now held by us and standing in our names, agreeing that upon a pro rata division of the entire stock between the stockholder, that we will individually pay a monthly assessment of ten dollars ($10) per month for one year, unless sooner rescinded by the Trustees of said mine.

Also, that said monthly assessment shall be paid on or before the tenth day of each month, commencing November 10th, 1872. By order of Trustees,

no2-1m W. A. KOLLMYER, Secretary.

Golden Rule Mining Company—Location of works: Chili Hill, Tuolumne County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the second day of November, 1872, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary at the office of the Company 432 Montgomery street, (Room No. 5) San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the third day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the fourth day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. B RUSSELL, Secretary.

Office, Room No. 5, 432 Montgomery street, San Francisco, Cal.

Great Blue Gravel Range Company—Location of works, Blue Gravel Range, Placer County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 16th day of November, 1872, an assessment of Ten Cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, Room 5 and 6, No. 302 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Wednesday, the 18th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the 7th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale.

By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room 5 and 6, No. 302 Montgomery street, San Francisco, California. no23

Hudson Gold Mining Company—Location of works, Cherokee Mining District, Plumas County, State of California.

Notice is hereby given that at a meeting of the Trustees of said Company, held on the 11th day of November, 1872, an assessment of 7½ cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 411 California street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Monday, the 16th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 5th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of the sale.

JOS. L. KING, Secretary.

Office, 411 California street, San Francisco, California. no16-4t

Indus Gold and Silver Mining Company—Location of works, Virginia City, Storey County Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the nineteenth day of October, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Barnard, R	79	10	$5 00
Everson, Wallace	89	5	2 50
Everson, Wallace	90	6	2 50
Everson, Wallace	91	5	2 50
Everson, Wallace	92	5	2 50
Everson, Wallace	93	5	2 50
Everson, Wallaco	94	5	2 50
Everson, Wallace	95	5	2 50
Everson, Wallace	96	5	2 50
Everson, Wallaca	97	10	6 00
Fowler, John	5	5	2 50
Knapp, J B	76	5	2 50
Summers, H	35	5	2 50
Summers, H	36	5	2 50
[In dispute—Not issued]		25	12 50

And in accordance with law, and an order of the Board of Trustees, made on the 19th day of October, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at No. 327 Montgomery street, San Francisco, Cal., on the sixteenth day of December, 1872, at the hour of 10 o'clock A. M., of said day to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

DAVID WILDER, Secretary.

Office, 24 Merchants' Exchange, California street, San Francisco, Cal. no30 3t

Kincaid Flat Mining Company—Location of works, Kincaid Flat, Sonora, Tuolumne Co., Cal.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 18th day of October, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Milo Hodaley	27	10	$30 00
Milo Hodaley	28	10	30 00
Milo Hodaley	81	20	60 00
Milo Hodaley	82	20	60 00
Milo Hodaley	83	20	60 00
Milo Hodaley	84	20	60 00
Milo Hodaley	87	13	39 00
Milo Hodaley	92	20	60 00
Milo Hodaley	94	25	75 00
Milo Hodaley	95	20	60 00
F Vassault	93	50	150 00

And in accordance with law, and an order of the Board of Trustees, made on the 18th day of October, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at the auction rooms of Henry A. Cobb & Co., 219 Sansome street, on the tenth day of December, 1872, at the hour of 12 o'clock, M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale. R. H. CORNELL, Secretary.

Office, 247 Sansome street, up stairs, San Francisco, California. no23-3t

KINCAID FLAT MINING COMPANY — POSTPONEMENT. The above sale is hereby postponed until Tuesday, the 17th day of December, 1872, at the same hour and place. By order of the Board of Trustees.

no30-3t R. H. CORNELL, Secretary.

Mammoth Blue Gravel Company—Location: Chalk Bluff District, Nevada County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 15th day of November, 1872, an assessment of eight cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the 23d day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Monday, the 13th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.

Office, room 37, New Merchants' Exchange, (third floor), California street, San Francisco, Cal. no23

Mina Rica Mining Company---Location of works, Auburn Mining District, Placer County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 19th day of November, 1872, an assessment of thirty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, No. 320 California street, room No. 5, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the 23d day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Monday, the 13th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office—No. 320 California street, room No. 5, San Francisco, Cal. no23

Noonday Silver Mining Company---Location of works: White Pine Mining District, White Pine County, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment, No. 12, levied on the 11th day of October, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Barton, W H, Trustee	566	100	20 00
Barton, W H, Trustee	594	50	10 00
Barton, W H, Trustee	670	100	20 00
Barton, W H, Trustee	729	50	10 00
Bogart, O H	633	200	40 00
Child & Jones, Trustee	689	100	20 00
Child & Jones, Trustee	113	100	20 00
Ribbins, Patrick	955	40	8 00
Cohlman, Wm	959	50	10 00
Cohlman, Wm	1027	100	20 00
Duhriel, P	918	100	20 00
Drexler, L P & Co, Trustee	1016	50	10 00
Fordham, R B	444	60	13 20
Farnam, E	79	100	20 00
Fenn, T W, Trustee	539	50	10 00
Hill, A E, Trustee	323	50	10 00
Hill, A E, Trustee	381	50	10 00
Hill, A E, Trustee	382	50	10 00
Hill, A E, Trustee	384	50	10 00
Hill, A E, Trustee	395	26	5 00
Hill, A E, Trustee	406	100	20 00
Hill, A E, Trustee	410	25	6 00
Hill, A E, Trustee	415	50	10 00
Hunt, O H, Trustee	944	200	40 00
Hall, N H, Trustee	718	100	20 00
Hilliard, B F, Trustee	844	100	20 00
Hurley, Miss M J A	909	20	4 00
Howard & Lincoln, Tr	1015	50	10 00
Hoffman, August	1032	250	50 00
Ives, R O, Trustee	227	20	4 00
Jonasson, J	557	50	10 00
Kratzenstein, C	911	100	20 00
Koenig, A	954	65	13 00
Ludington, H Y	102	100	20 00
Lowenberg, S, Trustee	788	50	12 00
Lowenberg, S, Trustee	790	40	8 00
Livingston, J M, Trustee	954	50	10 00
Lincoln & Howard, Tr	1026	50	10 00
McDonald & Whitney, Tr	557	200	40 00
McDonald & Whitney, Tr	679	100	20 00
McDonald & Whitney, Tr	901	50	10 00
Mason, Thomas	798	50	10 00
Mason, Thomas	925	100	20 00
Martin, M S, Trustee	500	50	10 00
Martin, M S, Trustee	514	100	20 00
Martin, M S, Trustee	561	50	10 00
Martin, M S, Trustee	774	100	20 00
McDonald, M J, Trustee	870	2	40
McDonald, M J, Trustee	875	73	14 60
McDonald, M J, Trustee	878	100	20 00
McDonald, M J, Trustee	881	200	40 00
McDonald, M J, Trustee	989	100	20 00
McDonald, M J, Trustee	990	100	20 00
McDonald, M J, Trustee	991	100	20 00
McDonald, M J, Trustee	992	100	20 00
McDonald, M J, Trustee	993	100	20 00
McDonald, M J, Trustee	994	100	20 00
McDonald, M J, Trustee	995	100	20 00
McDonald, M J, Trustee	996	100	20 00
McDonald, M J, Trustee	997	100	20 00
McDonald, M J, Trustee	998	100	20 00
McDonald, M J, Trustee	999	100	20 00
Mitchell, S, Trustee	897	200	40 00
Meyers, A	948	115	23 20
McCullough, T J	1014	100	20 00
Neal, Chas S, Trustee	853	150	30 00
Norwood, W E, Trustee	873	100	20 00
Owens, T J, Trustee	1000	65	13 00
Page, Nathaniel	59	100	20 00
Page, Nathaniel	60	33	6 60
Peck, C S	979	300	50 00
Peck, C S	980	200	40 00
Rogers, R H	957	100	20 00
Richardson, E A, Trustee	902	100	20 00
Richardson, E A, Trustee	943	300	60 00
Richardson, E A, Trustee	971	50	10 00
Richardson, E A, Trustee	1001	500	100 00
Stevens, C, Trustee	26	100	20 00
Schmitt, B L, Trustee	877	100	20 00
Soren, Geo S, Trustee	921	50	10 00
Tibbey, E S, Trustee	393	1 (hal)	20
Tibbey, E S, Trustee	700	50	10 00
Thomson, M	1033	600	120 00
Uhler, J Clem, Trustee	639	100	20 00
Uhler, J Clem, Trustee	641	100	20 00
Williams, Henry, Trustee	609	50	10 00
Woods, F, Trustee	828	750	150 00
Woods & Freehorn, Tr	982	300	60 00
Woods & Freehorn, Tr	983	200	40 00
Woods & Freeborn, Tr	985	100	20 00
Woods & Freeborn, Tr	988	100	20 00

And in accordance with law, and an order of the Board of Trustees, made on the eleventh day of October, A. D. 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction at the office of the Company, on the fourth day of December, A. D., 1872, at the hour of one o'clock, P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising, and expenses of sale.

Office, Room 26, Hayward's Building, No. 419 California Street, San Francisco Cal. no 16-3t.

NOONDAY SILVER MINING COMPANY—POSTPONEMENT. The above sale is hereby postponed until Tuesday, the 10th day of December, 1872, at the same hour and place. By order of the Board of Trustees.

no30-2t CHAS. H. FISH, Secretary.

Norman Gold Mining Company—Location of works, Aqueduct Mining District, Amador County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said company, held on the 11th day of November, 1872, an assessment of five cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary, at the office of the company, Room 5 and 6, No. 302 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Thursday, the 12th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction and unless payment shall be made before, will be sold on Saturday, the 4th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

H. WATSON, Secretary.

Office, Room 5 and 6, No. 302 Montgomery street, San Francisco, Cal. no16

Old Providence Mill and Mining Company, Location of works, Hayden Hill Mining District, Lassen County, Cal.

No lee is hereby given, that at a meeting of the Board of Trustees of said company, held on the 5th day of November, 1872, an assessment of twenty-five cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin to the Secretary, at the office of the company, No. 415 Montgomery street, San Francisco. Any sock upon which said assessment shall remain unpaid on the 14th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 6th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

FRANK SWIFT, Secretary.

Office, 415 Montgomery street, San Francisco, Cal.

Piermont Milling and Mining Company—Location of works, Piermont Mining District, White Pine County, Nevada.

NOTICE is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 21st day of November, A. D., 1872, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary at the office of said Company. Any stock upon which said assessment shall remain unpaid on Monday, the 30th day of December, A. D., 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the 24th day of January, A. D., 1873, at the office of said Company, at the hour of 2 P. M., to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. W. CLARK, Secretary.

Office, 418 California street, San Francisco. n28-4t

San Francisco Co-operative Printing Company.—Location: 411 Clay and 412 Commercial Sts., San Francisco, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of the San Francisco Co-operative Printing Company, held on the 6th day of November, 1872, assessment No. 4, levied on the 17th day of September, 1872, of $12 per share, having been rescinded, on same day, an assessment of Five Dollars per share was levied on the Capital Stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, 412 Commercial street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Monday, the 9th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the 31st day of December, 1872, to pay the delinquent assessment, together with the cost of advertising and expenses of sale.

B. H. DALY, Secretary

Office 411 Clay St. and 412 Commercial St., San Francisco, Cal.

San Francisco Co-operative Land and Building Association.

Notice is hereby given that all installments due on shares in this association, are called in, and payment thereof is demanded. All shares delinquent at the expiration of thirty days from this date, will be advertised for sale. By order of the Board of Directors.

H. B. CONGDON, Secretary.

Office, 306 Montgomery street.

San Francisco, November 16, 1872. no16-4t.

State of Maine Mill and Mining Company. Location of works, Amador County, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment (No. 1) levied on the 17th day of October, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
S L Marks	12	240	12
S L Marks	21	500	25
L N Tower	28	100	5
H B Congdon, Trustee	40	500	25
Platte Burr, Trustee	41	1000	50
L N Tower	59	500	25
C E Hutchins	60	400	20

And in accordance with law, and an order of the Board of Trustees, made on the 17th day of October, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Secretary, No. 305 Montgomery street, San Francisco, Cal., on Monday, the 16th day of December, 1872, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

H. B. CONGDON, Secretary

Office, 305 Montgomery street, San Francisco, Cal.

The North San Francisco Homestead and Railroad Association. Location of property: City and County of San Francisco, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 5th day of Nov., 1872, an assessment of Three Dollars per share, was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, No. 314 California street, San Francisco, California. Any stock upon which said assessment shall remain unpaid, on the sixth day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the twenty-third day of December, 1872, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

A. D. SMITH, Secretary.

Office, 314 California street, San Francisco, Cal.

U. S. Grant Mining Company---Location of works, Carlisle, Nevada County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 19th day of November, 1872, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at his office, 226 Clay street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the 30th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 20th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

ENOS TAYLOR, Secretary.

Office, 226 Clay street, San Francisco, Cal. no23

NOTICE.

To the Stockholders of the Sutro Tunnel Company.

At a meeting of the Trustees of the Sutro Tunnel Company, held at the office of the Company, in the city of San Francisco, on the 12th day of November, 1872, the following resolution was adopted:

"Resolved, That it is the opinion of this Board that the capital stock of this Company should be increased up to Fifteen Million Dollars, and be divided into fifteen hundred thousand shares of the par value of ten dollars per share, and that a meeting of the stockholders be and is hereby called to take place at the office of the Company, in the city of San Francisco, at No. 321 California street, at 1 o'clock P. M. the Fourteenth day of December, 1872, to determine upon this proposition."

(Signed)

JOSEPH ARON,
CHAS. W. BRUSH,
EDWARD N. HOOPER,
IGNATZ STEINHART,
SOLOMON HEYDENFELDT,
Trustees.

PELHAM W. AMES, Secretary. no15-4t

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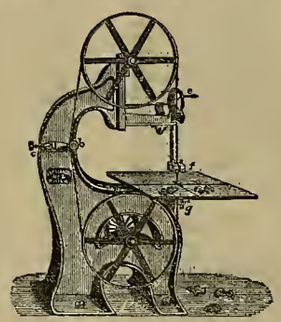

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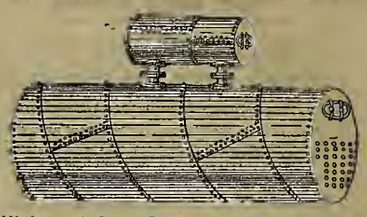

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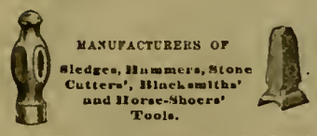

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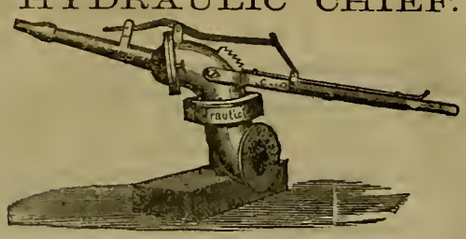

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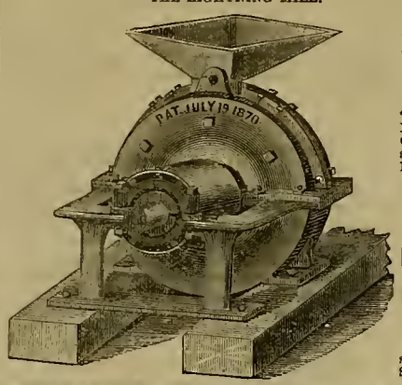

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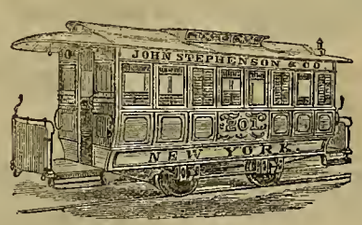

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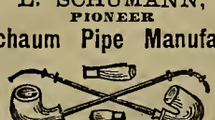

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Having just completed a good road to these quarries, we are prepared to furnish large or small orders for either dimension stone, or roble stone, in San Francisco, Oakland, or Brooklyn, at such prices as cannot be competed with, for equal quality of stone; for base and elevation walls, for public and private buildings, monuments, fence walls, coping, window caps and sills, doorway trimmings and steps, stepping stones, curbing for streets and sidewalks, pavements or streets and street-crossings, bases for gravestones and plain and ornamental work for cemeteries, etc.

We can furnish cellar and basement walls of roble stone of superior quality in San Francisco at about the cost of brick work for the same.

The gray freestone from these quarries is considered far superior to that of any other within practical distance of San Francisco. It is readily worked and imperishable.

For samples we refer to the first story of the City Hall, Oakland, erected four years since, and the window caps and sills, and other finished work in the Deaf and Dumb Asylum, Oakland; in the Oakland Cemetery around the lot of J. S. Emory. Also small specimens in the offices of Augustus Laver, (Architect of the S. F. City Hall) Kearny St.; David Farquharson, Architect, Cor. Kearney and California St., S. F.

Orders may be left with George W. Thompson, on the premises, or A. T. DEWEY, SCIENTIFIC PRESS office, No. 338 Montgomery St., S. F., where samples of the stone may be seen.

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For the reduction of ores, dry, to an impalpable powder or any given fineness, are made of any capacity—4, 6, 10, 20 or 50 tons per day. The reducing material is quartz from mine working upon coarsely-crushed ore from batteries or other machinery. No ore discharged for amalgamating that does not pass through wire cloth having eight thousand and one hundred holes to every square inch of surface.

The practicability of these barrels are established by the working of hundreds of tons of ore. Several are now building at the Miners' Foundry and can be seen by those interested. For particulars appy to

ALMARIN B. PAUL,
22v25 No. 218 California street, up staire.

PROPOSALS

For Material and Work

FOR A PORTION OF THE

New City Hall Building.

OFFICE OF BOARD OF CITY HALL COMMISSIONERS,
SAN FRANCISCO, November 25, 1871.

SEALED PROPOSALS FOR FURNISHING CERtain material for a portion of the New City Hall Building and Hall of Records and for the construction thereof, will be received at the office of the Board of City Hall Commissioners, corner of McAllister and Leavenworth streets, until 12 o'clock M. of FRIDAY, the 27th day of December, A. D. 1872, except for Iron Works, and for that, until 12 o'clock M. of FRIDAY, the 24th day of January, A. D. 1873, viz:

10,000,000 Brick;
5,000 Barrels Lime;
5,000 Barrels Cement;
Stone for Facing of Basement Story and Building the same in the Walls, etc;
Rolled Iron Joists;
Iron Girders and Columns;
Building Brick in the Walls, etc., including Bonding, Anchors, etc;
Building Brick Facing of Basement Story;
Fixing, Fitting and Laying Iron Joists and Girders.

All according to the Printed Specifications, Schedule, etc., and Plans and Drawings.

The Printed Specifications and Printed Forms of Proposals can be had on application to the Secretary, and the Plans and Drawings can be seen, and all further information—as to the details of the work, etc.—can be obtained from the Architect, at the office of the Board.

The Bids must be endorsed for the Material proposed to be furnished or Work done, and addressed to the Secretary of the Board.

No Bids will be entertained unless made on the specified "Printed Forms of Proposal," and accompanied by a certified check, or bond with two good and sufficient sureties, in a sum equal to 10 per cent. of the total sum of the tender, to be returned on the due entering into the contract of the party to whom it may be awarded, or to be forfeited, if the party fail to enter into the said contract.

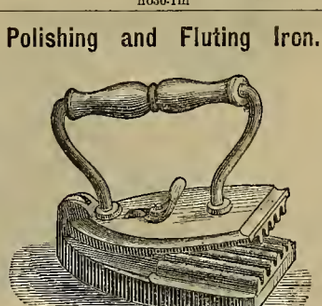
Each bidder for Brick will state what quantity he will furnish within one year, and at what times he will deliver them. Samples must accompany each bid.

The Board reserve the right to reject any or all bids.

Payments will be made monthly in "City Hall Warrants," of 75 per cent. of estimated amounts due, and the remaining 25 per cent. when the contract is completed.

P. H. CANAVAN,
JOS. G. EASTLAND,
CHAS. E. McLANE,
Board of City Hall Commissioners.
no30-1m

Polishing and Fluting Iron.



This new invention takes the place of two articles needed in nearly every house. As a POLISHING IRON it has no superior. The part used for Fluting is made of brass, and highly polished. The Polishing Iron and Fluter, being in one, are both heated at the same time.

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CASTINGS,
Church and Steamboat Bells,
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☞ Highest Market Price paid for OLD BELLS, COPPER and BRASS. 6-tf

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N. W. SPAULDING,

Saw Smithing and Repairing ESTABLISHMENT.

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MANUFACTURER OF
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Patent Tooth Circular Saws.

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Each Saw is Warranted in every respect.

Particular attention paid to construction of
Portable & Stationary Saw Mills.

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At the lowest Market Prices.

C. P. R. R.

COMMENCING
Monday, October 7th, 1872.
And until further notice, Trains and Boats will
LEAVE SAN FRANCISCO.

7.00 A. M. (Daily). Atlantic Express Train (via Oakland) for Sacramento, Marysville, Redding, and Portland, O. Coffax, Reno, Ogden and Omaha.

7.15 A. M. (Daily). Oal. P. R. R. Steamer (from Broadway Wharf)—Connecting at Vallejo with Trains for Callistoga, Knight's Landing and Sacramento; making close connection at Napa with stages for Sonoma.

2.00 P. M. (Sundays excepted). S. F. & N. P. R. R. Steamer (from Broadway Wharf), connecting at Donahue with Trains for Cloverdale. Making close connection at Lakeville with stages for Sonoma.

2.00 P. M. (Sundays excepted). Stocktou Steamer (from Broadway Wharf), touching at Vallejo, Benicia, and Landings on the San Joaquin river.

3.00 P. M. (Daily). San Jose Passenger Train (via Oakland), stopping at all way Stations.

4.00 P. M. (Sundays excepted). Passenger Train (via Oakland) for Lathrop, Merced, Visalia, Tipion, and Los Angeles, Stockton and Sacramento.

4.00 P. M. (Sundays excepted). Cal. P. R. R. Steamer (from Broadway Wharf) connecting at Vallejo with Trains for Callstoga, Knight's Landing and Sacramento.

4.00 P. M. (Sundays excepted). Sacramento Steamer (from Broadway Wharf), touching at Benicia, and Landings on the Sacramento river.

6.30 P. M. (Daily). Overland Emigrant Train (via Oakland)—Through Freight and Accommodation.

OAKLAND BRANCH.—LEAVE SAN FRANCISCO, 7 00, 8 10, 9 20, 10 10 and 11 20 a. m., 12 00, 1 50, 3 00, 4 00, 5 15, 6 30, 8 9 20 and *11 30 p. m. (9 20, 11 20 and 3 00 to Oakland only).

LEAVE BROOKLYN (for San Francisco), *5 30, 6 40, 7 50, 9 00 and 11 00 a. m., 1 30, 2 40, 4 55, 6 10, 7 55 and 10 10 p. m.

LEAVE OAKLAND, *5 40, 6 50, 8 00, 9 10, 10 00, and 11 10 a. m., 12 00, 1 40, 2 50, 3 50, 5 05, 6 20, 8 05 and 10 20 p. m.

ALAMEDA BRANCH.—LEAVE SAN FRANCISCO, 7 20, and 11 15 a. m., 1 30, 4 00, 5 30, and 7 00 p. m. (7 20, 11 5 30 to Fruit Vale only).

LEAVE HAYWARDS (for San Francisco), *3 45, 7 00 and 10 a. m., and 3 30 p. m.

LEAVE FRUIT VALE, *4 40, 7 35, 9 00 and 11 20 a. m., 1 30 4 05 and 5 30 p. m. *Except Sundays.

T. H. GOODMAN, Gen'l Pass'gr and Ticket Agt. **A. N. TOWNE,** Gen'l Supt.

J. S. PHILLIPS, M. E.,

Examiner of Mines, Consulting Engineer,
MINERAL ASSAYER AND METALLURGIST,
423 Washington Street, San Francisco.

Assaying Taught.

Author of the "Explorers', Miners' and Metallurgists' Companion." (The very Comprehensive Work of 639 pages and 81 Illustrations.

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MINING AND SCIENTIFIC PRESS.

An Illustrated Journal of Mining, Popular Science and Progressive Industry.

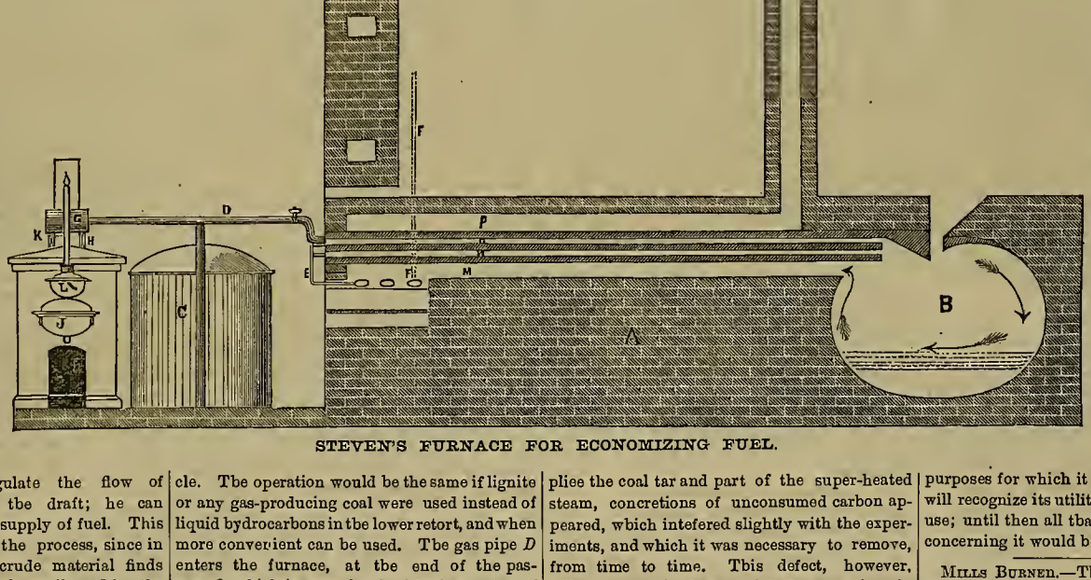
BY DEWEY & CO., Patent Solicitors.

SAN FRANCISCO, SATURDAY, DECEMBER 7, 1872.

VOLUME XXV. Number 23.

Important Invention—a New Furnace for Economizing Fuel.

Tbere is now in operation at Garratt's Brass Foundry on Fremont street, an improved furnace which, if it proves all tbat it promises will, witbout doubt, revolutionize our present method of generatiug steam, working iron, smelting ores, etc. Tbis furnace has recently beeu introduced on this Coast by Mr. Levi Stevens, the iuventor, who, with many wbo have seen it in operation, is very sanguine tbat he will be able to do away with tbe use of cbarcoal etc. as fuel in our smelting operations, and coal in working iron. A sectional view of the furnace is shown in the accompanying cut, although differing, materially, from tbe one now running in this city. The one we saw iu operation consists simply of a heating chamber with its inlet and outlet for tbe gases in close proximity; from the rear end a pipe passes tbrough to the beating chamber, which conveys tbe oil or other substance, wbich feeds the fire, from a receptacle placed on top of the furnace. A jet of snperheated steam forces this coal tar (in this instance) into the chamber, where it is instantaneously converted into flame. Snperbested steam is also forced in from the rear end of the chamber to aid in tbe combustion, and the fire is entirely nnder the control of the operator from his being able to regulate the flow of steam and consequently tbe draft; he can also of course control the supply of fuel. This is, however, only half of the process, since in tbe complete furnace no crude material finds its way to the fire, the coal or oil used in the process being retorted and only the vapors used as gas.



STEVEN'S FURNACE FOR ECONOMIZING FUEL.

By reference to the cut the reader may see the plan of operation. *A*, represents the body of the furnace and *B*, the chamber, whicb is circular in vertical section, with its top slightly flattened. This chamber, whicb is heated by gases produced according to tbe processes hereinafter described, has its opening for the inlet of gases at one end, and its outlet for the waste products of combustion in close proximity thereto, and slightly above the inlet as shown, so that the gas and flame, before escaping from the chamber, is caused to pass entirely around the chamber as indicated by the arrows, thus creating a reverberatory action of tbe flame and producing an inteuse heat in tbe chamber *B*, the gas or flame thereafter escaping up tbrough the flue. A sbaft with projections somewhat after the manner of the Stetefeldt furnace is employed for ores. The chamber is provided witb the usual doors or openings for drawing off metal, etc.

To geuerate the gas to be used for heating tbe furnace an ordinary furnace is provided, over which is placed a compound retort consisting of two retorts, *I* and *L*, located one above tbe other and connected at or near their rear end by a passage or opening. The upper retort is conected by a pipe with an bydraulic main or trap *G*, from which a pipe *D* extends to the furnace *A* and enters it at one side, as hereinafter described. A gasometer *C* is also provided, and connected by a branch pipe, as shown, witb the main pipe *D*, this being for the purpose of receiving and holding any surplus of gas tbat may be generated, aud insuring a steady snpply of gas to the furnace.

A steam pipe *E* is arranged in the furnace at tbe rear end connecting with a superheater for superheating steam. This is heated by the fire from the furnace and tbe steam is taken from a boiler at any distance from tbe furnace, but not shown in the drawing. Tbe lower retort *J* is supplied with petroleum or any suitable carbon, and the upper retort is merely a receptacle. The operation would be the same if lignite or any gas-producing coal were used instead of liquid bydrocarbons in tbe lower retort, and when more convenient can be used. Tbe gas pipe *D* enters the furnace, at tbe end of the passage *O*, whicb is on a level with the center of the furnace *B;* so it will be seen that the flame of burning gas is deflected at an angle on the material in the furnace and from thence passes on around and up the opposite wall as tbe arrows indicate.

By this metbod of introducing the gas into the fire chamber B, it is caused to circulate entirely around it, and keep up a continuous reverberatory motion until it finally escapes therefrom, thus heating all parts of the cbamber equally, in the manner of a reverberatory furnace. In the formation of protoxide of carbon by a union of the oxygen of tbe steam witb tbe carbon of the bydrocarbons employed, as is done by this process it is necessary that the steam ehall be heated to a temperature equal to that required to convert the hydro-carbon or carbonaceous matter used, into a vapor or gaseous form. The heat generated by the gas produced by the nnion of tbe superheated steam with vapors, or gas produced by tbe distillation of hydro-carbons or carbonaceous matter is very intense, and would be admirably adapted to tbe chloridizing, desulpburizing, reducing and smelting of oree. The super-beated steam coming in contact with the carbon vapor under pressure, combines with it, and forms the highly combustible gas that produces the requisite heat.

Tbe advantages claimed for this invention are the utilization of the large bituminous deposits of the country, such as asphaltum, shale oil, etc.; to furnisb a flame that will desulphurize and reduce ores, where other forms of fuel are scarce and expensive; to furnish a flame tbat when used in smelting ordinary iron ores will completely desulpburize, carbonize, and convert it into steel at one process, and produce a cheap beat for generating steam.

All attempts to utilize asphaltum as fuel have heretofore failed, on account of tbe imperfect combustiou of the carbon, but Mr. Stevens claims tbat the whole of tbe carbon is consumed in tbis case. The small furnace in operation at Garrat's is rather defective in this, since at the end of the pipe which supplies the coal tar and part of the super-heated steam, concretions of unconsumed carbon appeared, which intefered slightly with the experiments, and which it was necessary to remove, from time to time. Tbis defect, however, will not occur in tbe complete furnace, siuce in that only the vapor of tbe hydro-carbon is used. In this particular furnace coal tar is used from which so much of tbe hydrocarbon has been vaporized as to render tbe full utilization of all the carbon impossible. Tbe furnace now iu operation is fed by a pipe, running from the receptacle or tank, to the fire chamber, and at the end of this pipe the superheated steam and tbe oil come togetber in a peculiarly formed chamber, where the superbeated steam forces the hydro-carbon against a deflector, where the heat and fire togetber completely atomize it; tbe superheated steam and particles of hydrocarbon combine and form carbonic oxide—an intensely inflammable gas. At tbe extreme rear end of tbe passage, a pipe witb a number of jets is placed from which a larger quantity of superheated steam is ejected into the furnace.

A complete furnace constructed in the same manner as tbat shown in our cut is being erected in tbis city for smelting purposes, which will be submitted to a crucial test. Tbere is no doubt that if it works as well practically as it appeare to, that it will be of vast advantage to this coaet in particular. We have in many of our mining dietricts immense deposits of emelting ores, wbich can not be made available by processes now iu vogue, but whicb wbeu tbe price of fuel is reduced, cculd be utilized to advantage. We have extensive deposits of asphaltum, whicb are practically inexbaustable, and which can be procured at comparatively little expense. Tbe iron sands of tbe northern coast could also be msde available and another prodnct added to our material resources. Our great want on this coast is cbeap iron, and it is affirmed tbat tbe "black sands" contain a very large proportion of magnetic iron, which only expense of fuel has bitherto prevented from being extracted.

We believe Mr. Stevens is on tbe right track, and only patience and perseverence are required to develop his invention and bring its merits practically before tbe publio, when his reward will be certain. If this furnace succeeds, tbe long mooted question of cheap fnel for steamships is partially solved. It must be tested practically for that of course as for other purposes. Theoretically tbere seems to be no apparent drawback, but tbe world is proverbially prejudiced against untried pieces of mechanism or processes, nor will popular opinion express itself in favor of anything until the proofs of its value, economy, or usefulness, are enforced upon us by the fact that it has stood the test of time and practical trial. When Mr. Stevene is able to erect a furnace which shall show the *whole* of his process, and its perfect adaptability to the purposes for which it is constructed, the public will recognize its utility and take it with general use; until then all tbat we could say *theoretically* concerning it would be of no avail.

Mills Burned.—Tbe Sebastapol, 12-stamp mill, better known as Ben. McCauley's, at Boston Ravine, was, according to tbe Grass Valley *Union*, burned down recently. The property was worth about $15,000, on which tbere was an insurance of $10,000.

The Oregon City Woolen Mills, at Oregon City, were burned on the morning of the 23d ult. Loss $150,000; insured for $80,000. The annual consumption of wool amounted to 500,000 pounds and the mills had gained a celebrity in the excellence of its mannfactnres.

The Horse Disease.—Tbere are rumors to the effect, that a disease similar to the one so prevalent at the East, but of a milder type, has made its appearance among the horses of this city; but we doubt its presence here, as after careful inquiry we can find nothing tbat appears any nearer to tbe real malady, tban severe colds and some fever in a few instances. Owners of horses cannot be too carefnl in exposing their horses to cold and sudden changes, and to the close, impure air of too many of our city stables.

Precautions against Fire.—The Municipal authorities of San Francisco have ordered 20,000 feet of carbolized hose, and two new enginee for the use of the Fire Department. Tbe engines are to be of the Amoekeag pattern, one of them with a self-propelling attachment.

Mineral Resources of Northwestern California.

We condensa as follows from an intercsting letter by a correspondent of the *Bulletin:*

A trip recently mads across tbe northwestern portions of tbe State, leading through Trinity, Del Norte, Klamath, Humboldt and Mendocino counties, gave opportunity for seeing much of a region the natural wealth and other attractions of which must soon bring it into more general notice and draw thither multitudes seeking profitable employment and permanent homes. Remots and hard to approach, it has heretofore remained the least known and densely settled of any section in California; its population sparse, wide-spread and strangely made up, consisting mostly of miners and Indians at the north, and of lumbermen and a nondescript race, half hunter and half stock grower, inhabiting the belt lying between the Coast Range and the sea.

In classifying these people with reference to their progress in enlightenment, the miner and lumherman fall into one catalogue, the Indian and the back settler into another, with a moral shade in favor of the aborigine! the fact being tbat to anything like an advanced civilization much of this region remains still virgin. Yet it has the capabilities for making a grand country; and with a railroad approaching it on either hand must soon attract to it a more numerous and thrifty class of settlers. Already capitalists are beginning to look after the mines at the north, while herdsmen are driving in their flocks to feed on the oat and clover covered hills near the coast. There is not a finer grazing or grain-growing district, than some portions of Humboldt and Mendocino, in all California, while for lumber there is not ánother such a country lying under the sun. In the matter of climate, too, this northwestern corner has some advantages over every other part of the State, being favored with more abundant and timely rains, with a moderate summer heat aud mild snowless winters, except on the mouutains. Already the rain had set in there and fallen copiously two weeks ago.

The Mines and the Railroads.

As is well known, a vast extent of gold placers have long been worked and are still paying well, in some of these northern counties; the business, through the aid of ditches, having for the last year or two been on the increase. There are also thousands of rich quartz lodes there, the development of which is now being actively entered upon, the natural facilities for working this class of mines being unsurpassed. As yet there is a lack of wagon roads for conveying heavy machinery; but these, to the extent required, can be easily supplied, while the railroad up the Sacramento valley, which is to cross the eastern border of this region, will put it within easy communication with San Francisco. Already this road is completed with the care running to Reading, whence there are but about fifty miles of staging to Weaverville, an important mining centre. The mineral resources of this region are not, however confined to the precious metals; the useful, some of them in great quautity, being found as well.

Cinnabar and Copper.

Near Trinity Centre, forty miles northeast of Weaverville, on a high ridge, between the forks of Trinity river, is a tract, nearly one mile long and a quarter of a mile wide, abounding in a wonderful manner with small veins and fragments of cinnabar. The formation here is a sandstone covered with a clayey soil, through which these veins and stringers run in every direction. On the decomposition of tbe latter, through exposnre to tbe elements, their remains have been carried away and scattered throughout the surface earth, a large proportion having afterwards been deposited by the action of water in the adjacent ravines. Scarcely a pau of this top soil, taken up at random, fsils to show some, and very often a large prospect of ore. To a depth of several feet it would probably yield one per cent. of cinnabar.. Dirt gathered from the gulches often yields from one to three pounds of ore that will retort seventy or eighty per cent. of quicksilver. Many of these stringers are also astonishingly rich in metal; and should they be found to gather up iuto a main vein, as they most likely will, we may expect here such a deposit of cinnabar as, properly managed, might be made a very formidable antagonist to the monopoly that has so long oppressed the mining interest of the country, if it did not break it up altogether.

Certainly, no such promising surface indications of cinnahar have ever before been found on the coast; nor have explorations here been altogether confined to the surface, a number of ebafte having been sunk on theee stringers to a deptb of 18 or 20 feet, showing always an increase in their volume and richness. This fact tends to establish their permanence, and that they are really offshoots, or feeders, of a ceutral vein eomewhere in the neighborhood seems probahle. The owners of this tract, a wealthy and enterprising Sau Fraucisco company, will prospect it thoroughly; and if meeting with the encouragement expected, will proceed to erect works for the reduction of the ores on the ground, to which end there is every facility—a sufficiency of water for furnace use close by, and enough within a mile or two to drive any amount of machinery, while the country about is covered with magnificent forests.

Large quautities of this cinnahar, owing to its high grade and mode of occurrence, could be disposed of in ite crude state, being in demand for the China market, where it is seut to be manufactured into a pigment much used and greatly esteemed by that people. Dealers in San Francisco pay 40 cents a pound for 70 per cent. ore, of which a great deal could be gathered here by sluicing the dirt as in gold washing. This method of collecting the ore could for some time, and until the richer deposits and surfaces earth were disposed of, be carrisd on with large profit, it being estimated that each man set to work could, while the water season lasted, earn from $30 to $50 daily.

The present owners havs secnred a good title to the whole of this tract, having bought out the original locators who made the discovery by the float ore met with in the ravines where they wers mining, over a year ago. The California and Oregon railroad will in the course of a few months he completed to a point opposite and distant not more than ten or fifteeu miles from this spot, affording chesp transportation to and from San Francisco. That this is a property of considerable valne seems probable; it has, at all events been prononnced such by a capable expert recently sent to examine and report upon it.

Running near this cinnabar bed is a copper-bearing belt carrying a good many fine looking lodes, on some of which a large amount of work was done at the time of the copper excitement several years ago. A number of lengthy tunnels have been rnn here, opening up fine bodies of ore; and should present prices of copper be maintained, work on these mines will no doubt be resumed at an early day, as the ores could he cheaply reduced on the ground or shipped away for a market.

At Low Divide, 18 miles north of Crescent City, a locality visited in the course of my journey, there are also some valuable copper mines, from some of which a considerable quantity of ore was taken and shipped to San Francisco at the period above alluded to. The ore here is of the gray variety and of good grade, the bulk of it assaying from 18 to 20 per cent. in metal. The lodes are mostly large and well formed. The Union, the most extensively opened, carries, at a depth of 300 feet, a three-foot stratum of solid ore. Here, too, there is timber and water in the greatest abnndance, with a good wagon road to Crescent City, affording advantages for working the ore at the mines or sending elsewhere to market.

From Weaverville to Hoopah Valley.

Having gone out of the way to see this network of veins and the curious feature of a cinnabar placer, I came down to Weaverville and struck out for Klamatb Bluffs, 120 miles away, following the sinuosities of the streams and mountain trails. At Weaver there is an end of staging, the journey beyond being made on borsehack and canoe, there being some stretches of the Trinity and Klamath rivers navigable by that sort of craft. The country to be traversed is an almost continuous succession of rugged mountains and deep ravines, the former crowding upon the rivere at many points so closely that the traveler is forced to pass over them. Tbe journey is fatiguing and not everywhere unattended with danger, the path in some places ascending for thousands of feet up the precipitous sides of the mouutains, and so narrow that the rider must dismount and lead his animal cautiously along, as a single misstep might hurl both to destruction. There is a wealth of timber on these mountains, but the trees, though gigantic, do not stsnd eo thick as in the redwood forests near tbe coast, where they often crowd each other so close that they can grow no more, unless it he upward. In these woods deer and bear abound, as many as fifteen or twenty of the former ofteu being seen in a herd. The streams also afford good angling, being at all times full of mountain trout and salmou.

Mining on the Klamath.

About 40 miles below the Klamath Falls, I visited the theatre of an important mining enterprise, also in the hands of San Francisco operators. At this point the river—owing to the occurrence of a slide—has been forced from its ancient channel, leaving an immense deposit of auriferous gravel occupying its former bed. As much of this gravel having been worked off by hydraulic washing as was practicable, without the means of ridding it of water, the property lately passed into the hands of men of large means, residing in this city, wbo are about eupplying the requisite pumping apparatus, with a view to working out the lower stratum of gravel, which is known to be immensely rich and very extensive, this bed being fully a half mile wide and over a mile long. The river supplies power for driving the pumps, a ditch, already constructed, briuging in water from a mountain stream, four miles distant, for washing purposes. This enterprise will soon be under way, and great results are anticipatcd from the working of the remaining portions of this bar. The gravel here is free from large boulders, and so loose that it can be easily broken down and disposed of. While many other large hare on the Klamath, both above aud helow this point, are being worked by hydraulics, a still greater number are wholly neglected, there being here many good opportunities, for parties having the necessary meane, to engage in this branch of mining.

Origin of Gold Bluff and the Adjacent Beaches.

Starting from the eouth side of Klamath at a point 15 miles from the ocean is a deep depression extending thence and terminating in Gold Bluff, situate 12 miles eouth of the river's mouth. Through this depression the Klamath once flowed, ite waters having been obstructed by the debris brought down by some great flood and forced to find a paseage to the sea through their preseut channel. Gold Bluff is nothing but ths accumulations of auriferous gravel dsposited by this ancient rivsr, largely increased, most likely by this flood. The promontory tbus formed, having afterwards been washed away by ths surf, lsft the present Gold Bluff. The auriferons beaches to the north and south ars mads up of the portions swspt away and cast up at the particular points by the eddies of the sea. What this is, the origin of the original Gold Bluff is svident enough; tbe discovery of this old river bed furnishing a key to what had so long remained a mystery.

San Bernardino County Mines.

A corrsspondent of the *Alta* writes as follows concerning the mineral resources of the country around San Bernardiuo, especially in the direction of Ncvada, which he says have been unaccountably neglected. Rich specimens of ores, containing silver, copper and lead, are constantly being brought in from the range of mountaine east of the town, and there the matter rests. Lsst week several rich copper and silver ledges were discovered by a party of prospectors only sixty miles from town. Tbey mean business and more will he heard from them soon.

The prospecting spirit seems to have been only just awakened, notwithstanding the San Jacinto tin mines, on the southwest, the Abadie placer (bydraulic mine, yielding $100,000 last year) at Lytle Creek, eight miles to the northwest, and the rich districts of Ivanpah, Clark, New York and others, to the east, have been staring experience in the face for years.

A lone hill in tbe plain, about nine miles from San Bernardino, has been prospected and pronounced a mountain of tin, within the last week.

There is room for mining enterprise here snd profits are almost sure to the explorer. Between San Bernardino and Salt Lake the inducements to prospect and invest capital are very flatteriug at present, and the public need not be eurprised at any time to hear of uew wonders.

It cannot be so far in the dark future that the observer should fail to see the destiny of San Bernardino. It is the key to an immense county and will soon be connected witb San Francisco, San Diego, Los Angeles and Arizona, and possibly with Salt Lake. It has beeu so far out of the way of travel and so isolated that its resources have never been well known to the public. With the exception of those wbo have hurried through the valley on their way to Northern Arizona, or on their return, very few outside the county know anytbing about it.

When these things change—as they surely will—and a tide of emigration pours in, there will be this advantage: in San Bernardino they will find a population already living tbat asks no odds of fortune, and that is as independent as any in the world.

Indian Relics and Remains. — Lately, two young boys, William and Hiram, sons of B. R. Holliday, wbo reside in the Franklin cañon, about 2½ milee from Martinez, observed in the bank of the creek, which had been much washed hy the heavy flow of water last winter, tbe rounded surface of a dark, polished stone, wbich they made an effort to remove, but found so fast imbedded that they resorted to the use of their knives, and, after much digging, got it out, and fonnd it to be an Indian pestle of perfect form, smoothness and polish, and some ten or eleven inches long and three or four in diameter, two-thirds of the length, and diminishing one-third of the length to a blunt, rounded point. In extracting tbe pestle, the boys found that it was covered by and extended into the cavity of a large, round boulder, which was found, on excavation, to be an Indian mortar, having a perfectly hollowed howl, some six inches deep and seven or eight in diameter. The mortar, though not measnred, must be nearly or quite sixty inches in circumference, and weighs in the neighborhood of 200 pounds. It has the form of a sligbtly-flattened, well-rounded duck egg; and has evidently been artificially shaped in exterior form, as well as in the bowl, and looks as fresh as if it had but yesterday been turned off from the Indian sculptor's hands, while the polish of the pestle is smooth and lustrous as if it had been in daily use for the hundred or two years, at least, that it must have been lying under the inverted mortar, as shown by the level of five-feet accumulations of the valley-surface stratum of soil above the yellow clay upon which it was found, together with the partially-decomposed remains of a human frame, portions of which, consisting of the skull, thigh, hip, finger and other bones, Mr. Holliday brought into town with the stone relics on Tuesday last.—*Contra Costa Gazette.*

New Mining Operation.—We are glad to be able to chronicle the inauguration of a new mining enterprise in this vicinity upon an extensive scale. Messre. Simpson & Hoffman, a couple of gentlemen recently from Inyo county where they have been largely interested in mining operations for several years past, have purchased a number of claims on Tunnel ridge and will consolidate them in one mammoth hydraulic. Work has already been commenced, and it is contemplated that everything will be in readiness to commence washing by the time the rains set in. It is the intention of Messrs. Simpeon & Hoffman to use a very large amount of water, and they are making preparations for an active "campaign" dnring the winter. Their hydraulic will be among the best appointed aud most extensive in the county.—*Calaveras Chronicle, 22d.*

Quicksilver Deposits—Are There any in Nevada?

We have been informed, says the *Territorial Enterprise,* that a gentleman in Flowsry has ssen in the hands of an Indian a fine looking specimsn of cinnabar, weighing, probably, four or five pounds. Ths Indian said he picked it up in the low hills skirting the west side of the desert, and intimated that more of the ore could he found in the same locality. Through some oversight the Indian was allowed to depart with his specimen, and has not since been seen by tbe gentleman to whom the ore was exhibited. It is to be regretted that the Indian was not induced to accompany some one to the spot where the specimen was found. The news of the discovery of a cinnabar vein in this State would be most gratifying intelligence to tbe mine and mill owners. An enormous quantity of quicksilver is consnmed in Nevada, and the price (ninety cents per pound, we believe) very materially augments the cost of reducing our gold and silver ores. We are supplied from the New Idria and New Almsden miuee of California, which contribute within a fraction of the entire quicksilver yield of the coast, or of the United States, for that matter. Cinnabar mines are very sparsely distributed over the face of the earth. Small deposits of uo real value are frequently found, but nineteen-twentietbs of all the quicksilver produced must be credited to less than a dozen minee.

Next to the Almaden mine of Spain, the New Almaden of California, is the largest producer. The annual quicksilver yield of the world is estimated at 7,000,000 ponnds, one-third of which is the product of the New Almaden and New Idria mines of California. The opening of these mines very materially affected the price of quicksilver for some years; but lately the price hae been advanced, and unless the market be relieved by new discoveries, there is no telling what we may be compelled to pay for quicksilver before the end of another decade. Our orcs cannot be reduced without quicksilver, and unless a substitute be found for it, which is not probable, it will soon form a leading item of expense in the workiug of our mines. The consumption of quicksilver is increasing rapidly—especially in California and Nevada, where new gold and silver miues are being opened almost daily. The increased demand for it, without an adequate increase in prodnction is one of the causes of the advance in the price of quicksilver. Another cause was the formation, not long since, of a gigantic quicksilver "ring," of which tbe Rothschilds are controlling members.

The leading minee of Europe are the Almaden and Idria, both of which are under lease to the Rothschilds. In fact, it has been stated that the Idria and other mines in Austria have been mortgaged to the Rothschilde by the Austrian Government. Certain it is that the most of tbe qnicksilver product of the world is monopolized hy a few companiee acting in concert in the regulation of tbe price, market and annual product. The aggregate yield could be increased fifty per cent. without difficulty; but the annual product of each mine has been agreed upon, and fixed at figures which will leave the market continually hare, and compel the payment of just snch prices as may he demanded. The qnicksilver "Ring" is complete, and our only bope is in new discoveries in California and Nevada. Many small deposits of cinnabar have been found in California, but thus far their product hae amounted to little or nothing. One of the most promising of these discoveries ie on Squaw Creek, in Sonoma county. The mine has recently been purchased by a San Francisco company for $30,000, and measuree for its thorongh development will be taken at ouce. Tbe deposit is believed to be both rich and extensive, and several other mines, it is thought, will be opened in the same locality. We started to speak merely of the possible existence of cinnabar minee in Nevada, aud have been led somewhat from the subject. In view of the immense value of cinnahar depoeits capable of producing quicksilver in paying quantities, and of the fact that specimens of cinnabar have frequently been found in this State, we would suggest that some attention by prospectors be paid to cinnabar as well as gold and silver.

Nevada and Arizona.—Some of the leading operators in the Comstock have concluded to inveet small sums in the rich mining regions of Arizona, aud to that eud are making up a company to back Forey Gregory. The organization is to be known as the "Virginia and Gold Hill Mining Company," and is to be compoeed of ten membere (including Gregory), each of whom subecribe an equal amonnt toward defraying the expenses of the trip. Forey Gregory is a practical miner, an old prospector, a courageous and venturesome mountaineer, and has explored Arizona from Ehrenberg to Verdi, from Granite District to Vickenberg, from the Black Hille to Walnut Grove, and from Wallapa to Weaver Hill. He is familiar with every road, stream, mountain range, pass and Indian trail in the Territory, and, going there full of life, ambition and energy, and with the money to enable him to prospect to advantage, we doubt not the gentlemen who have invested in the enterpise will ultimately find it to be the best investment they have ever made in mining operatione. It ie the intention of the company, through their agent, to locate agricultural and timber lands, water privileges, etc., as well as mining ground.—*Virginia Chronicle.*

MECHANICAL PROGRESS.

Testing Steam-Boilers — An Excellent Suggestion.

The boiler in which is generated and the engine in which is utilized the great motor, steam, are undoubtedly the most important inventions yet discovered. and it is not too much to say, perhaps, that in perfecting them more careful study and investigation have been brought to bear than upon any mechanical subject. Of late, steam-boilers have been the especial object of a class of inventors, some of whom differ widely from others in their views and applications of the principles involved. We have seen one inventor claim as an especial advantage in his boiler the doing of what another claimed as the special merit of his to prevent. Of the business men who have occasion to purchase and use boilers, comparatively few have the time, or inclination, or technical education necessary for correct judgment upon the subject. Hence, while the conflicting views and construction of boilers cannot all be right, they all have their patrons and advocates. It is of the first importence to determine as accurately as it is possible to do the relative merits of all the different syetems. Theorize as accurately as we may, there is still a large margin of uncertainty which can only be made certainty by experiment. Which is the most convenient, the most durable, the most economical, and above all the safest boiler, is a question in which every individuel is more or less directly interested. A communication published in another column, from a gentleman who has given much attention to this subject, contains suggestione which we heartily indorse.

He proposes that those directly interested in steam motive power in thie city and vicinity be requested to subscribe to a fund, for which the American Institute shall also appropriate a sum of money, which fund shall he used under the direction of the Institute in making prolonged and exhaustive tests of the different systems of boilers, and that the results of the investigation be carefully and candidly published for the information of those interested. The character of the American Institute ehonld be pledged to the impartial and candid treatment of the matter, and the benefit to be derived would a thousand-fold repay the trouble and expeuee. The proposition shonld find favor at once.—*American Artisan.*

Recording Sounds, Etc.

Few people are probably aware of the extreme difficulty in keeping a *correct* count by the eye or ear of repidly repeated blows, even when they are eupposed to be fully within the reach of our power to thus record them in the mind. We ere often widely at variance from the truth, when we are fully persuaded in our own minds that we are correct. Ae an instence of this fact Mr. Coleman Sellers, recently having occasion to count the blowe of a rapid etrikiug eteam hammer, which was thought to be making three hundred blows per minute, three careful observere, conuting the blowe at the same time, made a variation of from 275 to 325 in the eame count. Believing that such obeervation could not be relied upon, he connected a recording telegraph instrument to the machine, placing two keys in the circuit. One key wes closed by each blow of the hemmer, a wire from it being attached to a rock shaft in the velve motions; the other key to be closed by hend. When the hand key wes cloeed, dots were recorded on the paper ribbon, one dot to each blow of the hammer; and by keeping the hand key closed any definite time, e row of dots, equivalent to the number of etrikes in thet time, were recorded, which dots could be counted afterwards at leisure. Many experiments were tried with this epparatns attached, and, as a rule, it wes found that moet persons who ettempted to count when the speed wee neer 300 blowe per minnte, over counted rather then under counted. Very seldom did the count of any observer tally with the count of the instrument.

NEW METHOD OF STOPPING LEAKS.—An ingenioue method of stopping leeks in iron ehips when at eee has been patented in England by Mr. McCool, who effects his object by means of what he calle "safety-pletes." These pletes are, as artisans eay, "dished"—thet is, they resemble a dish in ehape; consequently, when the hollow side ie pressed egainst the platee of a ship, the "safety-plate" fits closely, and will keep water out when held firmly in place with ecrews. By a clever contrivance, when once the leak ie dscovered, means can at once be teken for fitting on the new plate. A weighted line ie dropped through the hole; this is laid hold of by lines drawn under the ship, the weight is taken off and replaced by a screw bolt; a plate, with India-rubber covering the inner edges, is next screwed to the bolt, dropped overboard and drawn into position by the line hanging through the leak; an inner plate is then ecrewed to the inner end of the bolt; and thus the leek is completely covered on the inside and on the outside, and the water is kept out. That this means of safety can be made uee of in the open sea, and under different circumstances, without the necessity of docking the ship, is not the least among its recommendations.

American versus Foreign Leather Belting.

By far the larger proportion of belts are made in the United States, which are conceded by the best judges to be superior to those made in any other country in the world, those of English manufacture not excepted.

The fact was well demonstrated by a practical proof lately afforded. A manufactory in Scotland had an order to give for a large amount of belting, and wanted to obtain the best goods in the market. Proposals, samples being furnished, were made by leading European manufacturers for all the heavier belts desired. A well-known New York house, however, that of J. B. Hoyt & Co., obtained the order and the unqualified indorsement of the Scottish house as to the superiority of their belts. We have seen some of the samples which were submitted by the foreign competitors for this order, and, while the leather was, in some cases, of good quality, the manufacture of the belts was of the most clumsy and primitive character.

We think we are not overstating the case in saying that in neither France nor Germany do they know how to make, or do they make, any very large proportion of first-class belting leather or sole leather; in England, where the tanners, as a rule, have well earned their reputation of making the best sole leather in the world, the tannage is generally too plump and hard for the best belt leather; for, while we believe it is hardly possible to put too much tannin into leather to be used for soles, we think it is clear that, when the hide hes more tannin than necessary to make it of its original thickness as taken off, its tensile etrength is thereby diminished. For belts we want tensile strength and pliability; for soles we do not so much need pliability as the compactness which will resist water, and the toughnese which will beer a great deal of attrition. The English tanners are eminently successful in obtaining these latter qualities. The difference, however, ie not very plainly marked between good belt leather and good sole leather, except that the former requires much better eelection of the parts of the hide to be used, and for large belts only the best parts of whole hides can be used. In France and Germany, however, although their calfekine and upper-leathers are euperior to those made anywhere else, their sole-leether tenning is equally inferior, is done in a very tedious and slovenly way, and their tannere are at least a hundred yeare behind the age.—*Shoe and Leather Reporter.*

Persevering Inventors.

A true inventor is alweys hopeful, even under the most edveree circumstances. Patiently will he toil in pursuit of the object that haunts hie brain, end no obstecles, however formidable, eeem to dampen the ardor of hie enthusiasm. The history of men of real ingennity ie full of examples that verify the correctness of what we have said respecting the perseveriug character of men of genius. Our own history and the records of the Patent Office are replete with examples of the heroism of inventore. Thomas Blenchard, the well-known inventor of the eccentric lathe and other valueble improvemente, wes a notable example of what perseverance can accomplish. Elies Howe, Jun., in the midst of the deepest poverty, persevered with hie eewing-machine until he won complete euccese. Richard M. Hoe, Samnel Colt, Chas. Goodyear, Samuel F. B. Moree, Allen B. Wilcon, Cyrus H. McCormick, John Ericeson, Isaac M. Singer, Jerome B. Secor, John Bachelder, and e host of other inventors, knew no such word es fail; they stnck to their projects till success wes fairly wrenched out of edversities thet would have crushed other men. Many inventore seem to think that the field for great improvements is in eome degree filled up; thet the opportunities for great discoveries iu the erts are abont closed. Such, however, is not the case, the field is constantly widening, and there is es much encouregemeut to pereevere in invention es wes open to the men whose names we heve mentioned. It is only within the last year that one of the most valuable improvements hes been introduced in the art of transmitting messages by telegraph. And iu every depertment of mechanical and chemicel industry labor-saving inventions are still required, and will be for all time to come. We say, therefore, that the field open to persevering men of genius is still a lerge one.—*American Artisan.*

STATISTICS OF THE U. S. IRON INDUSTRY.—The completed returns of the ninth census, jnst sent to press, ehow the following facts in regard to the several branches of iron industry in the United States during the year ending June 1, 1870:—

Pig Iron.—386 establishments, 574 blast furnaces (with a deily capecity of 8,357 tons melted metal), employing 27,554 hands, producing 2,052,821 tons of pig, of the valne of $69,640,498.

Bloomary Forges.—82, employing 2,902 hands, producing 110,808 tons of blooms, of the value of $2,765,623.

Foundries.—2,653, employing 51,297 hands, and producing to the value of $99,837,218.

Forges.—102, employing 3,561 hands, and producing to the value of $8,147,669.

Establishments producing bar, rod, and railroad iron, nail, plate, etc., 309, employing 44,643 hands, and producing to the value of $120,301,158.

SCIENTIFIC PROGRESS.

The Field of Knowledge.

In allnding to the vast field with which the scientist is expected to nuke himself familiar in the present advanced coudition of science, Mr. J. H. Gladstone recently spoke bsfore the British Association as follows:—

"So intertwined ars the various branches of perfect understandiug of one sciencs can only observational or experimental research, that a bs obtained through an acquaiutance with the whole cycle of knowledgs.

Yet, on the othsr hand, who can survey the whols field even of modern chemistry? There was a time doubtless in the recollection of the more venerable of my auditors, when it was not impossible to lsarn all that chemists had to teach; but now that our "Handbook" has grown so largs that it would teks a Briarsus to carry it, and it requires a smell army of abstractore to give the Chemical Society the substance of what is done abroad, we are coupelled to become specialsts in spite of oureelvee. He who studies the general laws of chemistry may well turn in deepair from the ever-growing myrieds of transformations among the compounds of carbon; we heve egricultnrel, physiological, and technicel chemists; one man huilds up new substancee, another new formulæ; while eome love the rarer metals, and others find their whole soul engrossed by the phenyl componnds.

How is this neceesity of specialization to be reconciled with the necessity of general knowledge? By our forming a home for ourselvee in some particuler region, end becoming intimately conversant with every feature of the locality and their choiceet associations, while at the same time we learn the general map of the conntry, so as to know the relative position and importance of our favorite resort, and to be eble—when we desire it—to make excursions elsewhere.

To facilitate thie ie one of the greatest objects of the British Associetion. The different Sections are like differcnt countriee, and leaving the insular seclusion of our especial studies we can pess from one to the other, and gain the edvantages of foreign travel.

From *this* Chair I must of course regard chemistry as the centre of the nniveree; and in speaking of other Sections I must think of them only in their relation to ourselves."

VARIATIONS IN SPECTRUM ANALYSIS.—Mr. A. Shnster presented a paper at the late meeting of the British Association in which he showed, very conclusively, thet the variations noticed in the spectra of certain gasses, es hydrogen, ammonie, acetylene, etc., was due to the presence of foreign eubetances, which were often communicated by the tubes employed to convey the gasses, especially where india rubber connections were made use of. Prof. Tyndal, in this connection, called attention to the fect when even a emall piece of india-rubber tubing was affixed to the end of a glass tube; and the air drawn through it into the month by snction, a distinct taste of the rubber was observed, ehowing that particles of that subetance were dieengaged by the friction of the air in passing over it. So delicate ie the spectrnm test thet even such infinitessimal amounts of a foreign substances mixed with the ges to be analyzed, seriously affects the resnlt. Such facts afford additional evidence of the need of the utmost precaution in employing this wonderfully perfect medium for purpoees of investigetion into the composition of substances submitted toite test.

CRYSTALLIZATION.—Crystale are built up in different wave. Some ere like glees, that is, there is no line which cuts the crystel in a particular way. Rock salt for instance is symmetrical. In others the moleculee are arrenged eymmetrically aronnd a single line. Ice is an instance of this. The consequence is that when ice is exposed to a beam of light perpendicular to the plaue of freezing it ie polarized, On account of this arrangement of the molecules of the ice, part of them are parallel to the plane of freezing and part are at right anglee to this plane. These act differently upon the ether. Crystals built np in this way are called uniaxiel cryetals. All nniaxial crystals have the double refracting power. They break the beam of light which passes through them into two beams. The most celebreted of the epeciesie the Iceland spar. In one direction eymmetry exists. This ie called the optical axie. when polerized light is sent through a crystal of this kind, those rays which pass throngh this opticel axis ere not affected. Those rays, however, which etrike this obliquely are broken up into two, the ordinary and extraordinary rays. These interfere and give rise to color.

SOUND WAVES move like the wavee of the sea. Prof. Tyndal iu a late Boston lecture, threw upon a screen an image of the pulsations or waves of sound as they were set in motion by a large tuning fork, and it was distinctly seen that, though the pulse moved over the whole screen, each seperate particle moved but a short distance, like the particles of water in the waves of that element.

A NEW FACT WITH REGARD TO THE SOLAR CORONA.—During the last eolar eclipss of the sun, Mr. Janssen, who meds his observations in India, nsed a reflecting telescope of vsry large diametsr and short focus so es to obtain a mors perfect and brilliant imsge of ths corona. By ths uss or this instrument he noticed that the redial polerization of the corona increased iu proportion to its distance from ths sun. This fact, which ie new and was first announced et the late meeting of ths Association of Engineers, adds much to the proof which is being gathered that ths corona really belongs to the sun, eud that the iuner or lower portion is more brilliant and hotter than the npper or outwerd.

Mr. Janssen elso described his method of so arranging his telescope that he could look through the finder with one eye end the spectorscops with the other, et the same instant of time. Prof. Herschel, who was present, wes much interested in the detail, and said that it wes all new to him.

On the eveuing previous this latter plan had been tried npon a distant gaslight, and had been fonud to work admirably. The observer could thus dstsrmins accurately what part of ths flame he was examining with the miscroecope.

ACTION OF LIGHT UPON GLASS.—Much attention hes recently been paid to the action of sunlight on colorless and colored glass—both that which is polished and that which is rough. Very perceptible chenges heve been observed from colorless to yellow, and from light yellow, green or blue, to darker or mellower shedes of those colore. Specimens of coffee colored glaes were in five years found to have materially chauged to rose and amber colore.

It is thought that the rich, mellow tones eo much admired in the old end richly etained cathedral windows, is due to the action of the snn-light, in a long succession of years, in toning dowu, what was most probably, comparatively bright or hersh toned colore originally; The action is thonght to be a photochemicel one. Numerous experiments have been mede with epecially colored glasses, with the view to aecertain whet coloring materiel will result in favoreble, end what in unfavoreble chenges. In many cases of ancient glass the putty has been fonnd to materially protect from change those portions which it hae covered. Oue of the most important precticel resulte hae been the proof that manganese should not be employed in gless to be used for light honse purposes. White glass conteining leed, even as emell as 5 per cent. does not appear to change at all.

A TIDAL WATCH.—Sir William Thompson, et e late meeting of the Engineers' Associetion at Newcaetle, npon Tyne, described to the association a new end convenient inetrument which he called a "Tidal Watch," which wes then in process of construction, nnder his eupervision, and neerly ready for exhibition. It would indicate the hight of the weter as dependent on the sun, the hight of the principel lunar and principal eolar tides, end would be edjustable to giving these facte for any given locality. The instrument would also ehow the time of high water. Sir William was also planning another similer mechine for tidel computations, which would give the exact hight of the tide for every moment of time. Thie would be shown by the elevetion and depreesion of the end of a clock hend, which would make one revolution corresponding in time to the rise and fall of eech tide. This device will eleo be mede eelf-recording by traceing the curve of the rieing and falling tide npon peper.

POSSIBLE CONNECTION BETWEEN CYCLONES AND SUN SPOTS.—Careful investigations are being made by collecting and comparing the log booke of a great number of ships, scattered over a series of years, to escertain the possibility of any connection between Cyclonee and Snn Spots. Nearly all the cyclones which have occurred in the Indian Ocean for the last 25 yeare have been carefully noted, and it is ascerteined that the years on which a maximnm in number and violence of cyclones have occurred, have also been those in which a maximum of snn spots have been recorded. This fact is thonght to be eomething more then a mere coincidence ae to time. There are three maxima and two minime epochs of cyclone frequency, corresponding ueerly, if not entirely with similer snn epot epochs. Theee enquiries are to be continned for verification or otherwise—what holds good with regerd to meteorological disturbancee in the Indien ocean, probably holds good over other portione of the earth's surfece.

TEMPERATURE OF THE MOON'S SURFACE.—Mr. Welford hae recently published a very attractive book on "The Orbs Around Ue," in which one paper is devoted to the letest developmente brought out by "Lord Rosse's monster Telescope" as recently employed in determining the temperature of the lunar surface. Mr. W. states that from a delicate series of experiments, only possible with an instrument of such immense power, it appears that the moon'e surface must be heated to a temperature of nearly three hundred degrees above the boiling point. This at once dieposes of the possibility of the moon's being inhabited by any beings such as exist upon the earth.

Stock Sales for Week Ending Dec. 7—S. F. Stock & Ex. Board.

NAMES OF COMPANIES.	Assess.	Shs. in ft.	FRIDAY. Shs	FRIDAY. Prices.	SATURDAY. Shs	SATURDAY. Prices.	MONDAY. Shs	MONDAY. Prices.	TUESDAY. Shs	TUESDAY. Prices.	WEDNESD'Y Shs	WEDNESD'Y Prices.	THURSDAY. Shs	THURSDAY. Prices.	Tot'l Sh's Sold.	Deling. Assm't
Adams Hill	*	300	20	20	50	125	46 @50	30	49	30	50	5	75o	....	....	50	
Alpha		300	20	50	¼							2	41	....	....	237	
Alp's	$	800	37½	9	9¼	365	9 @ 9¼	....	....	100	8	240	7 @ 7¼	80	7¼	955	2¼
American Flag	$	2600	11½	176	9 @ 9¼											550	
Amador Tun	$			300	5 @ 5½	50	6	200	6 @ 8½	....	....	....	....	....	....	900	
Arkansas	$					900	3½@ 4	....	....	....	....	....	....	100	2½	120	
Arizona & Utah	*	1800	3½	70	1¾					50	2					120	
Belcher	*	1000	40	468	101 @104	275	103 @108	635	102 @107	570	98 @ 103	495	95 @100	954	95 @ 100	3394	4
Baltimore Con	*	1000	30	60	1¾	50	1⅞	50	2	125	1⅞@ 2	260	1¾@ 2	265	1¾@ 1⅞	850	⅛
Bowery	$		65									25	800	....	....	25	
Bacon																	
Buckeye						10	2¾			100	2¾	20	2½@ 2¾	....	....	130	
Best & Belcher		2240	100			300	6					100	6	....	....	400	
Bellevue	‡	8000	2½														
Belmont				350	5 @ 5¼	200	5			430	5 @ 5½	100	5	80	4¾	116	⅜
Challar	*	800	10	145	61¼@64	210	60 @62	160	67 @70	460	57 @61	795	52 @58	1888	6		
Caledonia	*	3000	4	160	23 @23½	225	27 @28½	190	26 @27½	780	25¾@26	710	24½@25¾	650	22½@25	2847	4½
Cons. Virginia	*	1160	20¾	245	43 @47	150	47 @51½	270	47 @52	165	44 @46	550	42½@44	705	40 @42¼	3041	4½
Confidence	*	130	192	150	12½@12¾	750	12½@12¾	140	12½@12¾	20	12½	50	11 @11½	50	10¾	1	2
Crown Point	*	600	166¾	680	101 @105	290	100 @ 103	520	104 @110	652	98 @102	450	99 @ 102	1027	101 @110	3855	5
Central		70	857											5	7	50	
Calaveras	*	2200	6¼														
Condor	$			40	87½c	40	1			150	75c	225	75c	100	1⅞	555	1
Columbus																	
Channan	$	700	40									200	1½			200	
Chief of the Hill		1000	30	300	5 @ 5½	305	5½@ 5½	14	5 @ 5½	225	5 @ 5½	125	4¾	155	4 @ 4¾	1134	⅜
Chief East Ex.	$									55	6¾@ 7					77	
Cederhurg	*	1200	20	20	7												
Con. Gold Hill Q.	*	1312	37														
Daney	*	2000	12	125	86½@91					20	15c	50	50c	555	6 1-20	750	⅜
Eureka Cons	*	1000	30	555	17¾@18	185	17 @18	45	18 @19	50	18¾	340	17¾@18¾	730	1 @16¾	2345	1½
Eureka	†	1680	12									5	15	40	15 @16	47	
Exchequer	*	400	20	30	16 @17	20	18							20	14	70	3
Eclipse		70	257									50	9	100	9	159	
Empire Mill		75	16	200	9					275	9½	195	9½@ 9¾	1350	8¾@ 9½	2410	¼
Excelsior	$	4500	2½														
Gould & Curry	*	1200	4	79	205 @210	62	192 @200	5	210	15	205	65	190 @ 200	82	170 @187	3084	23
Golden Chariot		750	1¼	20	13							10	11			300	
Globe		1600	12½					100	1¾	130	1¾	50	75c	20	1½	300	
Hale & Norcross	*	400	4	120	77 @82	55	75 @78	85	79 @83	50	78 @79½	150	71 @76	200	69½@72½	70	9½
Hahn & Hunt	$	3600	8½	450	3 @ 3¼	120	3			50	3	75	2¾	110	2¾@ 2¾	905	¾
Hermes	$					170	10¾@12	50	10	185	11 @12	440	14 @15½	360	13½@15	2205	¼
Ida Elmore	*	1300	17½	20	11			10	12	75	11¾@12			100	10 @10¾	205	¼
Imperial	*	184	843½	1365	9¾@ 9¾	635	9¾@10	1120	9¾@10	980	9½@ 9¾	150	9¾@ 9¾	1393	9¾@10	5634	⅝
Imperial	$	1000	46	300	1¾@ 1⅞	120	1½@ 1⅝					500	1½@ 1⅝	350	1½@ 1⅝	1080	¼
Independent	*	1800	14			50	40c									50	
Ivanhoe	$	600	5	100	62½c	100	75c	300	75c							500	
Julia	*	2000	15	475	4 @ 4¼	110	4 @ 4¾	220	3¾	450	3¾	300	3	150	2¾	1585	1½
Justice	*	3000	7	220	8	45	8 @ 8¼	140	8 @ 8¼	190	7¾@ 8	225	7½@ 7¾	970	⅜		
Kentuck	*	95	721		5 190			25	200							30	
Kentuoky	$		20	25	5½											25	
Knickerbocker	*	1200	20					20	5½	345	5 @ 5¾	801	5 @ 6	130	4¾	1295	
Mammoth	†	1800	20			100	85c	600	35c	540	30c @35c					1240	
Meadow Valley	$		2½	1550	20 @20½	845	20 @20½	970	19 @20	875	18½@19	1445	18½@19	1000	18 @18½	6685	1¾
Mahogany		201	133½							60	11½@12	40	10 @11	60	10 @11	160	
Mocking Bird		1200	25														
McMahon																	
Monitor Belmont				200	15 @15½											200	
Newark	$	800	40	200	4½	370	4 @ 4¼	420	4¼	130	4	142	3¾@ 4	20	4	1282	
Ophir		1400	12	20	61	140	50 @51	230	62½@54	330	60 @53	190	47 @50	240	60 @62	1160	11
O. H. Treasure	*	800	26¼														
Overman	*	12-0	10½	195	70 @72	10	73	5	77½	10	78 @79	510	63 @72½	400	55 @62	1130	
Occidental	*	1200	12½			100	2	200	2	100	2	100	2	100	2	630	10
Pioche	$	1000	20	115	10 @10¼	60	10¾@11	545	10¾@11	800	9¾@10	220	9½@ 9¾	200	9 @ 9¼	1940	1
Pioche West	$							100	1¾							100	
Phoche Phoenix				2085	5 @ 5½	1015	5½@ 6	1130	5¾@ 6¼	835	5 @ 6	655	5¾@ 6	300	6 @ 6¼	6020	¾
Page & Panaca	$	240	16¾	1213	2	1100	2½@ 2¾	1125	2¾@ 2½	290	2⅝	675	2⅜@ 2½	300	2⅛	4705	¼
Pea Vine	*	1000	30	200	1 @ 1⅛	200	75c @1							100	65	1450	35c
Phoenix				2875	3	520	2¾@ 3	290	2 @ 2¾	125	2½@ 2¾	25	2½	100	2½@ 2⅝	4945	⅜
Raymond & Ely	$	4000	7¼	670	119 @ 123	700	105 @111	680	105 @ 108	620	97 @ 100	480	92 @94	230	87 @89	3180	34
Savage	*	800	20	440	74 @81	505	72½@75	310	77 @80	180	77 @81	655	70 @75	210	68 @70	2300	11
Seg. Belcher	*	150	40		70					15	60	15	72	50	68 @70	85	
Sierra Nevada	*	3000	7½	150	14½			50	15¼	150	15½	320	15½@15¾	210	14¾@14½	1100	
Senator	*			75	1					20	1¾					95	
Succor	*	7600	3													2985	
Silver Hill	*			300	7	5.5	7 @ 7¼	55	7¾@ 8	900	7¾@ 8	25	7½	1130	7½	1355	½
Silver Peak				500	2¼@ 2¾	275	2¼@ 2¾			50	2½@ 3	75	2	545	2	100	¾
South Chariot	*	660	30½	100	1												
Trench	*	20	250													20	
Tecumuch												20	1			150	
Wash. & Creole	$	200	110	40	2¼			50	2½	50	3½			50	2	1130	½
Woodville		1400	20	500	5 @ 5¼	100	5	110	5⅜	150	5 @ 5½	150	5	120	5 @ 5⅜		⅛
War Eagle	*	1000	10														
Utah	*	1000	20														
Yellow Jacket	*	1200	20	310	98 @101	215	100 @102	70	101 @ 107	170	95 @99	585	81 @95	570	75 @ 23		18
Yule Gravel	*	400	25														

NOTE.—†—California. *—Washoe. ‡White Pine. §—Ely District. ¶Eureka District. ‖—Idaho. ⁞—Nearly.?—Over.

S. F. Stock and Exchange Board.

THURSDAY, December 5th, 1872.

The sales at the Board for the week ending Monday, the 27th ult., amounted to only $2,000,000, The month of November was not a profitable one for stockholders, the assessments heing numerous and ths dividends few. The Black Diamond Coal Co. disbursed ½ per csnt.—$25,000;the Eastport Coos Bay Coal Co.,1 per cent.—$2,500; Ccderhurg Gold M. Co., 50 cents—$12,000; Providence G. M. Co., 1 psr shars—$3,100; and the Raymond & Ely M. Co., $7 psr share, or $210,000. The Cederburg dividsnd is its second, and that of ths Providence its first. Ths total for mining companies ths month was $225,100, as compared with $273,000 in ths ssme month last year, or $294,-000 in 1870. The Belchsr and Crown Point minss omitted their dividends last month again, but ars expected to resume them in January, if not this month. Ths new mill of tbe Raymond & Ely mine needing repairs, it is prohahle that limited product will cause a reducton of their dividend this month. Ths Eurska (Grass Valley mine) is ths only one that has thus far declared auy dividend this month, it not having paid any since last January. It paid this month $1, per share, or $20,000. Ths North Star, in the same locality, is expected to resume paymsnts again nsxt month.

This week we have had almost a panic in the Stock Market. The reaction caused hy the exposs of the diamond swindle has bad a adepressing influence on mining sharss, and few orders are forthcoming. With ths resumption of dividends in some of our leading mines we may expect more interest to he taken in tbe Stock Market.

On Friday stocks were vsry dull, particularly for Washoe descriptions. As compared with prices of previous Wednesday, Belcher, fell $4; Crown Point, $7: Chollar, $5; Gould & Curry, $7; Hale & Norcross, $6; Savage, $5; Jacket, $3; Eureka Con., $1; Hermes, $2.75; Raymond & Ely rose $10.

Saturday, prices were a little hetter hut the improvement was not general, Alpha fell $3; Chollar-Potosi, $3; Exchequer, $1; Ophir, $1; Hale & Norcross, $4; Savage, $4; Gould & Curry, $20; Raymond & Ely. $14; Hermes, $2. Overman rose $3; Yellow Jacket, $2; Pioche, $1; Sierra Nevada, $1.

On Monday there was very little businese, and prices showed no material cbange, Savage rose $4; Yellow Jacket, $1; Hale & Norcross, $2; Meadow Valley fell $1; Belcher, $2.50 and Cons. Virginia, $3.

On Tuesday the market continued dull, with few changes in prices of stocks.

Wednesday very little husiness and few orders; Crown Point advanced $3; Hermes, $4; Chollar fell $11; Gould & Curry, $20; Savage, $5; Hale & Norcross, $10; Ophir, $3; Cons. Virginia, $25; Yellow Jacket, $13; and Raymond & Ely, $5.

To-day ths market showed its nsual dull and heavy character, Washos descriptions in particular experiencing a declins. The prices of to-day as compsred with thoss of last week will bs seen by refering to our "Stock Tahles."

Below is news from ths prominsnt mines latsr thsn that found in our "Mining Summary."

HALE & NORCROSS.—During the week ending Nov 30tb, 880 tons of ore was extracted, and 687 tons sent to mill.

SAVAGE.—For week ending Nov. 30th, 1,260 tons of ore were sxtracted, assaying $26.10 per ton; 1,124 tons wsrs delivsred at mills.

BUCKEYE.—For wesk ending Nov. 30th, 105 tons of ore were extracted of an average assay valus of $21.60 per ton; 163 tons sent to mill.

RAYMOND & ELY.—On the 27th ult., $36,165 was shipped; on the 30th, $36,260 and on ths 3d inst., $36,000, or a total for Novemher of $369,255. On December account $35,989 has been shipped thus far.

PHOENIX.—On the 27th ult., ten tons of bullion worth $4,521 were sent down; 10 tons more were sent on ths 29th, assaying $265.10 per ton; on the 1st inst., 10 tons wsre sent, assaying $259.47.

From ths EMPIRE (Idaho) $2,426 was received on the 29th ult., and $2,521.28; on the 2d inst. Four hars of bullion were shipped from the SILVER PEAK on the 25th ult, Shipmsnts of hullion will soon commence from the MAHOGANY. Car samples from ths Belcher on the 3d inst., assayed $132. Four furnacss of the EUREKA CONSOLIDATED are running. A further ors improvement is noticeable in ths CHOLLAR POTOSI. The NOONDAY got $85 psr ton from 48 tons of ore. Rich ore is reported in ths PEAVINE. Last weekly clean up of the EUREKA (Grass Valley) for ten stampe was 1,700 ounces of amalgam. The mill of the COLUMBUS M. & M. Co. started up all right on the 28th ult.; mine improving. From the MAHOGANY two hare of bullion worth $3,533 was sent down on the 29th.

PATENT DECISION.—In the United Statee District Court, San Francisco, in the case of William Gwynn against Sayward, Fonda & Co., of Mount Diablo, involving the right to letters patent to the Monitor Perpetuating Cylinder Lime Kiln, Judge Sawyer decided in favor of the plaintiff.

OUR MINING SHAREHOLDERS' DIRECTORY.

[COLLATED WEEKLY FROM ALL NOTICES ADVERTISED IN S. F. JOURNALS.]

ASSESSMENTS.

Name of Co.	Location.	Secretary.	S.F.Office.	Assm't.	Levied.	Delinq't.	Sale.
Alamo O. & S. M. Co.	Washoe.	G. W. R. King.	411 Cal. St.	25	Nov. 2	Dec. 5	Dec. 26
AMAZON S. M. CO.	Ely District.	M. J. McManus.	609 Sacramento St.	10	Oct. 22	Jan. 6	Jan. 22*
Arkansas M. Co.	Ely District.	J. H. Applegate.	729 Monig'ry St.	50	Nov. 6	Dec. 16	Jan. 10
Buckeye M. Co.	Washoe.	Chas. H. Fish.	419 California St.	2 00	Oct. 28	Dec. 2	Dec. 23
Baltimore Con. M. Co.	Washoe.	D. T. Bagley.	401 California St.	50	Nov. 12	Dec. 18	Jan. 11
BUNKER HILL Q. M. CO.	Cal	Charles H. Knox, pro tem.	19 First St.	10 00	Dec. 3	Jan. 6	Jan 27*
Calaveras G. M. Co.	Cal.	T. B. Wingard.	318 California St.	25	Nov. 14	Dec. 18	Jan. 7
Caledonia S. M. Co.	Washoe.	R. Wegener.	414 California St.	3 00	Nov. 9	Dec. 13	Jan. 3
Emerald Hill M. Co.	Utah.	F. Mudge.	Merchants' Exchange.	50	Oct. 17	Nov. 20	Dec. 17
"420" M. Co.	Washoe.	H. D. Howard.	623 Montg'ry St.	1 00	Nov. 23	Dec. 27	Jan. 14
Gen. Lee S. M. Co.	White Pine.	C. F. Schulze.	426 Monig'ry St.	10	Oct. 29	Dec. 3	Dec. 27
GOLDEN RULE M.Co.	Tuolumne Co.	J. B. Russell.	432 Montg'ry St.	50	Nov. 2	Dec. 3	Jan. 4*
Granite Tunnel M. Co.	Cal.	W. G. Holmes.	443 California St.	6	Nov. 21	Dec. 24	Jan. 6
GREAT BLUE G. R. CO.	Cal.	Wm. H. Watson.	302 Montg'ry St.	10	Nov. 16	Dec. 18	Jan. 7*
Hale & Norcross M. Co.	Washoe.	J. F. Lightner.	438California St.	5 00	Oct 18	Nov. 2	Dec. 14
Harper S. M. Co.	Ely District.	J. R. Wilde.	306 Montg'ry St.	10	Nov. 23	Dec. 25	Jan. 13
Howard Hill G. M. Co.	Nevada Co.	J. L. King.	411 California St.	1 50	Oct. 23	Nov.	Dec. 16
HUDSON C. M. CO.		J. L. King.	411 California St.	75	Nov. 11	Dec. 16	Jan. 6
Hermes M. Co.	Ely Dist.	B. B. Minor.	411½ California St.	1 00	Nov. 7	Dec. 13	Jan. 6
Hahn & Hunt S. M. Co.	Ely Dist.	L. Kaplan.	Merchants' Ex.	1 00	Nov. 12	Dec. 18	Jan. 8
Ida Elmore M. Co.	Idaho	Wm. Willis.	419 Cali rnia St.	2 50	Oct. 25	Nov. 30	Dec. 21
Independent G. M. Co.,	Butte Co., Cal.	J. Sharp.	240 Montgomery St.	40	Oct. 15	Nov. 19	Dec. 10
INDUS G. & S. M. Co.	Virginia City, Nev.	David Wilder.	24 Merch'ts' Ex.	50	Oct. 19	Nov. 23	Dec. 16*
Josephine Q. M. Co.	San Luis Obispo.	G. Staacke.	305 Sansome St.	2 00	Dec. 4	Jan. 13	Feb. 4
Julia G. & S. M. Co.	Washoe.	A. Noel.	419 California St.	2 50	Nov. 6	Dec. 10	Dec. 28
KINCAID FLAT M. CO.	Tuolumne Co.	R. H. Cornell.	220 Clay St.	3 00	Oct. 18	Nov. 21	Dec. 10*
Lander Con. M. Co.	Eureka, Nev.	J. L. King.	332 Montgomery St.	10	Nov. 14	Dec. 18	Jan. 8
Lane & Kurtz Oarihoo M. Co.	British Col.	B. B. Minor.	411½ Cal. St.	5 00	Nov. 3	Jan. 4	Jan. 25
Lemon M. & M. Co.	Eureka District.	J. T. Milliken.	608 Mercl ant St.	1 00	Oct. 26	Nov. 30	Dec. 20
McMahon S. M. Co.	Schell Creek.	G. R. Spinney.	320 California St.	25	Nov. 25	Dec. 28	Jan. 20
MAMMOTH BLUE G. CO.	Cal.	J. M. Buffington.	New Merchants' Ex.	5	Nov. 18	Dec. 23	Jan. 13*
Mammoth S. M. Co.	White Pine.	J. L. King.	411 California St.	10	Nov. 12	Dec. 18	Jan. 8
Minnesota G. & S. M. Co.	Idaho.	Wm. Willis.	419 Cal. St.	50	Nov. 21	Dec. 28	Jan. 18
MINA RICA M. Co.	Placer Co., Cal.	G. R. Spinney.	320 California St.	30	Nov. 19	Dec. 23	Jan. 13*
MOCKING BIRD M. CO.	Nevada	H. C. Kibbe.	419 Cal. St.	10	Dec. 5	Jan. 10	Jan. 31*
New York Con. M. Co.	Washoe.	H. C. Kibbe.	419 Cal. St.	25	Nov. 6	Dec. 12	Dec. 30
NOONDAY S. M. CO.	White Pine.	Chas. H. Fish.	419 California St.	20	Oct. 11	Nov. 15	Dec. 4*
NORMAN G. M. Co.	Amador Co	W.H. Watson.	302 Montgomery St.	5	Nov. 11	Dec. 12	Jan. 4*
National M. Co.	Nye Co., Nev.	B. B. Minor	411½ California St.	50	Nov. 7	Dec. 13	Jan. 6
OLD PROVIDENCE M. Co.	Lassen.	Frank Swift.	415 Montgomery St.	25	Nov. 9	Dec. 14	Jan. 6*
O. H. Treasure M. Co.	White Pine.	D. J. Jennings.	401 St.	1 50	Oct. 9	Nov. 15	Dec. 6
Ophir S. M. Co.	Washoe.	E. F. Stone.	Merchants' Exchange.	5 00	Oct. 23	Nov. 26	Dec. 13
Orient S. M. Co.	Ely District.	J. Maguire.	411 California St.	25	Nov. 26	Jan. 3	Jan. 27
Pacific Coal M. Co.,	Contra Costa Co.	A. Lachman.	First and Market.	10 00	Sept. 25	Nov. 13	Nov. 30
Pauper M. Co.	Idaho.	C. L. Bingham.	411 California St.	50	Oct. 7	Nov. 19	Dec. 16
Peavine S. M. Co.	Ely District, Nev.	C. F. Balcom.	426 Montgomery St.	25	Oct. 11	Nov. 20	Dec. 16
Peter Walter, M. Co.	Placer Co., Cal.	T. J. Owens.	Express Building.	50	Oct. 21	Nov. 26	Dec. 17
Pictou M. Co.	Washoe.	S. Phillips.	415 Montgomery St.	12½	Oct. 18	Nov. 18	Dec. 6
Pioche S. M. Co.	Ely District.	C. E. Elliott.	419 Cal. St.	1 00	Nov. 6	Dec. 12	Jan. 6
Phoenix S. M. Co.	Eureka District.	J. Maguire.	419 California St.	50	Nov. 8	Dec. 16	Jan. 6
Pacific Borax Co.	Nevada.	E. Lenba.	507 Montg'ry St.	35	Nov. 12	Dec. 12	Dec. 27
PIERMONT M. & M. CO.	Nev.	J. W. Clark.	418 California St.	50	Nov. 21	Dec. 30	Jan. 24
Placer G. M. Co.	Placer Co., Cal.	G. W. R. King.	411 California St.	10	Dec. 3	Jan. 6	Jan. 27
Placer G. M. & C. Co.	California.	G. W. R. King.	411 Cal. St.	20	Nov. 11	Dec. 14	Jan. 4
Pocahontas G. M. Co.	El Dorado Co.	D. A. Jennings.	401 California St.	50	Dec. 3	Jan. 4	Jan. 28
Rising Star.	Eureka Dist., Cal.	J. M. Buffington.	Merchants' Ex.	15	Nov. 22	Dec. 27	Jan. 13
Rising Star M. Co.	Idaho.	Wm. Willis.	419 California St.	1 00	Oct. 28	Dec. 3	Dec. 23
Sanderson G. M. Co.	Cal.	W. Stuart.	418 California St.	12½	Nov. 25	Dec. 27	Jan. 17
Savage M. Co.	Washoe.	E. B. Holmes.	401 Cal. St.	$10 00	Nov. 14	Dec. 17	Jan. 4
Schell Creek M. Co.	Schell Creek, Nev.	F. W. Van Winkle.	301 Cal. St.	10	Nov. 11	Dec. 2	Dec. 23
Senator S. M. Co.	Washoe.	Henry Boyle.	Stevenson's Building.	50	Oct. 29	Dec. 2	Dec. 21
South Chariot M. Co.	Idaho.	J. L. King.	411 California St.	50	Nov. 27	Jan. 6	Jan. 27
St. Patrick M. Co.	Placer Co., C. I.	D. A. Jennings.	401 Cal. St.	2 00	Oct. 31	Dec. 3	Dec. 24
STATE OF MAINE M. Co.	Amador Co.	D. J. Jennings.	306 Montgomery St.	5	Oct. 17	Nov. 26	Dec. 16*
Star Consolidated M. Co.	Eureka Dist.	G. R. Spinney.	320 Montg'ry St.	25	Nov. 1	Dec. 6	Dec. 27
Succor M. & M. Co.	Washoe.	W. H. Watson.	302 Montgomery St.	1 00	Nov. 26	Jan. 6	Jan. 27
Tecumsch G. S. & C. M. Co.	Cal.	F. J. Herrmann.	418 Kearny St.	25	Nov. 18	Dec. 27	Jan. 17
Tehama Con. M. Co.	Schell Creek.	W. W. Stetson.	411 California St.	60	Nov. 27	Dec. 28	Jan. 18
U. S. GRANT M. CO.	Cal.	D. Logan.	226 Clay St.	50	Nov. 19	Dec. 20	Jan. 9
Utah S. M. Co.	Washoe.	W. E. Dean.	419 California St.	1 00	Nov. 7	Dec. 12	Jan. 4
Washington & Creole M. Co.	Ely Dist.	F. D. Cleary.	Merchants' Ex.	50	Dec. 21	Dec. 26	Jan. 15
Willington M. & S. Co.	Utah.	R. Wegener.	414 California St.	10	Nov. 12	Dec. 18	Jan. 7
War Eagle M. Co.	Idaho.	G. F. Balcom.	426 Montg'ry St.	2 00	Nov.	Dec. 16	Jan. 6
Ward Beecher Con. M. & M. Co.	Nev.	D. A. Jennings.	401 California St.	1 00	Nov. 21	Dec. 28	Jan. 22

MEETINGS.

Name of Co.	Location.	Secretary.	Office in S. F.	Meeting.	Date.
Charter Oak S. M Co.		G. W. R. King.	411 California St.	Annual	Dec. 16
Chief East Ex.	Ely District.	R. Wegener.	414 California St.	Annual.	Dec. 9
Dereret Cons. M Co.		J. L. King.	414 California St.	Special.	Dec.
Empire M. & M. Co.	Washoe.	W. E. Dean.	411 California St.	Annual	Dec. 18
"420" M. Co.	Washoe.	H. D. Howard.	523 Montgomery St.	Annual	Dec. 18
Golden Sun G. M. Co.		S. H. Shepiar.	611 Washington St.	Annual.	Dec. 9
Gould & Curry M. Co.	Washoe.	A. K. Durbrow.	Merchants' Ex.	Annual	Dec. 23
Gould & Curry S. M. Co.	Washoe.	Called hy Trustees.	Merchants' Ex.	Special.	Dec. 23
Heckerdorn M. Co.		L. Leorne.	513 Jackson St.	Special.	Oct. 26
High Con. M. Co.		S. S. Conpon.	322 California St.	Annual	Dec. 16
Independence Con.	Nevada Co., Cal.	A. F. Benjamin.	430 California St.	Annual.	Dec. 9
Kentuck M. Co.	Washoe.	Called hy trustees.	415 Montgomery St.	Special	Jan. 2
Lemon M. & M. Co.			608 Merchant St.	Special	Jan. 6
Ophir S. M. Co.	Washoe.	Jos. Marks.	Merchants' Ex.	Annual	Dec. 18
Phoche Phoenix M Co.	Ely District.	C. E. Elliot.	419 California St.	Annual	Dec. 16
Piute Con. S. M. Co.		A. F. Benjamin.	430 California St.	Annual	Dec. 19
Sidney Brooks Tunnel Co.			Merchants Exchange.	Special.	Dec. 7
Starr King M. Co.		L. Kaplan.	Merchants' Ex.	Annual	Dec. 6
Santa Tunnel Co.	Washoe.	J. W. Ames.	321 California St.	Special.	Dec. 14
War Eagle.	Idaho.	C. F. Balcom.	426 Montgomery St.	Annual.	Dec. 9

LATEST DIVIDENDS—(Within Last Three Months.)

Name of Co.	Location.	Secretary.	Office in S. F.	Amount.	Payable.
Belcher M. Co.	Washoe.	H. C. Kibbe.	419 California St.	$3.00.	Sept. 10
Black Diamond Coal Co.	California.	F. B. Cornwall.	Cr. Harrison and Spear.	½ per cent,	Nov. 11
Cederhurg G. M. Co.	California.	D. M. Bokee.	420 Montgomery St.	50c.	Nov. 30
Crown Point G. & S. M. Co.	Washoe.	O. E. Elliot.	419 California St.	$3 00	July 5.
Eastport Coos Bay Coal.	Oregon.	L. L. Pool.	Merchants' Ex.	$5 00	Nov. 12
Eureka G M. Co.	Grass Valley.	R. Wegener.	414 California St.	$1 00	Dec. 10
Mahogany G. & S. M. Co.	Idaho.	T. J. Owens.	402 Mont'gry, St.	$1 50	Aug. 7
Raymond & Ely M. Co.	Ely Dist., Nev.	A. J. Moulder.	419 California St.	$7 00	Nov. 11
Pioche S. M. Co.	Ely Dist., Nev.	C. E. Elliot.	419 California St.	$1 00	Aug. 10
Providence G. & S. M. Co.		J. M. Buffington.	Merchants Exchange.	$1 00	Nov. 12

——* Advertised in this journal.

MINING SUMMARY.

THE following is mostly condensed from journals published in the interior,in proximity to the mines mentioned.

California.

ALPINE COUNTY.

EXCHEQUER.—Alpins *Chronicle*, Nov. 23: The raising of tbs hoisting works commenced this morning and will he enclosed hy Saturday next. On Monday week the carpsnters will rssume work upon the I. X. L.

MONITOR *Miner*, Nov. 23: Glance shaft on the 75-ft. level below tunnel has been, during three or fonr days past, improving very rapidly.

AMADOR COUNTY.

KENNEDY.—Ths new shaft is down over 100 ft. The new steam hoisting works are rapidly approaching completion.

BACON.—Work progresses finely, and the rock yields as flattering prospects as evsr. The new whim will bs in activs operation in a few days.

BUTTE COUNTY.

NEW MILLS.—Oroville *Record*, Nov. 30: The quartz mill of Halstead & Nishet, recently huilt, will bs in runuing order in ahout a wesk.

THE new quartz mill on the Reese ledge in Oregon Gulch, will soon bs ready to commence running.

CALAVERAS COUNTY.

HUGHES CLAIM.—Calaveras *Chronicle*, Nov. 30: The claim is paying well. It is worked through an incline eeveral hundred ft. in lengtb.

RAILROAD FLAT DIST.—The Sanderson ie turning out very rich ore at the depth of 160 ft. A emall streak of pay ore has heen struck in the north level of the Petticoat, 450 ft. helow the surface. Wolverine continues to yield higb grade ore in einking.

WEST POINT DIST.—The Seminole Co. are reopening the old Pascoe. Mining interests are improving.

SCIEFFARD.—San Andreas *Citizen*, Nov. 30: The Supt. says he ie down 96 ft., has drifted across the lode 17½ ft., snd struck the foot wall. Ths rock from this drift is very rich, containing free gold, and gold-bearing sulphurets.

NEVADA COUNTY.

GETTING READY. — Nevada *Transcript*, Nov. 28: At Sargent & Jacoh

ledges, rich in gold and silver, have been discovered.

The Thomas' boye bring in very good prospects. With water pleuty, it is thought $15 and $20 to the man can be made.

J. H. Martin returned yesterday, after having discovered a vein of black lead, 40 ft. in width. These mines are to the north of San Bernardino mountain, abont 40 miles from here.

SISKIYOU COUNTY.

A Chunk.—Yreka *Union*, Nov. 23: G. Smith showed ns a nugget of gold this week, which weighed over 16 oz., taken from a claim on New River.

Sold.—N. B. Wooley has sold his claim on the East Fork of Scott River.

Learned's Claim.—This claim paid week before last about $2,600; last week about $1,200.

TUOLUMNE COUNTY.

Big Strike.—Sonora *Independent*, Nov. 30: Plummer & Perry have struck a rich qnartz lode on Hiyahpoo Hill, about 400 ft. north of the Hiyahpoo Co.'s lode.

Kincaid Flat Co.—Sonora *Democrat* Nov. 30: This Co. are pushiug their tunnel rapidly. It is in 1,700 ft.

Nevada.

EUREKA DISTRICT.

Rich.—Eureka *Sentinel*, Nov. 27: The Ruby Cons. is turning out 4½ tons of bullion per day, valued at $465 per ton.

Silver Lick is looking and yielding better than ever before.

Suspended.—Work has been suspended in the mines of the Richmond Co., Ruby Hill.

ELY DISTRICT.

Bullion.—Ely *Record*. Nov. 24: For the week ending yesterday, the shipment amounted to $57,720.80.

Spring Mt. Tunnel has been extended inwardly 250 ft., and drifting is progressing. A contract for 50 ft. has just been let. In the breast a ledge has been struck which shows very promising. The ledge is about 2 ft. wide showing a fair quality of ore which assays over $100 per ton. Two ledges prior to the one last ent have been found in the tunnel. No. 1 ledge, abont 40 feet from the mouth, has been sunk upon 100 ft., and exhibits a largo body of vein matter not less than 10 or 12 ft. wide, and containing bnnches of ore which assay not lese than $75 to the ton. Ledge No. 2 is s small veiu struck about 165 ft. from tho mouth. It has been drifted upon about 40 ft. and shows a prominent vein.

Van Demark Tunnel.—The tunnel is in abont 350 ft. It is some 8 or 10 ft. wide and about 10 ft. high, and was locsted to tap the Tiger. It will strike the ledge some 300 ft. below tho surface. The tunnel passes over a blind ledge about 125 ft. from the cutrance.

Peavine.—The main shaft is down 175 ft. and sinking rapidly. On the 30-ft. level the drift west extends into the mountain 170 ft, showing a good body of ore the entire way. At the west end of this drift it is at least 120 ft. from the surface. The ledge is well defined. Ou the 80-ft. level the drift west extends in 160 ft. showing the same ledge. There are about 60 tons of ore ready for shipment, which will mill $120 per ton.

Silver Peak.—The main shaft is down 130 ft. and sinking rpidly. one shift being kept at work sinking, the other drifting and etoping. The ledge at the bottom of the shaft is 4 ft. wide, the ore looking splendid. We were shown 8 bars of fine bullion, each of which will reach 1,000 oz. There are about 150 tons of ore on dump.

Marion.—The main shaft is down 112 ft. showing a strong ledge of 2 to 4 ft. in width. The stopes are looking well and yielding good ore. A contract will soon be let for sinking the shaft 50 ft. fnrther.

Pioche.—Mr. Nelson is sinking an incline from the 460-ft. level, for the purpose of prospecting the mine; is down abont 100 ft. at an angle of 60 deg; at the depth of 130 ft. drifting will be commenced for the ledge. The ore boing taken out assays on an average of $475 per ton.

Arkansas—is looking well. On the 120-ft. level there is magnificent ore; the vein is well defined and from 2 to 4ft. wide. The 200-ft level shows the same kind of ore. There is about 130 tons of fine ore on dump.

Floral Mill.—The work is rapidly reaching completion.

Amador Tunnel.—The main shaft is down 70 ft. below the level of the tunnel. On the 50-ft. level they are drifting both ways, showing a well defined ledge.

Pacific Tunnel.—This tunnel is in 1,075 ft. near which point they have cut a ledge which proves good as far as inspected; is about 3 ft. wide with 18 inches of good pay ore.

Chief of the Hill—Is shipping from 4 fo 5 tons, per day, which averages $130, pulp assay. There has been shipped within the last 2 months bullion to the amount of $29.404. From the 12th to the 17th inst., 81 tons have been worked, producing $7,564.39. Winzes No. 2 and 3 are down 100 ft. at which depth the 3 winzes will be brought in connection on the ledge. The winzes are 100 ft. apart, all sunk iu ore. There are 35 men at work.

Huhn & Hunt.—They are sinking on both ledges; the shaft on the first or main ledge is down 130 ft. and on tho 2d about 50 ft.

Chief of the Hill—Eaet Ex.—The main shaft is down 160 ft and still sinkiug. At 200 ft. will commence drifting for the ledge; on the 90-ft. level they are drifting east. The ledge ie looking well, and Captain Hardy expects to find very rich ore on the 300-ft. level.

La Paz.—Shaft down 25 ft. A contract for sinking 100 ft. hss been made

Meadow Valley.—The most of the work is dead work or prospecting.

Portland East Ex.—Depth of shaft 68 ft. Working 2 shifts constantly. It is calculated that at a depth of 70 ft. a fine ledge will present itself.

Portland.—The ore continues to improve. There are 50 tons on dump.

HUMBOLDT COUNTY.

Dun Glen.—Unionville *Silver State*, Nov. 30: It is reported thst a rich etrike has been made in the Empire.

White Cloud Dist.—Rich and extensive deposits of copper ore have recently been discovered; 3 assays taken from the snrfaco of these deposits, yield respectfully 20, 22 and 26 per cent. of metal to the ton.

Rye Patch.—The Butte Co.'s mill is shut down.

Emily.—The Emily ledge is reported 4 or 5 ft. wide and full of mineral.

Trinity Dist.—Midian Torrey is prosecuting work on the Gov. Booth. The shaft on the ledge is over 100 ft. dcep. The ledge is 2 ft. wide at that depth.

REESE RIVER.

Belmont.—Reese River *Reveille*, Nov. 23: The Monitor mill started up Nov. 21st on its trial trip.

The El Dorado Co. are working to advantage on their mill.

The Belmont Co. have their hoisting works completed on the Canfield, and will soon put in the steam pump in the Highhridge, and erect hoisting works over the esme.

The Belmont Co. is coutinning its levels below water by contract, with favorable prospects, also taking out ore from upper workings.

The Monitor Co. is doing a great deal of work in their lower level through the new tunnel, preparing to tske out ore from the new mill. They have out slready assorted some 600 tons of first-class ore. Working 66 men.

The El Dorado Co. are pushing work on the El Dorado South and the Arizona. The ore houses of both are jammed full, and every available space on the dumps is piled up with spleudid ore. Over 500 tons are assorted and ready for the mill. The lower workings of the El Dorsdo never looked better thsn at present. The 350-ft. level going south ruus in splendid ore. The 400-ft. level runuing for this body is in 60 ft. and present the same characterics as the level above. Above the 240-ft. level a fine body of chloride has been opened this week. Working on mill snd mine 78 men.

The El Dorado North hss its vertical shaft down about 12 ft. The shaft is 4ft.6x8ft.6 inches.

Gold Mt.—The Oriental has a shaft down 112 ft.; the ledge at the bottom is 5 ft. wide.

The Independent has a shaft down 25 ft. with a ledge of an average width of 4 ft. of rich chloride ore, assays of which give an average of $500 per ton.

Ou the Austin ledge a shaft has been sunk 15 ft. revealing a well defined ledge of sulphuret ore, 5 ft. in width, and of an average assay value of $300 per ton.

The Borneo shaft has attained a depth of 25 ft. disclosing a uniform ledge 1 ft. thick, carryiug ore which averages $100 in silver and from $18 to $40 in gold.

WASHOE.

Chollar Potosi.—Gold Hill *News*, Nov. 30: Daily yield 130 tons, the assay value of which is $33 per ton. The 800-ft. station is about completed.

Woonville.—The uew hoisting works are to be started up at once. The main incline is down 156 ft. and this is to be retimbered forthwith. The first level is 75 ft from the surface, and the second or lowest level is, from the bottom of the incline, developing a fine vein of ore. The regular yield of 14 tons per day, of high grade ore, is from the tunnel.

Savage.—Daily yield, 150 tous worth $27 per ton. The ore hodies on both the upper and lower levels are holding out and improving. The incline is down 65 ft. below the 1600-ft. level. The north drift on the 1600-ft. level is making excellent headway. The south drift on the 1600-ft. level is making slow progress.

Seg. Rock Island.—Aa soon as arrangements are perfected the mine will be reopened aud put in full working operation.

Insurance.—The incline, at 55 ft., has broken through into an old chamber. Good developments may he looked for soon.

Hale & Norcnoss.—The work of prospecting the various levels is progressing. The yield is about 150 tons per day. Sinking the incline is resumed and is making good progress.

Silver Hill.—Both the north and south drifts on the first level are in quartz, the vein showing a regular and permanent formation.

Cons. Virginia.—Sinking the incline is making good headway, and prospecting at the 1167-ft. level going on as usual.

Sierra Nevada.—The mill and hoisting works were started up last Sunday. The different ore breasts in the upper and middle portions of the miue continue to yield 40 or 50 tons per day of good milling ore.

Imperial-Empire.—The work of sinking the incline ie making steady progress.

Buckeye.—The mill of the Co. is running steadily on ore from the mine, with excellent results. At both the upper and lower levels the ore body shows improvement.

Union Cons.—The main west tunnel is in 350 ft. The ledge at that point is about 100 ft. in width. A drift running northward along the line of the ledge is in about 20 ft. in solid quartz.

Baltimore Cons.—Shaft down 336 ft., making 16 ft. progress during the past week. The drift at the 250-ft. level is in 100 ft. from the shaft.

Crown Point.—The cross-cuts st the 1,300-ft. level hsve ehown hetter during the paet week. An immense body of fine ore is developing at that point. The ore breasts at the 1,200 aud 1,100-ft. levels are yielding splendidly.

Belcher.—Daily yield 300 tons. Good progress has been made in both drifts and iucliue during the week.

Gould & Curry.—Work was resumed yesterday.

Succor.—Shaft down 230 ft.; rock seamy, aud blasts badly.

Utah.—The hoisting works are idle for want of wood.

Jacon Little.—Assays from the upper mine during the past week, ran as high as $116 to the ton, gold and silver equally predominating.

Crown Point Ravine.—The shaft is cleaned out and repaired to a depth of 53 ft.

Overman.—The new and powerful hoisting engine is in place, new cages are being fitted in the shaft, and the snrface operations wear the appearauce of soon approaching completion.

Occidental.—The main north tunnel duriug the week cut a strong vein of quartz, tapping a heavy body of water.

Julia.—The msin east drift is driven ahead. Sinking the shaft is making good progress.

Red Jacket.—This mine has been yielding a finer quality of ore than heretofore, and the ledge iu the shaft is widening. The new tunnel is commenced.

Caledonia.—Considerable water is encountered in the lower drifts, somewhat impeding operations. The upper drift is in 618 ft.

Knickerbocker—Main west drift in 370 ft. Clay and qusrtz in face.

Senator.—Shaft down 207 ft. and making good progress.

WHITE PINE.

The Mines.—Schell Creek *Prospect*, Nov. 2: In Scheil Creek work on the McMahon is being pushed forward with vigor. The shaft is down 135 ft. below the croppings. Tunnel in 195 ft. in a slate formation, confirming the theory of a true contact veiu. The Ksvanagh tunnel is in about 120 ft. iu very hard qusrtz, which shows considerable mineral through it. In a ehort time the owners expect to strike a body of ore. Work on the Jupiter goes on, the mine continuing to improve. At Queen Springs work hss commenced on the Nutmeg. The intention is to sink a shaft some 75 ft. in depth, and prospect the mine generally. At Ruby Hill the Tambien is being worked steadily. The shaft is dowu 70 ft. During the week struck ore which assays $500 per ton.

Robinson.—The Canton Co.'s furnace is running steadily and tnrniug out considerable bullion. They made a fine run one day last week, turning out 105 bars of bullion in 24 hours, some of which assayed over $700 to the ton.

Bonnen.—The principal mines on Queen Spring Hill, were bonded this week to T. R. Posey, and another gentleman, for $75,000, the hond to expire on the 1st of May, 1873.

Arizona.

The Outlook.—Prescott *Miner*, Nov. 16: From Wallspi we learn that deep shafts are down upon several lodes, and that the ore is plentiful and rich. H. F. Baker is hard at work erecting his furnace.

The copper miners of Williams Fork are taking out and shipping ore to S. F.

Yuma Co. miners are taking ont ore from the Castle Dome mines, and shipping to S. F.

Las Planch de la Plata mines, on the line of Pima Co. and Sonora, are attracting attention. The lodes are small, but carry nearly pure silver.

Smith & Taylor are hard at work, setting their mill up, below Wickenburg.

Jackson & Co., are driving away at the Del Pasco.

Colorado.

Summit Co.—Colorado *Miner*, Nov. 21: Col. Fuller & Co., constructing a flume to carry the water of the Swan over a large extent of pay ground not yet broken, have completed 2½ miles and will finieh the rest next summer.

The New Englsnd lode is in a royal body of ore, worth by mill run, more than 600 ozs. in silver per ton. The pay vein, ahont 7 inches in width, is composed of solid argentiferous gslena.

Montana.

Ditch Enlargement.—Deer Lodge *Independent*, Nov. 23: It is in contemplation by the Rock Creek Co. to enlarge their ditch from the head of Squaw gulch to Pioneer City, to the capacity of 1,000 inches; also, to enlarge the Pike's Peak ditch to the head of Mormon gulch.

Unionville ann the Park.—The Addis mill is running on ore from the Park discovery; Judge Turnley's mill starts up Nov. 22d on ore from the Park lode; the Hodge mill is running on ore from the National Co's. mine. The Supt. reports proceeds of first month's run at $27,000, running day and night. Last two month's run working only half time has averaged $13,000 per month.

Big Bar on Flint.—The deep bar diggings on Flint Creek paid $15 per day to the hand during the past season.

Idaho.

Empire.—Silver City *Avalanch*, Nov. 23: More stoping ground ie being opeued every day. They are taking out daily 30 tous.

Minnesota.—The 4th level drift north is on s 20-inch vein of splendid ore, much better than ever found on the north side of the shaft. They have commenced hauling to the Cosmos mill.

South Mountain.—The furnsce is in full blsst turning out tons of bullion.

Wan Eagle.—The 5th level drift ie being driven north and south with dispatch. The vein is about 1 ft. in width snd the ore rich. They have jnet etruck a rich chimney of ore in the 5th level drift south.

Belle Peck.—The pay streak is from 5 to 18 inches in width.

Mahogany.—The 6th level winze 104 ft. south of the shaft, is down 10 ft. showing a ledge from 18 inches to 2 ft. in width, of amazingly rich ore. The 6th level drift south is in 136 ft., showing a ledge of about the same size snd quality of ore as in the winze. In the stopes, 25 ft. from the bottom of the 6th level, the ledge is sbout 4 ft. wide, showing native silver and free gold in abundance. They are stoping 40 ft. north of the ehaft in the 6th level, and tsking out fine looking ore.

Ellmore.—The shaft is down 80 ft. for the 9th level, and the winze, 64 ft. north of the shaft in the same level is down 54 ft., showing a ledge 2¼ ft. wide of first-class ore. They are etoping 150 ft. north of the shaft in the 8th level, with 75 ft. of hacks, in a ledge that averagee over 2 ft. in width of magnificent ore. In the 9th level, 200 ft. north of the shaft, they have struck the ssme kind of ore as found in the 7th and 8th levels. They will commence driving the 9th level by the first of next month, and at the same time begin sinking for the 10th level. In the 9th level we find the rich chimney in the winze, 64 ft. north of the shaft; in the 8th level the same chimuey is strnck 150 ft. north; in the 7th level it is fonnd 175 ft. north, snd in the 6th level it is discovered 200 ft. north. This rich chute or body of ore comes from the north, snd in all probability extends to the surface.

Utah.

Stockton.—Sslt Lake *Journal*, Nov. 27: The Silver Queen has a shaft 25 ft.; vein 4 ft.; ore valued at $45 per ton.

Grest Basin, shaft 25 ft.; tunnel 120 ft.; width of vein 3¼ ft.; good paying ore 18 inches; good walls.

Mandary, ehaft 120 ft,; 2 drifts 25 ft. each, showing good body of ore, well defined; working 3 men; abont 40 tons of ore on dump.

Ksthcrina—Shaft 25 ft.; some good ore on dump.

Our Fritz, shaft 22 ft.; looking well; ore, high grades of galena and carbonates.

Reamer looks well; deep shaft; some ore on dump of high galena and carbonates.

Tacson about 150 tons of ore on dump. They are taking out from 5 to 7 tons per day. The Tucson main tunnel is about 140 ft. rnu on the vein between walls; mineral from 10 to 18 inches of high grade; a shaft connects the tunnel 75 ft. deep.

Paul Pry shaft 100 ft.; vein 3 ft. at bottom, with 2 ft. of mineral; average about $55 per ton; a tunnel in 90 ft. is being driven to connect with the shaft, when about 10 men will be employed who can take out about 8 tons of ore per day; about 20 tons on dnmp.

Argent shaft is 120 ft.; vein 4 ft. at bottom.

Vulcan shaft 25 ft. looking well; about 25 tons of ore on dump. A tunnel will be started to connect with the shaft at a depth of 210 ft.

Minerva.—Has a vein of about 7 ft., well defined; good walls, solid and smooth, mineral mixed through with quartz; galena of high grade; some assayed as high as $295 in silver and 75 per cent. lead; shaft 100 ft., drift 40 ft.

Muscatine shaft 25 ft.; vein 3 ft.; 2 ft. ore, mostly carbonates; considerable amount of ore on dump.

American Fork.—The Wasatch King vein ie composed of argentiferous galeua, grey carbonate and black sulphurets. The discovery shaft has been worked to a depth of 40 ft., and shows a vein of solid mineral 18 inches wide. A tunnel has been opened on the vein below the discovery shaft, and worked 20 ft., showing a veiu of 12 inches of mineral. Abont 30 tons of ore have been mined and assay from $40 to $400 silver per ton, with 50 to 60 per cent. lead.

The Gold Seeker opened by a horizontal tunnel already worked 133 ft. has been bonded for 5 months; it is the intention to work this tunnel to a distance of 800 ft, where the indications are that a deposit of good ore exists.

Photography.—We have lately seen some specimens of Photography executed by Messrs. Bradley & Rulofson that eqnal or surpass any thing of the kind ever brought to our notice; we could name among others some of their photographs of Prof. Agassiz. The retouching and general finish together with their great clearness prove them the work of a thorough artist. Messrs. Bradley & Rulofson deserve great credit for their indomitable energy and perseverance. Their gallery has attached to it the only elevator in use in an art exhibition, and their artist—Max Bachert—is certainly a leader in his profession on this side of New York.

Diamonds.—An investigation is now going on to determine the authors of the "diamond frauds," and it is said that the guilty parties will be brought to justice, if it is possible to find out who they are. Arnold and Slack are considered as only the tools of the instigat—

The Mineral Hill Silver Mines.

The Mineral Hill silver mines did not turn out as well for the English company which bought them as was expected, and the whole concern came very near being wound up a ebort time ago. The profit made to the 31et of Decemher, 1871, was efficient to pay the dehenture intereet and redeem 30 honds, pay a small dividend on the share capital and leave a halance of £7,673 12s. 5d. to he carried forward. The working of the mines from Decemher to June was attended with loss, hut since then had resulted in a profit, and the reporte lately received by the company show a considerable increase in tbe returne. A meeting of tbe company was held in London, Octoher 30th, at wbich the Cbairman eaid it would be gratifying to the shareholders to know that the mine wae slightly thongh gradually improving. Two minee are now looking well, instead of only one, as some time ago. At one time the returns were only twenty tons per week, and hy last advices 64 tons were being raised. The proceedings of tbe meeting are fully reported in the *Mining World*. Captain Hoskin's monthly report wae read, hut as he did not point out how the company could be saved from being wound up it is of no particular interest. Mr. Henry Sewell, the well-known mining engineer, reported on this property at requeet of the company, and we give his report as well as that of the Directors, helow. We understand that Mr. Sewell made no charges for his professional examination of the property, heing probably incited hy a commendable desire to henefit hie countrymen and to eave tbe reputation of tbe property, ae well as that of tbe celebrated mining firm of John Taylor & Sons., of London. Mr. Taylor'e son had personally reported favorably on the property, and the firm held eharee in the company. Some distrust was manifested in their fairnees after the uufavorahle result of operations hecame evident, which Mr. Sewell'e report will probahly remove. Terms have heen agreed upon for a lease at a moderate royalty of the locations referred to by Mr. Sewell in his report, and immediate trials will he made there.

The Directors' Report.

In presenting their Annual Report the directors desire to inform the shareholders that tbe chairman, Sir C. T. Van Straubenzee, K. C. B., having been appointed Governor of Malta, has resigned his seat at the hoard; and that Col. Napier Sturt, M. P., and Mr. C. F. Clements have also eent in their rcsignatione. The vacancies in tbe board thus caused may be filled up or not, as the shareholders may decide. The accounts now preeented to the meeting are made up to 30th June last, and have been examined aud passed hy the auditors. Tbe profits made to 31st Decemher, 1871, were efficient to pay the debenture interest aud redeem 30 bonds, and pay a emall dividend on the share capital, and have a balance of £7.673 12s. 5d. to be carried forward. Tbe working of the minee from December to June wae attended witb lose, ae ehown by the published accounts; and, tberefore, the debenture interest had to be met out of the available funds of tbe company; but the working of the mines since that time hae resulted in a profit, and the reports lately received show a considerable increase in the returns. Tbe quantity of ore raised per week had towarde the end of May last fallen to 25 tone, and early in July was only 20 tone of 50 dol. ore, but has since gradually increased up to 50 tone of 70 dol. ore; and the Superintendent advises that this increased return is likely to he maintained for eome time. In consequence of the unfavorahle reports from the mines the directore called a meeting of the debenture-holdere, at whieh a committee was appointed, who made a careful investigation as to the formation and position of tbe company, and iesued a report which has since heen circulated among the debenture-holdere and shareholdere. In that report they recommended that further exploration of the Company'e property be carried on, and made suggestions as to the source from whence fnnds for thie purpose should he provided.

Your directore as well ae that committee have made etrong representatione to the vendors of the Mineral Hill property, in order to indnce them to return eome portion of the purchase-money, hut without enccess. A sum of £2,600 has, however, been received from the California Mining Company, Limited, as a loan, which furniehee the meane for carrying on present exploratione. Many of tbe debenture-holdere have intimated their deeire to forego the interest on their bonds, in order that theee explorations may be continued with vigour, to prove the value of the company'e property, and sufficient fnnds for that purpose would be available if the company were relieved from the necessity of making the heavy quarterly payments of interest. In conecquence of theee representationa the hoard has taken the advice of counsel, who is of opinion that tbis can he effected only by the reorganization of the company witb the sanction of tbe Court of Cbancery.

Mr. Sewell's Report.

"On *three* conecntive daya I inspected with great care the geological formation and topographical position of the above minee, and tbese two combined are the true "Key" as to tbe inexhaustibility, or *vice versa*, of the veins therein contained. Great errors are committed often by miniug experts giving their whole attention to the underground workings, neglecting to etudy the eurrounding country, its rocks, and tbeir effect on the mineral veins. By exploring tbe country rocks at surface, and in the immediate vicinity of the mines, and by forming in the mind's eye diagrams, sections, positions, and angles of inclination of such, substantial conclusions can he arrived at in conjunction with the underground inspection; for every variation in direction, extension of the veins, and tbe minerals therein contained can be traced to the adjacent rock; and the study and exploration of the rocks at surface, generally gives the expert an insight into the deeper rocke, thus assisting him to draw almost invariably safe conclusions as to the permancy of the veins and the ore contained in tbem. In the case of tbe Mineral Hill mines the causes and effects are most apparent, as can he seen by the accompanying cross-section of the hill. From *A* to *A*, is about 160 feet in thicknese of stratified contorted limestone; c, c, are fiseures in the limestone filled with quartz matrix which carriee the ore. These vary from 20 to 30 feet in width, and can be traced through the whole length, continuing for some distance heyond tbe mines of the Austin Company. Fissures in the limestone filled with quartz is the only matrix in which the ore is fonnd.

Theee vary from 20 to 30 feet in width, and can he traced through the wbole length of the mines of the English company; continuing for some distance heyoud the mines of the Austin Mining Company. On many places tbese fisanres have becn completely worked out; but there still remain some that will continue to

B

produce ore for several monthe. I see no certainty of theee fissures living heyond tbe limit of the limestone, as can be seen from the nature of the underlying rock at *B*, *B*, which is compoeed of soft shales. I have not found a trace of primitive rocke near these mines; theee no doubt exist, hut at a great depth, and therefore of no henefit to tbe surrounding rocks wbich produce the ore. While inspecting the surface of these mines I discovered a location which I consider of great importance from the class of ores at surface, hut little attention had beeu given to it, considering the ore to be lead, and of no value for the milis. The ore assays ahont 25 per cent. lead, and as high as 70 dols. in eilver. The deepest point in this location is 15 feet, without any horizontal worke or levels; in fact, thoronghly neglected iu consequence of tbe nature of its oree. I explained to Mr. Oakes and Captain Hoekins that ochry lead oree in many districte in Utah are the indicatione at eurface, which mincrs follow to reach rich milliug ores. On the whole of the property I have not seen anything that wonld indicate a great body of ore nearer at hand than in thie location. Tbe width of tbie ochry lead ore is ahout six to eeven feet, and contains ae far ae it has been worked, say 15 perpendicular feet. Then tbis body of lead oree is surrounded by the same quality of quartz that produce the ore all over the hill. I calculate tbis spot is likely to produce many tbousand tons, ae the width of quartz on each eide of it is not less than 50 feet. This location can be proved with about $5,000, and I therefore strongly urge the company to open it out. I also brought before the notice of Mr. Oakes the great importance of prospecting the surrounding mountains, especially a etratified limestone range, within four miles of Mineral Hill, for in the like formations have heen found our richest mines in Utah, sucb as Camp Floyd, Tintic, etc. Mr. Oakes informed me he had already sent out two men for a few days, at $4 per day wages; I pointed out to Mr. Oakes tbat wagea alone wonld uever stimulate American prospectors to do any real work, and requested him to make an arrangement for wages. and an interest of a fourth or tbird of the find, which generally they are only too glad to bargin for. I took with me an assistant, a man of great experience, Mr. Edward Taylor, an American wbo bae had 22 years practical experience over all tbe States and Territories of the West. He fully concure in the viewe I have taken. The management of this property is in excellent hande. In Mr. Oakes I found a gentleman of great probity and intelligence, with a zeal for tbe welfare of tbe company ouly to be found in men of high principlee. In Captain Hoskine I found an intelligent man in hie profeesion, who has managed his department with great ekill. In the metallurgical or milling section I found Mr. Eiszer a thorough, competant man. I augur very well with such a trio for the future welfare of this company, provided the programme I point out is carried out."

Large quantities of volcauic dust were ejected from Veeuvius during the recent eruption. A sample, collected at Ischia, about twenty-five miles from the mountains, was composed of quartz and magnetite without titaninm.

San Diego and San Bernardino Railroad.

A correspondent of the *Alta*, writing from Los Angeles, gives the following details concerning the Sau Diego and San Bernardino Railroad, upon whicb work hae just been commenced :

Just now, before entering upon the deecription of an interesting trip to the Valley of San Bernardino, it will be proper to say something relative to tbe preeent condition and financial prospects of tbe company which has undertaken the work.

The Original Plan

Was proposed ahout three years ago, under circnmstances peculiar to the time. Then, there was some douht as to the ultimate designs of the projectore of the Memphis and El Paso Railroad. It was helieved by many, that if built at all, it would be over a route from the Colorado River to San Francisco, by way of San Bernardino, leaving San Diego effectually "out in the cold." To guard against such a contingency, the idea of a branch road to run north from San Diego and tap the main trunk, was hroached to the citizens of San Diego by Judge George Hyde, of San Francisco. This gentleman had invested in real estate in the embryo city, and was consequently interested in its prosperity.

Shortly afterward the San Diego and San Bernardino Railroad Company wae organized and incorporated under the laws of tbe State hy residents of the counties in which it was designed to be constructed. Preliminery surveys were made, and the route was soon found to be not only practicahle, but to pass through and make tributary a large and exceedingly fertile country.

Suhsequently, the County of San Diego voted a subsidy of one hundred thousand dollars in aid of the enterprise, and San Bernardino County followed suit hy votiug fifty thousand dollars.

The Present Plan

Has not heen made to differ in respect to route hy the changed aspect of railroad movemente. The commencement of operations on the Texae and Pacific Railway, under the management of Colonel Thomae A. Scott, has stimulated tbose interested in the Company to renewed exertions in order that a moet important feeder may be provided for the new transcoutinental road, and tbat San Diego may be brought into connection with its most valuable and productive back country. The standard gauge has been adopted.

The line of the road runs north from San Diego, following the natural gradee offered by the face of the country, and meete witb no serious difficulties anywbere, excepting a little heavy work and a short tunnel between the San Luis Rey Valley and Temecula. Twenty miles from San Diego the country hegins to offer fine inducements to farmers, and rapidly improves towards San Bernardino. The last forty milee are almost entirely level, open country, rich iu eurrounding agricnltural and mineral resources. There are hundreds of thousands of acres of the finest tillable land, which only need fecilitiee for transportation prior to hecoming thickly settled hy enterprieing and prosperous farmers.

The length of the railroad by survey will be 112 miles, and it is estimated that it will require only the expenditure of $2,000,000 to construct it and furnish it with rolling stock.

The Condition of the Company

Has been variously and incorrectly reported, and it eeeme to be the desire of the present managers to correct popular exaggerations and to present their claims for eupport and assistance fairly and honestly.

First, they have their organization, preliminary eurveys, five milee located at the San Diego end, the rights of way over private property nearly complete. Eigbt acree on the bay of San Diego, adjoining to the north the lands selected for the Texae Pacific Railroad, have been condemned and the titles to tbe land have been partially acquired. At San Bernardino adequate depot grounds have been promised by the people there, and will soon he the property of the Company. The money realized from the disposition of a limited amount of stock and the subsidies of $150,000 contingent on tbe completiou of the road, complete the list of assets.

Tbe Company is entirely out of debt, and is endcavoring to proceed with its work as rapidly as its circumstances will permit.

The Work.

It was some time ago incorrectly reported that a contract had heen concluded for tbe construction of tbe first ten miles of the road. Negotiations were pending in tbat direction, but owing to the failure of the contracting party to furnish satisfactory guarantees of his ability to proceed to a snccessful iesue, the whole matter was dropped. It is now tbe intention of the Company to construct the firet five miles, which they must do within one year, to preserve their franchise, without contract. To do this hut little grading is necessary, all of which can easily be done by the officers of the Company.

Grading has been commenced with the funds obtained from those who have subscribed to the stock. This they propose to continne doing, commencing at both ends, and without contracting debts. If present prospects continue favorahle, they will be able to do ao. The people at both euds appear to be united in their good will to the Company, and aubecriptions for stock are constantly heing received.

As soon aa the grading is done and tiea furnished, it is expected that little difficulty will be experienced in obtaining the funde to lay the iron and provide the rolling stock.

The popular opinion ie tbat this road will become an important link hetween the Texae and Pacific and tbe Southern Pacific of California, and tbat it will also become the concluding portion of a road eventually to be constructed from Salt Lake to San Diego. Inquiry has, however, developed the fact that the Directora of the Company and Stockholdere, instead of trying to occnpy a valuahle route for the eake of heing bought off, or in order to get in the way of others, as has sometimee been hinted, are solely anxious to have the road constructed, and are laboring to induce capitaliste to see its importance. They are confident that their own means, invested in the enterprise, will not be thrown away, even though other parties may hereafter control it.

It is possible that the first forty or fifty miles of the route north of San Diego may be necessary for the use of tho Texas and Pacific, the Sau Diego and Los Angeles and the San Bernardino Roads. If surveys now under way prove this to he a fact, the nltimate construction of the road may be much hastened.

It is to he hoped that no other company will attempt to run these parties off the track, inasmuch ae they appear to be willing to enter into any arrangement for the use and the construction of their road that may he just and advantageous to the public interest.

There is, therefore, little doubt in the minde of the people but that the enterprise will succeed, striking, as it does, into tbe very heart of the country that is now to receive such an impetue from rival railroad efforts. From an outside point of view, it looks apparent that either Colonel Scott or Governor Stanford will eventually squeeze thie plum into their own pockets. In either case, the Company will not have worked in vain, as regards their private local interests.

Sacramento Earthenware.

In the city of Stockholm, the capital of Sweden, four years ago, the attention of the Bergman Brothere, practical and chemical potters, now proprietore of the Sacramento Pottery, in the vicinity of Sutter Fort, was drawn to a eample of California clay, exhibited in a cabinet designed for scientific purposes. So forcibly were they impressed with the value of California clay, they at once took passago for the El Dorado of the West. On reaching San Francisco the hrothere, ascertaining on inquiry that the hest clay lay in the vicinity of Sacramento, at once procceded thitber. They purchased an interest in the Sac rementa Pottery, of which they are now the sole proprietors. The utmost succese has attended their efforts, and Sacramento earthenware hae a world-wide reputation ae being superior to all others. The Bergman Brothere have heen so successful in hueiness that they sent to Europe for their father, mother, two brothers and a eister, all of whom arrived here about a month ago. The Bergman *pere* is in the prime of life, heing hut fifty-two years of age, and has a moet thorough knowledge of tbe qualifications of various kinds of clay. The old gentleman is delighted with California, especially Sacramento, and has hecome satisfied tbat for pottery and brick husinese California clay ie not excelled. During tho past two months there have heen hurnt at tbe Sacramento Pottery 2,000 gallons of etoneware. The proprietors are preparing for the manufacture of terra cotta and Rockingham and yellow-ware.

The reeult of a late prospecting tour was that they found in this county, ahont forty milee distant from the city, an excellent article of clay. In a ehort time the father and his two sone will start out on another proepecting tour, traverein the State from one end to tbe other, in eearch of a still hetter quality of clay, which tbey are eatisfied California posseeeee. Ae California clay is mixed more or lees with mineral, it requiree more manipulation than European clay; hnt when the foreign elemente are expunged it cannot he excelled. The Bergman Brothere have written to Sweden for two experienced pottere, and it is tbeir intention next eeaeon to enlarge their pottery to three times its preeent capacity. Tbe firm has no agency here or in San Francisco, there being no need of any, as the wares are sold as fast as tbey come out of the kiln. About two montbs ago there arrived from the East two car loads of earthenware, which the consignee eaid he had no use for, as Sacramento eupplied a mnch superior article.—*Sacramento Union.*

Stranoe if True.—In Oroville, a few days since, says the Marysville *Defender*, a white man and a Chinaman entered the tunnel of a mining claim to begin their day'e work. The tunnel was into the hill about 50 feet, and the men had heen to work in it eteadily since its commencement. The nsual time for the return of the Chinaman with the dirt having passed, those on the outside entered the tunnel and found them both dead. The miner was sitting on tbe whellharrow, his head on his hand, while the Chinaman was lying on tbe floor of the tunnel. The candle waa still burning, which adds to the mystery regarding their deaths. Had foul air been in tbe tunnel, the candle would have been extinguished.

Useful Information.

The Manufacture of Tea Trays in the United States.

It is only nntil rcecntly that the mannfactnre of japanned tea trays has been made a practical snccess in this country. It appears that there were two difficult objects to be secured: first, a finish that would retain its gloss; second, a sheet-iron eqnal in quality to the Russia sheet-iron. Even the English tray, in some instances, after exposnre to the atmosphere, has a blue caste—termed a bloom; and after thie change, will readily scratch. The Newark Tea Tray Company, however, now present a tray, the perfection of which is duo to Mr. Walter M. Conger, the inventor of an improved process for manufacturing and finishing these goods. Mr. C. is also manager of this company.

The iron used hy the company is made expressly for them by a Pittsburgh (Pa) iron firm, and the grade of this iron, it is said, is better than that nsed in the making of the English trays. In producing a tray the iron is cut in oval shape by means of a pair of circular shears, in the style and size required, from 10 to 28 inches in length. It is then placed under a large stamping prese; (three or four plates may he placed under this press at the eame time.) The drop-hammer of thie machine weighs 1,000 pounds, and in its fall is capable of giving a prossure of 36,000 pounds. The plates are now blank trays, the edges of which are turned down and wired by a very ingenious little machine. Each tray is then set. This is done hy hammering by hand, to take out any unsveuness that may exist in the metal. After this the trays are cleaned, and, if found free from defects, are ready to receive three coats of Japanning, and placed in an oven for twelve hours with a temperature of 500° F.

After coming from this oven they are rubbed down with pumice-stone and circular brushes run by steam-power, then ground; the last is a secret process. After thie the tray receives a coat of enamel composition. The utmost care is used in this process; the windows and doors of the apartment are kept closed; the floor immersed in water; the workmen not even permitted to wear any clothee, as the smallest speck of dust or lint would spoil the labor previously expended, and greatly depreciate the valne of the tray. The enamelling being completed, the tray is sent to another department for ornamentation. This work, though done mostly by boys, is a very tasteful operation. The tray is then baked about twelve hours, when it receives a coat of varnish over the ornamental edge only, to retain the ornamental designs, and baked again; this last process perfecting them for the storeroom, where each tray is examined, and those not up to the standard are rejected. They are then packed in paper bags, numbered and marked, and are ready for sale.

How Paper Stood the Fire in Boston.

Curious results have followed some of the experiments made upon charred papers and documents, and the examination of books in safes which proved worthless in the great fire. It has been found that what psper-makers call poor paper, paper considerably "clayed" stood the best test. Parchment paper, used for bonds and legal documents, shrivelled up exceedingly, and the print blistered so that it could he read when the writing was illegible. So it was with the engraved work on notes. The gilding on the account-books burnt and charred showed out as bright and clear as when the books were new, which brings up the question if to introduce gilt-edged account-books would not be well, on the ground that the gilt would stay the passage by fire to the pages within. Books crammed into a safe so that it was difficult to get them out, suffered considerably less than those that were set in loosely, and in some cases came out from safes in which everything else was worthless, so far preserved that the figures on the pages could be deciphered. With charred papers which could not be made transparent by any light whatever used, it was found, after the employment of vitriol, oxalic acid, chalk, glycerine, and other things, that anything that moistened them to a certain stage—to which it was delicate work to get and not pass—made the lines, words and figures legible through a magnifying glass. It has been the almost universal experience that the led-pencil marks show out all right when ink marks cannot be distinguished. The success of the use of photography has already been noted.—*Boston Advertiser.*

How to Detect Spurious Greenbacks.—An exchange gives the following: To discover spurious greenbacks or national bank notes, divide the last two figures of the number of the bill by four, and if one remains the letter of the genuine will be A; if two remain it will be B; if three, C; and should there be no remainder, the letter will he D. For example, a note is registered 2,461; divide sixty-one by four and you will have one remaining. According to the rule the letter on the note will be A. In case the rule fails, be certain that the bill is counterfeit.

Testing Wine, Beer and Vinegar.

Duclaux, briefly describing a system of testing the relative value of the liquids referred to, states that, when alcholic or acetic liquids are caused to pass drop by drop from a narrow orifice, these drops are heavier in relation to the larger quantity of alchol or acetic acid contained in the liquid under examination. Special apparatus are to be used for this method of testing.

The ordinary tests of wines are two kinds—the alcoholometer and tasting. The first is to prove how much alcohol the wine contains, and is based on the knowledge of the specific weights of absolute alcohol and water. Suppose a little glass is full from 1,000 grains of water, the same would get full from 792 grains of alcohol—it is one-fifth lighter than alcohol, and its resistance is immeasely less. For the purpose now of ascertaining the strength of wine, an instrument has been invented; it is a glass cylindor which, at the bottom end, is ball-shaped, containing mercury. The cylinder is marked off into 100 parts called grades. Now, if you sink the cylinder in a mixture of ten parts alcohol and ninety parts water, the liquid will reach the 10 grade, which shows that it contains 10 deg. of alcohol.

The other test is hy taste; the knowledge of which can only be acquired by time and experience. Suppose your judgment is required as to a wine; if it is Madeira, it would he necessary that you had tried the genuine Madeira, before and became, through taste and smell, fully acquainted with all its characteristics. So it is with all other wines.

Masonic Symbols as Trade-Marks.

Upon an appeal from the decision of the Examiner of Trade-Marks, Active Commissioner Thatcher has given a highly interesting decision in a case involving the use of Masonic symbole as a trade-mark:

He decides that, in view of the universality of Masonry, the mystic tie that binds all nations in one common fraternity, and the unchangeable characteristicts of emblems appealing with the same force to the brotherhood in all parts of the earth, it is impossible to divest these symbols, or at least this particular symbol, perhaps the best known of all, of its ordinary signification wherever displayed, either as an arbitrary character or otherwise. It will be universally understood or misunderstood as having a Masonic significance, therefore as a trade-mark must constantly work deception.

The Commissiouer adds: "I am clearly of the opinion, therefore, that the proposed combinations cannot properly subserve the ends of a trade-mark. Among Masons, with whom this token has a moral significance, its use in that capacity would undoubtedly be regarded as a base prostitution of it to mercenary purposes, while with others its mystic force would often dissipate its virtues as a trade-mark, and, perhaps, in some instances, place the article it appeared upon under a ban.

"Thus, if these trade-marks could be sanctioned they would tend to defeat the fundamental object of the trade-mark law, which is an offshoot of the ancient 'law merchant' and like that, designed to advance trade and manufactures."

For the above reasone the Commissioner decides that the Examiner of Trade-Marks was correct in his refusal to grant any exclusive use of any Masonic emblem as a trade-mark.

Separating Hair from Skins.—Some months since our attention was called to an English patent process which is in itself a matter of no small curiosity to tanners, and which promises to make very great changes in the future of the fur business. The patent is for a process for completely removing the hair from a hide or skin and transferring it exactly as it left the hide or skin to a piece of muslin or other substance, leaving the pelt entirely uninjured for future tanning and finishing into leather. The process is a very simple one; the operation is as quickly performed as ordinary unhairing with lime, and with no more expense.

Mr. Charles H. Isham, of New York, who has just returned from Europe, saw the artificial skins made by this process at the store of the patentees in London, and brought several specimens over with him, as well as figures showing the cost of making them and the prices at which they sell. He also visited their workshop, and saw that the work could be done very quickly and at a low cost, as claimed by the patentees.

Arsenic in Carpets.—Hallwachs asserts that not only green but red carpets contain arsenic, particularly those brilliant dark reds now so much in vogue. Samples of these carpets burned with the blue arsenic flame, gave off the characteristic garlic odor. Enough color to give a distinct arsenic reaction could be rubbed off with the finger. A solution in hydrochloric acid produced with copper the usual greyish precipitate of metallic arsenic.

Removal of Ink Spots.—When these are of long standing it is difficult to get them out, since the iron has become thoroughly peroxidized and must be reduced. The following is recommended:—Water ½ litre, hydrochloric acid 100 grms, tin salt 100 grms. Moisten the spot with this solution, keeping it moist until the color disappears, then rinse with water.

Good Health.

The Modern Idea of Disease.

In an address before the Clinical Society of London, Sir William Gull remarks as follows on the modern idea of the nature of disease:—

Respecting the object we work for—this living organism of ours—one great advance has of late been made. We are acquiring a physiological notion of disease. Disease is no entity; it is but a modification of health—a perverted physiological process; and this must at all times be insisted upon. Were it not that we fear death, and dislike pain we should not look upon disease as anything abnormal in the life-process, but to be as part and parcel of it.

Few would now venture on a definition of disease; for in reality it is but the course of nature in a living thing which is not health. In health the balance of function is even; incline it to either side and there is disease. That being so, just as the life process constitutes an individual and puts him apart from his fellows, so must any alteration in it be individual, and not general. But to the ignorant, disease is an entity—an evil spirit which attacks us and seizes us. Hence arises the word "seizure," which, though in a somewhat different way, we still use, but with a protest. To the charlatan, disease is a set of symptoms to be attacked by a variety of drugs—a drug for each symptom. To us, disease is a life-process of a perverted kind.

Many states are not now called diseases which used to be, and there are still some to be expunged. Some people are always ailing. Some have feeble stability, and to them it as natural to be ill as it is to others to be well; but this is not disease. So, too, aged persons get ill; but this is not disease—in reality it is natural change simulating disease, and when we try to cure such we see all the farrago of the chemist's shop to prevent the sun setting. So syphilis at last ceases in the system to be syphilis, and becomes an early decay.

It is curious to consider the various morbific agents at work within our bodies, the lines in which they work, and their seats of action. These as yet have been but little studied, and deserve attention. Thus, it is very doubtful if scarlatina begins in the blood, as we should all be apt to say, rather than in any other tissue or fluid. Let it be our object to find out where all these begin within the body, and how they enter the body.

In future, I hope, comparative pathology, which is just beginning to be studied, will teach us much; for in our bodies we men have many organs which are of little or no use to us, and are only relics of a former state of being. What, for instance, is the comparative anatomy of the tonsils? Were I to make a man, I do not think I would put tonsils in him. Yet these, and such like organs, in accordance with the general law, are more prone to disease than are the others which are of real use in the system.

I remember the case of a man who had a permanent vitelline duct. He had been out on a cold day, and the motion of the intestines twisted them in a mass round his persistent duct, and he died. I made a preparation of the duct, and wrote under it, "Cui vitam atque mortem dedit diverticulum." Every part of the body is alive, and has its own individual life and pathology, whether it be immediately required or not; only, if not required, it is more prone to disease than if it were. I could for instance, suppose a fœtus of four months going to the doctor and saying, "I am going all wrong; my Wolffian bodies are disappearing, and kidneys are coming in their stead." Yet that is as much a condition of disease as some of those conditions of which I speak.

Education and Health.—It is impossible that the mass of men can be healthy, and so moral and successful, without some knowledge of their structure, and of its laws, which they must obey or suffer. How can a young woman be called educated who is ignorant of physiology, of her duties as a mother, of the divine art of nursing? How many men know anything of the relations of waste and supply in the nervous economy? Why, not one man in a hundred knows even what the stomach is made for, and the other ninety-nine are constantly transgressing rules they have never learned. We may take the old parable of the apple in the garden as an illustration of the way men's stomachs make havoc with their moral sense. Not one man in a hundred knows or suspects that God made the air to be breathed. Every part of his house may be reeking with miasma, the cellar full of all evil, partitions clotted with dormant mischief, and he never dreams of it, but goes on nailing down his windows and listing his doors. If we could only see the air we have once breathed over! Even the architects of our public halls and theatres and churches have the crudest notions of ventilation.—*Henry Ward Beecher.*

Saliva a Cure for Rheumatism.—Some one writes to the editor of the *Medical Press and Circular* that he has repeatedly cured himself of rheumatism by rubbing the affected part with his own saliva. As saliva is too common to become an article of traffic, the new treatment is not likely to become popular.—*Pac. Med. Jour.*

To remove plaster of paris bandages, wet them with a strong solution of common salt.

To Sleep Soundly.

With many the inability to sleep, as a growing habit, is the first step toward certain madness; in every disease it is an omen of ill. Hence, to cultivate sound sleep, do not sleep a moment in the day time; go to bed at a regular hour, and never take a "second nap" after waking of yourself in the morning. Take nothing after dinner but a piece of bread and butter and one cup of hot drink—*not* China tea, as it makes many wakeful. Never go to bed with cold feet. Read nothing after supper, listen to nothing, talk about nothing of a very exciting character; avoid carefully every domestic unpleasantness, as to child, servant, husband and wife. Let no angry word be spoken or thought harbored for a single instant after teatime, for death may come before the morning light. Grown persons generally require about seven hours sleep in summer, and eight in winter. Few indeed, except invalids, will fail to sleep well who go to bed at a regular early hour, on a light supper, in a large room, and clean, comfortable bed, if there is no sleeping in the day-time, and not more than seven hours in any twenty-four are passed in bed. One week's faithful trial will prove this. Children, and all persons at school should take all the the sleep they can get, and should never be waked up in the morning after having gone to bed at a regular early hour. Every humane parent will make it a religious duty to arrange that every child shall go to bed in an affectionate, loving and glad spirit. If wakeful during the night, get up, draw on the stockings, throw the bed-cover to air it, walk the floor in your night gown, with the mouth closed all the while rubbing the skin briskly with both hands, until cooled off and a little tired. Except from August first to October first, in fever and ague localities, a chamber window should be open two or three inches in length.

The Unwearied Action of the Heart.

The effect of everything that touches the heart is multiplied by the intensity of the heart's own changes. Hence it is that it is so sensitive, so true an index of the body's state. Hence, also, it is that it never wearies. Let me remind you of the work done by our hearts in a day. A man's total outward work, his whole effect upon the world in twenty-four hours, has been reckoned about 350-foot tons. That may be taken as a good "hard day's work." During the same time the heart has been working at the rate of 120-foot tons. That is to say, if all the pulses of a day and night could be concentrated into one great throb, that throb would be enough to raise a ton of iron 120 feet into the air. And yet the heart is never weary. Many of us are tired after but feeble labors; few of us can hold a poker out at arm's length without after a few minutes dropping it. But a healthy heart, and many an unsound heart too—though sometimes you can tell in the evening by its stroke that it has been thrown off its balance by the turmoils and worries of life—goes on beating through the night when we are asleep, and when we wake in the morning we find it at work, fresh as though it had only just begun to beat. It does this because upon every stroke of work there follows a period, a brief but real period of rest; because the next stroke of which comes is not the natural suspense of that reet, and made to match it; because, in fact, each beat is in force, in scope, in character, in everything, the simple expression of the heart's own energy and state.—*Appleton's Journal.*

Endemic Dysentery in San Joaquin Co.—Dr. F. W. Todd, of Stockton, at the request of the Board of Health of that city, has drawn up an account of an epidemic of dysenteric disease, which has prevailed in Stockton and the adjoining country for the last three years. The report commences with a sketch of the topography of the country, its climate, water supply, etc. During the four months, from May to August, 1872, 251 cases are noted, with thirty-three deaths, and this does not include the practice of a number of physicians, from whom no returns could be obtained. Of the deaths, 25 were children, and eight adults, the latter mostly from the Insane Asylum. Dr. Todd inclines to attribute the disease to the great transition of temperature from day to day — no other cause being assignable. The best treatment consisted in large doses of ipecacuanha, from five to twenty grains. The paper is considered by the *Pacific Medical Journal* as very important and interesting.

Extreme Climatic Heat.—It is stated that owing to the extreme heat of the weather (120° F.) it was found necessary to bury the body of the late Professor Parrish on the day of his death. This was at Fort Sill, in the southwestern part of the Indian Territory. Many persons on this coast believe the climate of Arizona, near the head of the Gulf of California, to be the hottest in the United States, though the point above named, 120°, is the highest ever claimed for that locality. We can seldom rely, however, on the entire accuracy of the statements made in regard to extreme heat, as so much depends on the situation or exposure of the thermometer, and so few observers use proper precautions in this respect.—*Pac. Med. Jour.*

MINING AND SCIENTIFIC PRESS.

W. B. EWER.....SENIOR EDITOR.

DEWEY & CO., Publishers.

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San Francisco:
Saturday Morning, Dec 7, 1872.

Lsgal Tender Rates.—S. F., Thurs., Dec. 5—Buying, 88⅜; Selling, 89.

Table of Contents.

GENERAL EDITORIALS.—Mining Machinery, 360. Academy of Sciences, 364. The New Code Corporation Assessment Law, 361. ILLUSTRATIONS.—Steven's Furnace for Economizing Fuel, 353. The Stanton Ruby; The Late Horace Greeley; Boesoh's Reflecting Lantern, 360. Goat Island, 361.

MINING SUMMARY from various counties in California, Nevada, Arizona, Colorado, Idaho, Montana, and Utah; Market Reports, 364.

MINING STOCK MARKET.—Table of Daily Sales and Prices and Comparative Prices for the Week; Notices of Assessments; Meetings and Dividends; Review of Stock Market for the Week, 356.

MECHANICAL PROGRESS.—Testing Steam Bellers—An excellent Suggestion; Recording Sounds, Etc; New Methods of Stopping Leaks; American versus Foreign Leather Belting; Persevering Inventors; Statistics of the U. S. Iron Industry, 355.

SCIENTIFIC PROGRESS.—The Field of Knowledge; Variations in Spectrum Analysis; Crystallization; A New Fact with Regard to the Solar Corona; Action of Light upon Glass; A Tidal Watch; Possible Connection Between Cyclones and Sun Spots; Temperatnre of the Moon's Surface, 355.

USEFUL INFORMATION.—The Manufacture of Tea Trays in the United States; How Paper Stood the Fire in Boston; How to Detect Spurious Greenbacks; Testing Wine, Beer and Vinegar; Masonic Symbols as Trade-Marks; Separating Hair from Skins, 359.

GOOD HEALTH.—The Modern Idea of Disease; Education and Health; To Sleep Soundly; The Unwearied Action of the Heart; Endemic Dysentery in San Joaqnin County; Extreme Climatic Heat, 359.

MISCELLANEOUS.—Mineral Resources of Northwestern California: San Bernardino Couuty Mines; Indian Relics and Remains; New Mining Operation; Quicksilver Deposits—Are there any in Nevada; Nevada and Arizona, 354. San Diego and San Bernardino Railroad; Sacramento Earthenware; Strange if True, 359. Mining Assessment Law from the New Code; The New Oil Wells on the Ojai—Their Appearance and Prospect; Qneer Freak in a Mine, 362. Patents and Inventions; Notices of Recent Patents; Commission's Decisions; New Incorporstions, 364.

JAPANEGE PROGRESS.—A railroad abont 30 milee long ie now in operation bstwsen Yokohama and Yeddo, Japan. No donbt aftsr the Japaneee havs seen the practical working of thie most esssntial aid to civilization, the other parts of the country will want roads also. A beginning hae been made and we may now look to ees the country covered with railroade, and even gréater interest taken in machinsry of all kinds than heretofore. All thsse thinge augur well not only for Japan, but for the future of this Coast, since from hsre, no doubt, will the large proportion of hsr machinery bs sent. Some of tbe city foundries have already been sanding certain classes of machinsry to Japan, wbich will no doubt causs more to be ordersd.

AN ACT OF JUSTICE.—George D. Roberts and Henry Janin, who considered that it was through their recommsudation and influence that General J. W. Gashwilsr invested $40,000 in the diamond enterpriss, have returned to the latter gentleman $20,000 each to reimburse him for hie loss. Acts of thie kind so eeldom occur, that they are worthy of remembrance and comment.

MINING SALES.—According to the Jackeou *Dispatch*, the Downs mine, near Sutter Creek, hae been sold to Morgan & Co., for $400,000.

The Nevada county *Transcript* epeake of great activity in the tranefer of gravel mining property in tbat county, and thinks it is probable that $20,000 worth of property hae been transferred within 20 days. Good claims find ready market at good pricee, and there ie a growing confidence among capitalists in gravel mines.

EX-GOV. H. H. HAIGHT has been elected to fill the vacancy caused by the death of the Hon. Edward Tompkins in the Board of Regente of the California University.

A STOCK Board ie to be started in Grass Valley.

A NATION'S LOSS.

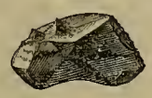
THE LATE HORACE CREELEY.

When our great and good men die, it is not unbscoming in us as a psople to grisve. Iu the recent death of HORACE GREELEY we lose one of the most noted men the nation has ever known. In the wide field of his varied usefulness, as a journalist, he etood in the front rank, for he had no equal. As a philsnthropist, he was lsrge-heartsd and possesssd of a noble courage. In his opinions, geuerally right, and in support of them, firm as adamant.

As an orator, patriot, statesman and politician, hs was earnest snd ambitious. As an agriculturist, his name will be remembered and honored. In his domsstic and social relations, ae kindly and genial as humanity permits; whilst not a shade of intsntional wrong has ever marred the fair fame of his great efforts for the public good, and in the lifting-up aud alleviation of suffering humanity. Aud now, after a lengthened, honorsd, earnest and eventful life, he sleeps, and the nation mourns.

The Stanton Ruby(?)

Through the kindness of Mr. Tucker we are snabled to present a natural sized cut of ihs famous $250,000 ruby(?) which Mr. Stanton brought from the diamond fislds of Colorado, a short time since. Its sizs and shaps, thongh somewhat irregular, is that of a small pigeon's egg and its color is amethystic blood red. After the sxpose of tbe diamond fraud, people who had firmly believed in ths value of this gem, hegan to bavs some doubts concsrning it. It was accordingly ssnt to be tested so as to settle the question. Mr. Stauton has iu his poesessiou a number of otber stones from the sams locality from which this one was obtained, in



tbe interest of the New York and San Francisco Diamond Company. The Denver *News* statsd that the gem weighed 16 carats, but its weight eeems visibly to have increased, since it is uow reported as weigbing 22 1-5.

Mr. Henry G. Hanks mads a partial examination of ths gsm this wsek and prouounced it a "spinelle," being without doubt of considerable intrinsic valus, but not posseseing the specific gravity or hardness of a ruby. Neither has it the electrical propsrtiee of a ruby. It was easily scratchsd with a sapphire.

Below we give some additional features from the report of Mr. J. S. Phillips on this gem.

It weighed 22 1-5 carats. Its specific gravity is 3.703. No feature of its crystallization can he now recognized. It is not so hard as the Ruby or any other stone of the Sapphire family, but its lustrous conchoidal fractures, still unworn hy attrition, are noteworthy characteristics, not only of sufficient heauty and hardness for perfect polish, hut of the uncrystallized, irregular granular form which the Pyrope almost invarlably possesses.

It has not beeu tested hy fire, or analyzed in any way, for fear of serious fracture, and detrimental change of color; hut the following specific gravities will serve to show that it comes near to the Splnelle Ruhy, Almandine, and Pyrope. Oriental Ruhy 4.284, Balas Ruhy 3.646, Brazilian Ruhy 3.531, Spinelle Ruhy 3.525 to 3.76, Common Spinelle, maximum, 3.585, Almandine 3.5 to 4.3, and Pyrope from 3.69 to 3.8. The qualitative examination of a similar, 2 grains, stone, hy hlowpipe, exposed the following elements and facts. When heated it failed to produce the peculiar green, as the Ruhy, hut on slowly cooling from hright red heat, it hecame almost hlack, and when quite cold resumed its original color.

A small piece was fused on naked charcoal, in the hlowpipe's flame, to a brilliant glasslike hlack globe which attracted the magnet.

The Rubies and Spinelles cannot be thus altered.

It contained Silica, Alumina, Magnesia, Iron, Manganese, and Chromic acid, which exactly agrees with Pyrope, and excepting the last (Chromic acid) with Almandine.

I am therefore of the opinion that these precious stones are Pyrope and Almandine, otherwise known as Ancient Hyacinths and Carhuncles, or the Precious Bohemian Garnet, Garnet Ruhy, &c., which are "much esteemed as precious stones."

J. S. PHILLIPS, M. E.

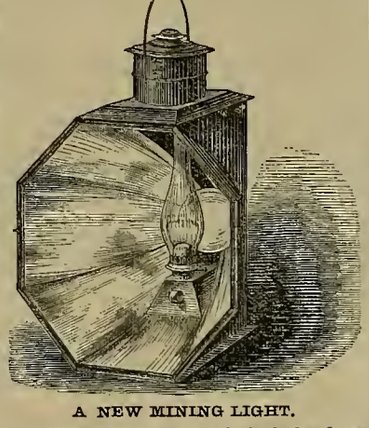
So aftsr all it is not a ruby, but appears to havs value ae a favorite gsm, for it has fins lustre and color, as well as sufficient solidity and hardness to admit of being highly polishsd by the lapidary.

Boesch's Reflecting Lantern.

By ths economy of nature our earth is covered with darkness one-half of tbe time, and were it not for the benefits which we derive from artificial lights, a large portion of our sxistence would be passed in a most unprofitabls and unpleasant manner. But tbanks to ths scientific and inventive world which have so thoroughly ovsrcome the darkness as to permit ths night, iu a great measure, to be turned into day.

Although ths facilities for lighting our dwellings, our strests aud our ordinary places of businsss and pleasurs are and have bsen abundant and cheap for yeare, yet we have never had a light such as would be suitabls for lighting up a large area with a single burner without entailing a largs expeuee for its maintainencs. This want was particularly felt in our hydraulic minss where it ie necessary to light np large and high banks during the night to enable the miner to dirsct the hydraulic stream effectively against it. Mr. Emil Boesch, of tbis city, knowing that such a light was required hae invented and sscnred lstters patent through the MINING AND SOIENTIFIC PRESS Patent Agsncy for the improvement represented by the accompanying cut.

The chief advantages of tbis lamp are first, the employment of an ordinary coal oil or other burner for giving the light; sscondly, in providing an abundant ventilation at the bottom,



A NEW MINING LIGHT.

top and rear so as to properly feed the flame with air and prevent ths interior of ths lamp from becoming eo hot as to break the glaes front; thirdly, in the employment of a focal reflector which can bs adjueted up or down or to either side according to the directiou in which it is desired to concsutrate the light, and fourtbly, in constructing the entire lamp in a couvenient portable form eo that it can bs moved from place to place readily when rsquired.

This lamp is mechanically eoustructed and is admirably adapted for lighting np mines, mills, halls, wharves and other opeu spaces. The inventor, Mr. Emil Boesch, is a practical lamp manufacturer, and is proprietor of ths large lamp factory on tbe corner of Pacific and Kearny streets, in this city. This, we believs, is tbe ouly lamp factory on tbis Coast. Mr. Boeech has procured a uumber of patents for improvements ou lampe, lanterns and reflectors within the past few years, through our Patent Agency, and has met with united succees as a pioneer in his business. The lamp represented by the engraving is meeting with a fair sale, and is giving much satisfaction. For furtber particnlars address Emil Boesch, N. W. corner Kearny and Pacific streets, this city.

PERSONAL.—We received a visit this week from Mr. J. A. Johnson, editor and proprietor of the Santa Barbara *Press*, one of our best interior exchanges. The *Press* represents in an able manner the iuterests of Sontbern California, and is a source of reliable information concerning the locality iu which it is published, as well as being very interesting on geueral topics.

THE DIAMONH SWINDLE looke worse and worse. We will give the chiefs their due wheu the investigation determines who are the guilty ones.

Mining Machinery.

In some parts of England it seems difficult to introduce nsw mining machinsry, the objectious heing only born of prejudice, not ignorancs, for the mining prsss of that country are very diligent in bringing before thsir readsrs improvemsnts in the appliances connected with the bueiness; and judging from the exhaustive reports in the papers, in vsry small type, and the correspondence called out by such reports, the miners and mining men support and read tbe papere which support their intersste in a very thorough manner. It is acknowledged that in some respects progress is slower in Cornwall than in other mining counties in the nortb. Old modes and practicee are clung to with tenacity, and thsre exists an unnsual amount of prejudice against new invsntione and appliauces. The more intslligent classes of ths community thsre, ae elsewhere, of course understaud the fallacy of euch notions and know that thsy must yisld to the necessitise of the times. Still we must confess that even on this coast where mining holds such an important position, an unwarranted prejudice exists against the majority of new processss and machines which ars intendsd to facilitate opsrations. Nsvsrtheless, when once the value of any of thsss invsntious is *proved* by actusl, practical work it finde favor. Nor must its success be a local one, for the processes and machinsry of ths old world, if more applicable than thoee invented and used hers, are applied in certain localitiss, whsre they are specially useful.

Judging from the accounts in the Englisb press, and mors particularly the *Mining World* of London, this is not

The Case in Cornwall.

Ssveral mechanical appliances, well known here, have bsen introduced with great advantage in many othsr parts of England, but still do not find favor in tbat county which, though long cslebrated for its pumping engines, and well posted *practical* miners, has mads very little advancs in miuing machinsry for driving for, or dreseing ores. Ths Burleigh Drill, which bas been found so effective here and in the East, as wsll as many parts of Europs, is not in use iu Cornwall, whsre proof of its economy bae not sufficed to introdncs it. There are only two stone-breakere iu tbe county, and the first one of these, in tbe Terras mine, would not have come so soon, according to ths *Mining World*, but for the euterprise of an Amsrican gentleman. Girls are kept at work which tbe rock-brsaksr could do with lsss expense and greatsr efficiency. The same papsr ssys some improvemeuts have been made in dressing machinery, but it is far from perfect.

Much complaint is made abont the falling off from former daye in the effectiveness of tbe Cornish engines, for which various reasons are given. First, that ths enginesrs are not allowed the eams control over the machinery as formerly. Second, that the engine-men employed are in most cases either crippled miners, shoemakers, tailors or othsr broken-down artisane who know nothing about an engine; and something may bs attributed to the quality of ths coal used. The deptb of many of the mines, the aged and consequeutly defective machinsry, and the almost constant stream of emigration from Cornwall ie causing it to retrograde, and the *World* calls on all interested to mest the evils. It very sensibly takss the ground that machinery for all mining purposes must to a certain extsnt euperseds laborers as it has already done iu large mannfacturing districts. It quotee from a correspondent, who calle for stockholdere generally to contribute towards giving handsome premiums for improvemeuts iu different departmente, and at tbe same time try and convince many of the superintendents that they are not in posesession of so much useful scientific knowledge as they think, wheu it may act as a stimulus further to acquire more.

It seems as though many of our mining men must be descendants from the prejudiced Cornish miners referred to by tbe *World*, for we well know with what difficulty, generally speaking, inventors introduce their appliancee until they are thoroughly tested. Oftentimes they are, if impecunious, as is generally the case, several yeare in getting eome one to try their machinee or proceeses. It is probable that this will never be obviated uutil we have

A Mining School

On a scale which will afford advautagee for

testing, comparatively and practically, new inventions and processes, and which will furnish data of all snch experiments to snch as may need them. Now, sucb data are difficult to get and are not always considered reliable. The great loss of the precious metals, even with our advanced systems of amalgamation and reduction, calls for more satisfactory machinery than is at present in use. The acknowledged waste is enormous, and the wonder is that tho miners of this coast have done as well as they have under the systems in vogue. We hope, some day, to see an institution fonnded whicb shall have special care of snch questions as these, as tbey are of national importance. Perhaps then some of our woalthy mine owners, if convinced that there will ho any profit to themselves, may combine to offer premiums for machinos or processes which shall bo improvements on those iu use, so as to call the inventive genins of the country into requisition to remedy existing evils. Genius is proverhially poor; with inventors it is a chronic complaint, and unless inducements are held out to them in this partioular department our progress in the mechanical appliances of mining will be slow.

In this connection we may remark that dynamite, or

Giant Powder,

Which is a great success in mining operations on this coast, is just heginning to attract the attention it merits in England. There they are now carrying on exhaustive experiments with it to test its efficacy. Here we have practically proved its valne, and the largely increased consumption shows that it is properly appreciated. When this substance was first introduced in our mines there was a great cry raised about its dangerous qualities and poisonous fumes; and in connection with the question of single and donble handed drilling caused considerable trouble and a few "strikes." This whole matter was commented upon at length in our columns at the time, and we tried to show the mining commnnity that its nse would prove beneficial not only to the miue owner but to the lahorers. The Grsss Valley *Union*, of the 20th nlt., in speaking of the demand for skilled labor and of a particular mine which offered advanced wages for it, says that these higher rates were offered for men to nse single handed drills and Giant Powder. Suppose an assertion to tbat effect had heen made a few years ago! The idea would have heen scouted. But it now appears that single hand drills and the Giant Powder do not knock down wages; nor do they lessen the demand for minors. On the other hand, says the *Union*, more men are wanted now than over before in the history of miuing in that part of the country and better wages are offered. The usual effect of all improvements follows here, as it has always followed improvements everywhere and iu every age of the world. Improvemonts in machinery or iu material do lighten the hurdens of lahor and pay the lahorer better for his light labor than he was paid when he had to toil the harder. The miners ought to hegin to see that improved agents for production make a greater and a better demand for labor. It is to be hoped that miners will see the advantage of using this substance in their operations, since it has proven so heneficial, and really, as will he seen hy what has been given above, has become a blessing rather than a bane to laboring men.

Goat Island.

The accompanying illustration represents Goat Island, the famous bone of contention between the Railroad Company and San Francisco. The view shows only the eastorn and lower end of tho island, with the military post located there, and was taken from the high southerly point looking northerly. The proper name for the island is Yerba Bnena, a Spanish name meaning "good herb," a plant which grows in ahundance upon it and which was supposed hy the Mexicans to ontain medicinal virtues. The place is now used as a military post, heing a Government reservation. It lies between Oakland and San Francisco, to the left of the ferry route between those placos ahont half way between both shores; it is, however, in reality nearer to Oakland, since the shoal water on that side permits the building of wharves very close to it.

YERBA BUENA OR GOAT ISLAND, IN SAN FRANCISCO BAY.

The famous "flats," where it was supposed the Railroad Company contemplated huilding a new city to rival San Francisco, lie just off and around the point seen near the right of the picture, embracing some two or three hundred acres of shallow water. The Central Pacific Railroad Co's wharf, whence the overland passengers are ferried across to San Francisco, lies just in range of and heyoud the heavy foliage shown on the extreme right.

The island is a prominent land mark in the hay. Its shores were formerly a favorite resort for fishing parties, but since its occupation hy the Goverument, and people are not allowed the freedom of the place, this has heen discontinued.

Utah Items.—All kinds of busiuess is reported brisk in Utah, and very little snow in the miuing districts. About 200 tons of ore per day are received in Salt Lake City from Little Cottonwood, and heavy receipts of bullion from the South for New York. Some ore is also being sent to Pittsbnrgh. A corporation entitled the "Salt Lake Iron Company," capital, $1,000,000, has heen organized in New York. They have bonght out the Salt Lake Iron Works.

Mare Island.—One day last week a wholesale discharge and snspension took place at the Mare Island Navy Yard. It included nearly all the men in the construction department and six of the foremen.

Proposals for Building Materials, Etc.—We wonld call the especial attentiou of mechanics and contractors to the proposals advertised in another colnmn for materials and work for the new City Hall huilding, in this city. Heavy calls are made for brick, lime, iron wood, etc.

The New Code Corporation Assessment Law.

This law will come in force on the

First of January, 1873.

In tbe reqnirements for advertising there is no change. There are several alterations from the old law, however, which should be generally kuown, and we have therefore published it in full on page 358, of this issue. It will also be printed with a convenient table of dates for weekly advertising and circulated free from tbis office. The following are the principal

Changes from the Old Law Regarding the Levying and Collecting of Assessments:

No one assessment shall exceed "five" per ceut. is changed to "ten" per cent. The word "Directors" is snbstituted for "Trustees."

In the form for assessment notices the "location of principal place of business" is stated instead of "location of works."

Iu the section providing that the Secretary "shall sell, or cause to he sold," the following words (referring to the Secretary) "who is herehy fully empowered and authorized" are stricken out—prohably hecause they were considered simply as superfluous.

It is provided that the dates fixed in notices of assessments and sales may be "from time to time extended for not more than 30 days," instead of "once extended for a period of not more than 30 days."

In this notice we refer only to the requirements for advertising notices of assessments and sales, and the changes in that part of the new law referring especially to levying and collecting assessments.

Fire.—The cinders and sparks from the stacks of the Ruby Consolidated furnaces bas set fire to the wood pile of the Phœnix Smelting Works several times recently. Changes are heing made at the Ruby furnace to prevent a recurrence of the accidents.

The Quicksilver mine, at Mount Pleasant, Monterey County, is reported in a prosperous condition. Reduction works are to be erected.

Mining Assessment Law from the New Code.

Directors may levy assessments. The Directors of any corporation formed under the laws of this State, for the purpose of paying expenses, conducting business, or paying debts, may levy and collect assessments upon the capital stock thereof, in the manner and form and to the extent provided herein.

Limitation. No one assessment must exceed ten per cent. of the amount of the capital stock named in the articles of incorporation, except in the casss in this section otherwise provided for, as follows:

How levied. 1. If the whole capital of a corporation has uot beeu paid up, and the corporation is unable to meet its liabilities or to eatisfy the claims of its creditors, the assessment may be for the full amount unpaid upon the capital stock; or if a less amount is sufficient, then it may be for such a percentage as will raise that amount;

2. The Directors of railroad corporations may assess the capital stock in installments of not more than ten psr cent. per month, unless in the articles of incorporation it is otherwise provided;

3. The Directors of fire or marine insurance corporations may assess such a percentage of the capital stock as thsy deem proper.

Levy of assessment. No assessment must be levied while any portion of a previous one remains unpaid, unless:

Old assessment remaining unpaid. 1. The power of the corporation has heen exercised in accordance with the provisions of this Articlo for the purpose of collecting such previous assessment;

2. The collection of the previous assessment has been enjoined; or

3. Ths assessment falls within the provisions of either the first, secoud or third subdivision of Section 332.

What order shall contain. Every order levying an assessment must specify the amount thereof, when, to whom, and where payahle; fix a day, subssquent to the full term of publication of the assessment notics, on which the unpaid assessment shall be delinquent, not less than thirty nor more than sixty days from the time of making the order levying the assessment; and a day for the sale of delinquent etock, not less thau fifteen nor more than sixty days from the day the stock is declared delinquent.

Notice of assessment. Upon the making of the order, the Secretary shall cause to he published a notice thereof, in the following form:

Form. (Name of corporation in full. Locatiou of principal place of husiness). Notice is hereby given, that at a meeting of the Directors, held on the (date), an assessment of (amount) per share was levied upon the capital stock of the corporation, payable (when, to whom, and where). Any stock upon which this assessment shall remain unpaid on the (day fixed) will he delinquent and advertised for sale at public auction, and, unless payment is made before, will be sold on the (day appointed), to pay the delinquent assessment, togother with costs of advertising and expenses of eale.

(Signature of Secretary, with location of office.)

Publication and service. The notice must be published once each week for four successive weeks, in some daily or weekly paper puhlished at the place designated in the articles of incorporation as the principal place of bnsiness, and also in eome paper puhlished in the county in which tho works of the corporation are situated, if a paper is published therein. If the works of the corporation are not eituated within some State or Territory of the United States, then publication in a paper of the place where situated is not necessary. If there is no newspaper published at the place designated as the principal place of business of the corporation, then the publication must be made in the newspaper published in an adjoining county. The notice may be served by delivering a copy thereof, certified by the Secretary, to each stockholder personally; and in case of such service upon all the stockholders of the corporatiou, no notice by publication is necessary, but such personal notice is sufficient.

Delinquent notice. If any portion of the assessment mentioned in the uotice remains unpaid on the day epecified thereiu for declaring the stock delinquent, the Secretary must, unless otherwise ordered hy the Board of Directors, cause to be puhlished in the same papers in which the uotice hereinbefore provided for shall have been published, a notice eubstantially in the following form:

Form. (Name in full. Location of prinoipal place of business). Notice.—There is delinquent upon the following described stock, on account of assessment lovied on the (date), (and assessment levied previous thereto, if any), the several amounts set opposite the names of the respective shareholders, as follows: (Names, number of certificate, number of ehares, amount). And in accordance with law (and an order of the Board of Directors, made on the [date], if any such order shall have heen made), eo many sharee of each parcel of such stock as may be necessary, will he sold, at the (particular place), on the (date), at (the hour) of euch day, to pay delinquent assessments thereon, together with costs of advertising and expenses of the sale.

(Name of Secretary, with location of office.)

Conteuts of notice. The notice must specify every certificate of stock, the number of shares it represents, and the amount due thereon, except where certificates may not have been issued to parties entitled thereto, in which case the number of shares and amount due thereon, together with the fact that the certificates for such shares have not been issued, must be etated.

How published. The notice, when published in a daily paper, must he published for ten days, exclnding Sundays and holidays, previous to the day of sale. When published in a weekly paper, it must be published in each issue for two weeks previous to the day of sale. The first publication of all delinquent sales must be at least fifteen days prior to the day of sale.

Jurisdiction acquired, how. By the publication of the notice, the corporation acquires jurisdiction to sell and convey a perfect title to all of the stock described in ths notice of sale upon which any portion of the assessment or costs of advertising remains unpaid at the hour appointed for the sale, but must eell no more of such stock than is necessary to pay the aessessments due and costs of sale.

Sale to be by public auction. On the day, at the place, and at the time appointed in the notice of sale, the Secretary must, unless otherwise ordered by the Directors, sell or cause to be sold at public auction, to the highest hidder for cash, so many shares of each parcel of the described stock as may be necessary to pay the assessmeut and charges thereon, according to tbe terms of sale; if payment ie made hefore the time fixed for sale, the party paying is only required to pay the actual cost of advertising, in addition to the assessment.

Highest bidder to be the purchaser. The person offering at such sale to pay the assessment and costs for the smallest number of shares or fraction of a share is the highest bidder, and the stock purchased must be transferred to him on the stock books of the corporation, on payment of the assessment and costs.

In default of bidders, corporation may purchase. If, at the sale of stock, no bidder offers the amount of the assessments and costs and charges due, the same may be bid in and purchased hy the corporation, through the Secretary, President, or any Director thereof, at the amount of the assessments, costs, and charges dne; and the amonnt of the assessments, costs, and charges must he credited as paid in full on the books of the corporation, and entry of the transfer of the stock to the corporation must be made on the books thereof. While the stock remains the property of the corporatiou it is not aseessable, nor must any dividends be declared thereon; but all assessmeuts and dividends must he apportioned upon the stock held by the stockholders of the corporation.

Disposition of stock purchased by corporation. All purchases of its own stock made by any corporatiou vest the legal title to the same iu the corporation; and the etock so purchased is held subject to tho control of the stockholders, who may make such disposition of the same as they deem fit, in accordance with the hy-laws of the corporation or vote of a majority of all the remaining shares. Whenever any portion of the capital etock of a corporation is held by tho corporation hy purchase, a majority of the remaining shares is a majority of the stock for all purposes of election or voting on any question at a stockholders' mesting.

Extension of time of delinquent sale. The datss fixed in any notics of assessment or notice of delinquent sale, published according to the provisions hereof, may be extended from time to time for not more than thirty days, by order of the Directors, entered on the records of the corporation; but no order extsnding the time for the performance of any act specified in any notice is effsctual unless notice of such extension or postponement is appended to and publishsd with the notice to which the order relates.

Assessments shall not be invalidated. No assessmeut is invalidated by a failure to make publication of the notices hereinbsfore provided for, nor by the non-perfo:mance of any act required in order to enforce the payment of the same; but in case of any substantial error or omission in the course of proceedings for collection, all previons proceedings, except the levying of the assessment, are void, aud puhlication must be begun anew.

Action for recovery of stock, and limitation thereof. No action must he sustainsd to recover stock sold for delinqusnt assessmeuts, upon the ground of irregularity in the assessment, irregularity or dsfect of the notice of sale, or defect or irregularity in the sale, unless the party seeking to maintain such action first pays or tenders to the corporation or the party holding the stock sold, the sum for which the same was sold, together with all subsequent asssssments which may have been paid thereon and intsrest on such sums from the time thsy were paid; and no such action must be sustained unless the same is commsnced by the filing of a complaint and the issuing of a summous thereon within six months after such sale was made.

Affidavits of publication. The publication of noticss required by this Article may be proved by ths affidavit of the printer, foreman or principal clerk of ths paper in which the same was published; and the affidavit of the Ssoretary or auctioneer is primary evidence of the time and place of sale, of the quantity and particular description of the stock sold, and to whom and for what price, and of the fact of the purchase money bsing paid. The affidavits must be filed in the office of the corporation, and copies of the eame, certified by the Secretary thereof, are primary evidence of the facts therein stated. Certificates, signed by the Secretary and under the seal of the corporation, are primary evidence of the contents thereof.

Affidavits of sale.

To be filed.

Waiver of sale. On the day specified for declaring the stock delinquent, or at any time subsequent thereto aud before the sale of the delinqnent etock, the Board of Directors may elect to waive further proceedings nnder this Chapter for the collection of delinquent assessments, or any part or portion thereof, and may elect to proceed by action to recover the amount of the assessment and the costs and expenses already incurred, or any part or portion thereof.

Action to recover assessment.

The New Oil Wells on the Ojai--Their Appearance and Prospect.

For several years says the Ventura *Signal*, tbe vast petroleum producing region lying between Point Concepcion aud the San Fernaudo Mountains, embracing a lougitudinal exteut of over 100 miles, has been a ficld of great interest to the scicntist and to a few practical oil miuers. But while all are agreed as to their wonderful extent and prospective value, and altbough much money and time has been expended in experiment, very little has as yet been done towards practical development. Tbis want of success ie mainly attributable to two facte—the principal and most formidable beiug the great dissimilarity in tbe geological structure of thie and all other knowu oil-produciug regions, and the other the exorbitant cost of labor and all material necessary in extracting aud refining. The want of a market for the crude petroleum, sucb ae is afforded in the Eastern States and Europe, has also been a eerioue drawback.

But all of these and other obstacles in the way of succese are vaniehing, and the day is not distant when the petroleum and asphaltum of Southeru California will be one of her principal sources of wealth. We hazard nothing in the statemeut that, if all the oil now running to waste on the Ojai, ex-Mission and Sespe ranches, lying between the San Buenaventura and Santa Clara rivers, were saved and put into tbe market, even at the present low price ($4 per barrel), it would bring more money into Ventura county than all her barley and wool crops.

But we only set out to speak of the new borings lately begun by tbat veteran oil miner, Cbas. Stott. The location of hie works is on the Ex-Mission, about 18 milee east of tbis place, aud at the extreme soutbern base of the oil-bearing belt, which, at this point, is some three or four miles wide. It is also at the base of Sulphur Mountain, near the point of its bisection by tbe Santa Paula Creek, a large, never-failing mouutain etream. Ascending a few feet from the creek bottom on to a beautiful table land, the road leads over it a mile or more and enters a pretty, funnel-shaped little valley, where the wells are situated. It is as secluded and charming as a hermit could wish; tbe hills on every side, except at the entrauce, are precipitons, grass-covered, and about 1,000 feet iu hight. They are treelees and shrubless, but just to the north a few hundred yards is a grove of fine oaks. Tbe first thing that attracts attention is the "villainous smell" of oil, tbe enormous deposits of asphaltum, and the oozing, bubbling, black, sluggish rivulets of petroleum. These mineral tar spriugs break fortb from the base almost to tbe summit of the hills in a hundred placee. The principal rock, which in placee is exposed to the surface, and which is apparently the oil bearing measure, ie a soft, stratified argillaceous clay slate, with an inclinatory dip to the north of about 60°. No deviation from this forniatiou is perceptible at this point except in a single instance, where, at an elevation of about 100 feet above the lower springs, a single stratnm of sandy slate protrudes, being only a few feet iu width, and having the same etrike and dip as the surrouuding formation.

In thie little, oleaginous nook, G. S. Gilbert, Sr., collected and distilled petroleum as early as 1854; and abont the same time Juilo Peralta dug pits, gathered the miueral and carried it to the works of the Philadelpbia Compauy at Camuloe. But it did not pay, and was soon abandoned. In 1866 Mr. Stott began operations by running a tunnel and erecting refining works on a small scale. Having made a few thousand gallons of buruing oil, he, too, gave it up for a bad job, but never lost faith in ultimate success. Giving up tbe tunnel which had been run, including the open cut of 350 feet, he began siuking the well known as No. 1, "going slow" and feeling his way, ae "a burnt cbild dreads the fire." Having under every difficulty and discouragement, attained a depth of 50 odd feet, and meeting with but a small flow of oil—about two barrels per day—he started well No. 2, only a few rode from the first. Thie was bored 80 feet, but affords only a small quantity of oil, and rather "heavy" at that. No. 3 was tben commenced and is still under way, being eome 60 feet in depth and produciug about two barrels of good oil. In August the fourth boriug was started and put down to a deptb of 87 feet, when a flow of eight or ten barrele was obtained, and of au unusually fine quality. This is beginniug to realize the Major's long cberished hopee. These four wells have been sunk by himself and son with from one to two assistante, and witb but little outlay of money. They are untiring workere eanguine in the belief, and certainly with great reason, that millions lie stored in tbose hills only awaiting development. All who know of their toils and disappointments rejoice at their final success and future prospecte. The seeker after knowledge or pleasure will alwaye find the latch-string of their hospitable miner's cabin on the ontside, and a kindly welcome. There is no point of greater interest than these oil regions, and the wonder is that they are not better known.

Queer Freak in a Mine.—Under this heading tbe San Diego *World* hae the following:—From a gentleman who lately got down from Julian District, we learned of some singular developments that lately took place in San Diego No. 1. The boys have been working the mine for some three years. It is on tbe line of tbe Helvetia. Tbe first shaft was sunk one hundred feet, when a copious epring of water wae reached. On this level fair rock was struck that averaged thirty dollars a ton. Tbe ehaft wae coutinued till a depth of one hundred and eeventy feet was reached. The water followed and tbe mine filled up so rapidly that the boys bad to euspend work. They had got througb the blue gouge on the footwall when operatious came to a stand-etill. The water rose rapidly to a hight of three or four sets of timbers. In a few days a descent was made to ascertain how mattere looked. Two sets of timbers were found afloat in the shaft. They at ouce went to bailing out, aud a siugular discovery was made. The blue gonge had all slacked from the walls, and they stood fully twelve feet apart. They were beautifully hard and smooth.

This is a very singular and a very rare occurrence. Our informant says he uever knew of a circumstance of the kiud except in the Eureka mine, in Grase Valley. The miners are firuly persuaded that they have struck the "mother mine" of the wbole Julian and Banner district. In this lower shaft some quartz was struck, with iron pyrites at the bottom.

Tbe boys fully believe that they have but to persevere to strike something very rich. They are determined to follow the fissure, if it takes them five hundred feet into the bowels of the earth. Owing to the rapid flow of the water they are obliged to suspend work until they have secured an apparatus for pumping out the mine. We shall watch further developmente in tbis mine with curiosity.

Business Cards.

H. C. BENNETT,
STATISTICIAN.
Reports and estimates made about all departments of Production, Commerce, and Manufactura, of the Pacific Coast. 5v24-tf

AMOS BOWMAN,
Mining and Topographical Engineer.
No. 637 Kearny Street, near Clay. Residence, 17 Rondel Place (Mission and 16th). ac19

RICHARD H. STRETCH, Civil Engineer,
City and County Surveyor.
Office—Room 16, City Hall. 11v24-3m

GILES H. GRAY. JAMES M. HAVEN.
GRAY & HAVEN,
ATTORNEYS AND COUNSELORS AT LAW,
In Building of Pacific Insurance Co., N. E. corner California and Leidesdorff streets,
SAN FRANCICO.

JOHN ROACH, Optician,
429 Montgomery Street.
S. W. corner Sacramento.
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N. P. LANGLAND,
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SCROLL SAWYER.
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And No. 9 Q St., bet. First and Second,
21v23-tf SACRAMENTO.

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BARTLING & KIMBALL,
BOOKBINDERS,
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CORDAGE COMPANY.
Manila Rope of all sizes. Also, Bale Rope and Whale Line constantly on hand. Tarred Manila Mining Ropes of any size and length manufactured to order.
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Masonic, Army and Navy Goods a Specialty.
22v24-3m

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SEAL ENGRAVER,
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OF SAN FRANCISCO.
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25v20-qy

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OAKEY'S EMERY AND GLASS CLOTH.
OAKEY'S CABINET GLASS PAPER, BLACK LEAD, etc.
OAKEY'S GOODS SOLD EVERYWHERE by Ironmongers, Grocers, Oilmen, Brushmakers, Druggists, etc. 21v25-1y

The California Powder Works

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Manufacturers and have constantly on hand
SPORTING,
MINING,
And BLASTING
POWDER,
Of SUPERIOR QUALITY, FRESH FROM THE MILLS. It being constantly received and transported into the interior, is delivered to the consumer within a few days of the time of its manufacture, and is in every way superior to any other Powder in Market.
We have been awarded successively
Three Gold Medals
By the MECHANICS' INSTITUTE and the STATE AGRICULTURAL SOCIETY for the superiority of our products over all others.
We also call attention to our
HERCULES POWDER.
Which combines all the force of other strong explosives now in use, and the lifting force of the BEST BLASTING POWDER, thus making it vastly superior to any other compound now in use.
A circular containing a full description of this Powder can be obtained on application to our Office.
16v20-3m JOHN F. LOHSE, Secretary.

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ROCK DRILLS
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AIR COMPRESSORS.

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Declared by Connoisseurs to be the only good SAUCE
Caution Against Fraud.
The success of this most delicious and unrivelled Condiment having caused certain dealers to apply the name of "Worcestershire Sauce" to their own inferior compounds, the public is hereby informed that the only wey to secure the genuine is to ASK FOR LEA & PERRINS' SAUCE, and see that their names are upon the wrapper, labels, stopper and bottle.
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FULL PARTICULARS GIVEN ON APPLICATION.
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Of all sizes and in any quantity, furnished to order. Full instructions sent for operating. Particular attention given to plating goods for Builders, Plumbers, etc. Hotel and Restaurant work replated.
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These Machines Stand Unrivaled.
For rapidity pulverizing and amalgamating ores, they have no equal. No effort has been, or will be spared to have them constructed in the most perfect manner and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.
They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.
This Amalgamator Operates as Follows:
The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the apperture and between the grinding surfaces.—Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powdsr, and the metal amalgamated.
Setlers made on the same principle excel all others They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.
Mill-men are invited to examine these pans and setlers for themselves, at the office, 229 Fremont Street,
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Self-Feeding and Self-Discharging
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For the reduction of ores, dry, to an impalpable powder or any given fineness, are made of any capacity—4, 6, 10, 20 or 50 tons per day. The reducing material is quartz from mine working upon coarsely-crushed ore from batteries or other machinery. No ore discharged for amalgamating that does not pass through wire cloth having eight thousand and one hundred holes to every square inch of surface.
The practicability of these barrels are established by the working of hundreds of tons of ore. Several are now building at the Miners' Foundry and can be seen by those interested. For particulars appy to
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These bags, by virtue of a patent lining, prevent ore siftings, and are the most durable bags used.
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Standard sizes of railroad Car Wheels, with special patterns for Mining Cars. These small wheels are made of the best Car Wheel Iron, properly chilled, and can be fitted up with the improved axle end box—introduced by this company, and guaranteed to outlast any other wheels made in this State.
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Academy of Sciences.

The regulsr semi-monthly meeting of the California Academy of Sciences was held Monday evening. The following new membere were elected: Henry F. Williame, J. D. Pierson, Dr. John M. Willey, Barington Gethen, Richsrd Gird and Richard L. Ogden. The donstione to the cabiuet were made as followe: Specimene of Pscific Coast woods, from G. W. Harford, among them California yew, Western dogwood, hemlock, *Taxus brevifolia*, maple (large leaf), giant arbor vitæ, Pacific alder, white fir, vine maple, yellow Alaska cedar and wild cherry. Wm. Burling presented a specimen of precipitated copper from a mine at Copperopolis. The ehaft had become filled with water, and the copper held in solntion was precipitated upon a pick lying in the bottom. The iron had been entirely consumed and the mass of copper had cemented with it pieces of chipe, etc. Professor Davidson presented a collection of insects from the Sierra Nevadas; and Mr. Dursnt a Map of Pioche Mining District. Dr. Blake read an interesting paper on the

Barometric Anomalies in the Great Basin.

In a paper read before the Acsdemy a few weeke since on the hight of the divide between the watere of the Great Basin and the Columbia, Dr. Blske stated that the barometrical observstions he msde at Winnemucca, as compared with those of the snmmit, gave a difference of level between these two pointe about one hundred feet less thsn had been messured in the trigometrical eurvey of the Central Pacific Rsilroad, and also thst a few observations msde at Verdi at the same time by Profeesor Davideon had ehown almost as great a difference between the hight of that station as meaeured by the bsrometer or by direct levelling. In endeavoring to account for thie discrepancy between the resnlts of these two methods of measuring, the Doctor was led to aecertain the effects of the direction of the winds on the comparative hight of the barometer at the two etations, and although he could find nothing in the direction to explain the anomaly ahove slluded to, yet his inquiries led to the discovery of an interesting fact which, if it should be verified by further investigation, forms a remsrkable exception to the usual daily fluctuations of the bsrometer.

As a usual thing the barometer is subject to diurnal chsnges, so that there are two minima, one at 9 A. M. snd the other at 9 P. M.; and two minima at 3 P. M. and 4 A. M. The Doctor found that during the prevalence of southerly winds his obeervations showed the normal diurnal ries and fall of the barometer, the meau of the observations at Puebla giving 7 A. M., 25.468; at 2 P. M., 25.393; at 9 P. M., 25.479; and at the summit of the same place, at 7 A. M., 23.233; at 2 P. M., 23.217; at 3 P. M., 23.276.

During the prevslence of northerly winds, the regular diurnal rise and fsll of the barometer is apparently reversed, the maxima occurring at 2 P. M., and the minima at 7 A. M. and 9 P. M. The mean of the observations during the prevalence of the northerly wind, giving for Puebla, st 7 A. M., 25.569; at 2 P. M., 25.576; at 9 P. M., 25.494. For the eummit, at 7 A. M., 23.305; at 2 P. M., 23.361; at 9 P. M., 23.293.

During the time these observations were being msde the weather wae fine, there beiug no unnsual atmospheric distnrbance, the north snd south winds alternating, as they ueually do in this part of the country during the month of June. The obeervations extended ovcr eighteen days, ten days of north winds, snd eight days of eonth. Theee observations, few as they are, evidently indicste certain anomalies in the movements of the barometer in this portion of the continent, which must render the inetrument a very unsafe means for determining highte; a conclnsion which Mr. Gardiner informed Dr. Blake, had been fully verified by him during his survey on that portion of the Fortieth Parallel, which lies iu the Great Basin.

Other Baromelric Eccentricities.

Dr. Gibhons addreesed the Academy in reference to the irregular indicatione of the barometer on this Coast, and illustrated his remarka with diagrams. He had noted here the passage of the barometric wave observed iu the Eastern States and Europe, which every year preceded the advent of winter. But in this part of the continent, the rise and fall of the barometer, as indicating the character of the weather to follow, seemed to be entirely unreliable. The heavy rain which set in on Friday last, the 29th ult., was preceded by a rapid rising of the barometer for four or five hours. While the rain continued, the barometer remained steady, aud its deseent on Saturday and Sunday was followed by heavy fogs. The speaker remarked that the barometer was indulging its usual eccentricities that evening, but what it meant was beyond the power of human discernment to determiue.

Letter from Professor Tyndall.

The Secretary read the followiug letter, addressed to Professor Davidson, as President of the Academy, from Professor Tyudall:

DEAR SIR.—I fear tbat during my present visit to America it will be out of my power to go so far as San Francisco; though I should feel great pleasure in lecturing there nnder the auspices of the California Academy of Sciences. Indeed, it is in connection with such inatitutions that I should like to deliver all my lectures, my viait being one in reaponse to the invitation of my scientific friends, rather as a proof of friendly feelings than with any view to financial matters. Perhaps it may fall to my lot to return to America, and if I do so, I shall not fail to remember your invitation.

Believe me, dear sir, faithfully yours,

JOHN TYNDALL,

Mr. Goodyear, of the State Geologicsl Survey, resd a paper on a trip throngh Oregou, in which he gave eome interesting details conceerning its gold sands and the coal fields. Space forbids its pnblicstion in this issue, but we will give it next week.

Dr. Kellogg presented and described a large herb which bears the same relstion among its class as the *Sequoia gigantea* among trees. It growe on Sau Miguel Island, off Santa Barbara, and hae a very large trunk in proportion to its size; it is slso remarksble for its fragrance.

PATENTS & INVENTIONS.

Telegraphic List of U. S. Patents Issued to Pacific Coast Inventors.

By Special Dispatch, Dated Washington, D. C., Dec. 3d, 1872.

[REPORTED OFFICIALLY FOR THE MINING AND SCIENTIFIC PRESS, DEWEY & CO., PUBLISHERS AND U. S. AND FOREIGN PATENT AGENTS.]

CAR COUPLING.—Mordecai Dieney, Oaklend, Cal.

APPARATUS FOR COATING SEED WHEAT WITH SULPHIDE OF COPPER.—Daniel Best, Marysville, Cal.

SUBSOIL PLOW.—Christisn Myers and William Gummow, Marysville, Cal.

PREPARING ORES FOR AMALGAMATION.—Almarin B. Paul, S. F., Cal.

WHEELBARROW.—Calvin Nntting and Calvin Nntting, Jr., S. F., Cal.

PAINTERS' STRIPING IMPLEMENT.—Daniel Lydon and Charles Haleey, S. F., Csl.

LUBRICATOR.—Willism T. Garrstt, S. F., Cal.

——*The patents are not ready for delivery hy the Patent Office until some 14 days after the date of issue.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & Co., in the shortest time possible (by telegraph or otherwiae) at the lowest ratea. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

Notices of Recent Patents.

Among the patents recently obtained through Dewey & Co's. MINING AND SCIENTIFIC PRESS, American and Foreigu Patent Agency, the following are worthy of mention:

SEWING MACHINE.—A. D. Hopkins, Ssu Francisco. Iu this machine the needle bar is operated by a long lever which is pivoted nt one end and has the other end connected with the needle bar. A link from the lever at some point between its points of attachment, connecte it with one end of a bar, the other end being attached to a crank. This bar slidee throngh sn oscillating block when the crank is turned, and through the link, operatee the lever and gives it the pecnliar motion necessary to form the loop and maintain it so that the shuttle can psss through to mske the stitch. In a good eewing mschine the old principle (the cam movement) mnst be maiutained, of causing the needle bar to remsin stationary during s portion of each stroke to give time for the shuttle to psss through the loop formed by the needle so ae not to draw undue slack while pssaing through the loop which has to be taken up by eprings. This principle has hitherto been obtained by means of irregular groovee formed on the disk or periphery of a wheel or curved slots. All ench machines must have great wear and tear from the great friction, and at the same time canse considerable noise. This machine is the only one which prodncee this movement by the aid of levers, without cams, curved slots, or cog wheels. This principle can be applied to a machine of any size from the ordinary size up to one with an arm six or eight feet long, without increasing the bulk of the machine. This one is comparatively noiseless, and does not seem liable to get out of order easily.

SUBMARINE DREDGER OR EXCAVATOR.—A. J. Gove, San Francisco. This inveution relates to that class of submarine dredging machines in which a bucket is used, made in two sectious and united by a joint at the upper corner of their meeting edges so as to open and shut. Theee are more commonly known as the clamshell dredging machine. The improvement of Mr. Gove consiste of a novel arrangement for euspending and operating theee jointed buckets, by which they can be more easily controlled and hy which they are rendered more effective than by the meane at present used.

IMPROVEMENT IN VENEER CUTTING MACHINES.—E. S. Gilmore, San Francisco. This is an improvement in machines for cutting or slicing off thiu veneers or stripa from a previously prepared block of wood, and it consists principally of a device for automatically feeding said block to the cutting knife without requiring the attention of the operator, aud capable of doing a greater amount of work than is usual in a more perfect manner and with lesa trouble.

TELEGRAPHIC SIGNAL KEY. — Arthur B. Shearer, Davisville, Yolo Co. Cal. Thie is a telegrsphic signal key of novel constrnction, which will be more direct in ite action, and ite operation more positive than the usual lever key, which is mounted upon a horizontsl axis. The especial novelty connected with this invention is its vertical srrangement hy which the action and resction of the key is freely produced without danger of an imperfect responee to the manipulation of the operator. The device ie simple and not liable to get out of order, and has all the necessary appointments for convenience in operating.

MEDICAL COMPOUND. — D. Mayon aud E. Champlain, Cloverdale, Souoma Co., Cal. These gentlemen claim to hsve discovered a cure for dyspepsia, which is called Mayon, Champlsin's Ligneoue Extract, and as its name impliee ie extracted from wood by a peculisr procese. These gentlemen have opened an office on California street, betweeu Montgomery and Kearny, in this city, where dyspeptic persons can teet the merits of the invention.

LOCKING DEVICE FOR WINDOWS. — Henry Polley and A. Rosenfield, San Francisco. This is an improved locking device to be employed chiefly upon windows, but which is also applicable to auy sliding frames. It consiste maiuly in the employment of a plate which is moved from the side of the window cssing against the edges of the sashes, so as to bind either one or both firmly against the opposite casing. A cam or suitable lever is employed to operate the clamping plate.

Text of Interesting Decisions in Patent Cases.

COMMISSIONER'S DECISIONS.

[In the matter of the application of Thomas J. Chubh for patent for HEATING APPARATUS, filed October 2, 1872.—Appeal from Primary Examiner.—Decided October 15, 1872.]

A caveat should not be cited in a specification, in an application for patent, because it pertains to the history rather than the description of an invention.

A patent may properly be referred to in a specification for the purpose of clearly distinguishing an invention pending an application for patent.

Applicant says, iu his statement of the uature of his invention: "My invention is set forth and shown in a caveat filed by me in the Pateut Office of the United Statee, June 29, 1854;" and he makes several allusions to this caveat in the body of his specificstion. The Examiner requires all reference to the caveat to be expunged; upon which ruling an iseue ie made and this appesl is taken. The statute requiree thst before a pstent shall issue for an invention, the applicant "shall file in the Patent Office a written description of the same, * * * in such full, clear, concise, and exsct terms * * * ae to enable sny pereon skilled in the art to make, construct, compound, and use the same." The charscter and the object of the description required are thus definitely specified. A reference to a csveat concerns the hietory, snd not the description, of an invention, and is for that reason excluded by the language quoted. Besides, a csveat is required to be filed "in the confidential archives of the Office and preserved in secresy." It could therefore furnish no informatiou to the public descriptive of an invention, even thongh it were in its nature calculated to do this. Butit ie not. It is a special instrument for a dietinct and peculiar purpose. It proceeds upon the theory that an invention is not yet completed, and it has no place, by reference or otherwise, in a specification for patent. There can be no legitimate object in its incorporation there. If admitted while operative, it would be divested of its secret charscter, which is its chief excellence for the ende it is designed to subserve, and in caee of an interference the adverse party would be entitled to inspect it or demand a copy. But eo far as applicant is concerned, its legitimate benefit to him is reserved, notwithstanding tbis adveree action, because he cau in any event only properly use it as evidence. To be sure, applicant has made his caveat public, to eome extent, iu this case, by filing a copy of it with this application. Bnt the Office cannot properly go so far as to indorse it in advance as bearing upon the date and identity of subject-matter of the invention now songht to be patented. This record must be made full and complete in ilself as to date and description, and all extrinsic matters may be shown elsewhere. They are simply surplusage here as they would be in pleadings—evideuce of facts, but not the facts themselves, which are required. It is urged in argument to snstain this motion that reference in a specification to a preceding patent is sometimes sanctioned. This is only the case, however, when it is made for the purpose of aiding description, by distingnishing more clearly an invention pending an application for patent. Such refereuce is never sanctioned for the purpose here sought to be accomplished, of showing identity and of establishiug date.

The action of the Examiner is sustained and the motion refnsed. LEGGETT, Commissioner.

SAN DIEGO FOUNDRY.—The telegraph tells us that a block of laud has been purchased in San Diego for the erection of a machine shop and foundry. The building is to be completed by January let, the construction-contract having been let.

IMPROVEMENT IN SPRING BEDS.—"Tired nature's sweet restorer, balmy sleep;" but in order to thoronghly enjoy it, how neceeeary it is to have a suitable couch for the weary limbe. Without this luxury, we toss from side to side and vainly woo the drowsy god. Of all the benefactors to mankind in the line of beds, that of Mr. A. T. Sherwood of Sacramento eecms to bear the palm for cheapneee, cleanliness and comfort. The beds are made of wooden springs so combined as to possess the greatest elasticity and movement in every direction, and they sre at the same time very strong. They are equslly elastic under the lightest child or the heaviest pereon, and never receive any permsnent set by hard use, ssis the case where copper springs are employed. Being entirely open they sre very clean, and easily kept free from vermin, and the lsrgest beds only weighs 25 or 30 pounde. The inventor is prepared to furnish all clsases of beds down to the miner's cot so arranged as to make either a bed or a lounge, and guarsntees perfect eatiefaction. This bed received the first premium of the Stste Agricultursl Society this year and Mr. Sherwood ie now prepared to furuish the beds in any qsuntity at a very low rate.

New Incorporations.

PARIAN M. Co.—Nov. 29. Location: Ely Mining District. Capital stock, $3,200 000. Trustees—S. Heydenfeldt, M. L. Powers, D. T. Bagley, L. Leavith and Thos. Reilly.

CALIFORNIA IRON M. Co.—Nov. 30. Location: Nevada Co., Cal. Capital stock, $4,000.000, in 40,000 shares. Trustees—A. H. Hagordan, G. W. Terrill, George K. Philips, William H. Sparks and Joseph F. Atwell.

CUPEL SILVER M. Co.—Nov. 30. Location: Wallapai District, Mohave Co., Arizona Territory. Capital stock, $4,000,000, in 40,000 shares. Trustees—Augustus Laver, Horatio McPherson, Juliua Perrault, Henry Raymond and W. H. Smith.

PIONEER CONSOLIDATED M. Co.—Dec. 4. Location: Eureka District, Nevada. Capital stock, $3,000,000, in 50,000 shares. Trustees—Robert Sherwood, J. D. Fry, Malcolm McDonald, James H. Wade and Max Overfelter.

STETEFELDT FURNACE CO.—Capital, $500,000, in 5,000 shares of $100 each. The Directors are Cbas. A. Stetefeldt, John H. Boslt and Eugene N. Riotte. At a meeting of the Directors, Charles A. Stetefeldt was elected President, and B. J. Burns, Secretary and Treasurer. The objects of the Company are the nsing and vending and selling to others the right to use and vend certain patented furnaces and processes for chloridizing silver and gold ores.

MINING ACCIDENTS.—The Grass Valley *Union*, of the 30th ult., tells of three different accidents in the Eureka mine in one day. Frank Chinot, while fixing the shoe of a heavy stamp, had his eyes and face cut, by the stamp suddenly falling and throwing a quantity of gravel in bis face.

David Rodgers had his leg badly injured by a rock falling upon it; and George Northey was injured by the premature explosion of a blast.

Harrison Scott had his foot crushed by the cage in the Idaho mine.

At the Eureka Consolidated, s cave injured two men last week, one of them, Elliott, had bis shoulder broken and his skull fractured; the other, whose name is Lynch, was slightly hurt in the side.

San Francisco Metal Market.

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, Dec. 5, 1872.

IRON.—			
Scotch Pig Iron, ₱ ton	$50 00	@	55 00
Refined Bar, bad assortment, ₱ lb	04½	@	5
Refined Bar, good assortment, ₱ lb	05	@	5½
Boiler, No. 1 to 4	05½	@	06
Plate, No. 5 to 9	06½	@	07
Sheet, No. 10 to 13	07½	@	— —
Sheet, No. 14 to 20	07½	@	— —
Sheet, No. 24 to 27	08	@	— —
Horse Shoes	8 00	@	
Nail Rod	10		
Norway Iron	8		
Rolled Iron	5		
Other Irons for Blacksmiths, Miners, etc.	5½	@	6½
COPPER.—			
Sheathing, ₱ lb	— —	@	45
Sheathing, Yellow	— 38	@	— 40
Sheathing, Old Yellow	— —	@	— 13
Composition Nails	— 28		— 30
Composition Bolts	— 28		— 30
TIN PLATES.—			
Plates, Charcoal, IX ₱ box	18 00	@	— —
Plates, I C Charcoal	14 00		— —
Roofing Plates	18 50		— —
Banca Tin, Slabs, ₱ lb	— 50		— —
STEEL.—English Cast, ₱ lb	— 10		— —
Drill	19		— —
Flat Bar	19		— —
Plough Pointe	19		— —
Russia (for mould boards)	12½		15
QUICKSILVER, ₱ lb	— 85		— 87½
LEAD.—Pig, ₱ lb	— 5¾		— 6
Sheet	— 10		— —
Pipe	— 9		— 10
Bar	— 6½		— 7
ZINC.—Sheets, ₱ lb	— 11		— 11½
BORAX.—Refined	— 28		— 30
Borax, crude	— 5		— —

Leather Market Report.

[Reported for the Press by Dolliver & Co.]

SAN FRANCISCO, Thursday, Dec. 5, 1872.

French skins continue firm. The fire in Boston has given the market an upward tendency, and dealers are holding both Foreign and Domestic skins at full prices.

City Tanned Leather, ₱ lb			28@29
Santa Cruz Leather, ₱ lb			26@29
Country Leather, ₱ lb			25@28
Stockton Leather, ₱ lb			26@29
Jodot, 8 Kil., per doz	$80	00@	
Jodot, 11 to 19 Kil., per doz	66	00@	85 00
Jodot, second choice, 11 to 15 Kil. ₱ doz	56	00@	70 00
Lemoine, 16 to 18 Kil., ₱ doz	75	00@	77 50
Levin, 12 and 13 Kil., per doz	68	00@	70 00
Cornellian, 16 to 19 Kil., per doz	63	00@	65 00
Cornellian, 12 to 14 Kil., per doz	56	00@	60 00
Ogerau Calf, ₱ doz	54	00@	
Simon, 18 Kil. ₱ doz	60	00	
Simon, 20 Kil. ₱ doz	65	00	
Simon, 24 Kil. ₱ doz	72	00	
Robert Calf, 7 and 8 Kil	35	00@	40 00
French Kips, ₱ lb	1	10@	1 30
California Kip, ₱ doz	55	00	to 70 00
French Sheep, all colors, ₱ doz	8	00@	15 00
Eastern Calf for Backs, ₱ lb	1	15@	1 25
Sheep Roans for Topping, all colors, ₱ doz	9	00@	13 00
Sheep Roane for Linings, ₱ doz	5	50@	10 50
California Russet Sheep Linings	1	75@	5 50
Best Jodot Calf Boot Legs, ₱ pair	5	25	
Good French Calf Boot Legs, ₱ pair	4	50@	5 00
French Calf Boot Legs, ₱ pair	4	00	
Harness Leather, ₱ lb		30@	37½
Fair Bridle Leather, ₱ doz	48	00@	72 00
Skirting Leather, ₱ lb		34@	37½
Welt Leather, ₱ doz	30	00@	50 00
Calf Leather, ₱ foot		18@	21
Wax Side Leather, ₱ foot		20@	27
Eastern Wax Leather		26	

Mining and Other Companies.

Owing to the time necessary to mail the present large edition of the M. & S. Press we are obliged to go to press on Thursday evening—which is the very latest hour we can receive advertisements.

Amazon Silver Mining Company—Location of works, Ely District, Lincoln County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the Twenty-second day of October, 1872, an assessment of Ten Cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary pro tem., at his office, No. 609 Sacramento street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the sixth day of January, 1873, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the 22d day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

M. J. McMANUS, Secretary pro tem.

Office, 609 Sacramento street, San Francisco, Cal.

de7-4t

Bunker Hill Quartz Mining Company—Location of works, Amador, Amador County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 3d day of December, 1872, an assessment of Ten Dollars per share was levied upon the capital stock of said Company, payable immediately to the Secretary, in United States gold coin, at his office, No. 19 First street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Monday, the 6th day of January, 1873, shall be deemed delinquent, and will be duly advertised for sale at public auction and unless payment shall be made before, will be sold on Monday, January 27th, 1873, to pay the delinquent assessment, together with the cost of advertising and expenses of sale.

CHARLES H. KNOX, Secretary pro tem.

Office, 19 First street, San Francisco, California.

Great Blue Gravel Range Company—Location of works, Blue Gravel Range, Placer County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 16th day of November, 1872, an assessment of Ten Cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, Room 5 and 8, No. 302 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Wednesday, the 18th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the 7th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale.

By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room 5 and 6, No. 302 Montgomery street, San Francisco, California. no23

Hudson Gold Mining Company—Location of works, Cherokee Mining District, Plumas County, State of California.

Notice is hereby given that at a meeting of the Trustees of said Company, held on the 11th day of Novamber, 1872, an assessment of 7½ cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 411 California street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Monday, the 16th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the 6th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of the sale.

JOS. L. KING, Secretary.

Office, 411 California street, San Francisco, California. no16-4t

Indus Gold and Silver Mining Company—Location of works, Virginia City, Storey County Nevada.

NOTICE.—There are delinqnent upon the following described stock, on account of assessment levied on the nineteenth day of October, 1872, the several amonnts set opposite the names of the respectiva sharcholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Barnard, R	79	10	$5 00
Everson, Wallace	89	5	2 50
Everson, Wallace	90	5	2 50
Everson, Wallace	91	5	2 50
Everson, Wallace	92	5	2 50
Everson, Wallace	93	5	2 50
Everson, Wallace	94	5	2 50
Everson, Wallace	95	5	2 50
Everson, Wallace	96	5	2 50
Everson, Wallace	97	10	5 00
Fowler, John	6	5	2 50
Knapp, J B	76	5	2 50
Summers, H	35	5	2 50
Summers, H	36	5	2 50
[In dispute—not issued]		25	12 50

And in accordance with law, and an order of the Board of Trustees, made on the 19th day of October, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, et No. 327 Montgomery street, San Francisco, Cal., on the sixteenth day of Decemher, 1872, at the hour of 10 o'clock A. M., of said day to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

DAVID WILDER, Secretery.

Office, 24 Merchants' Exchange, California street, San Francisco, Cal. no30-3t

Lemon Mill and Mining Company---Notice to Stockholders.

Notice is hereby given, that a meeting of the Stockholders of the Lemon Mill and Mining Company will be held at the office of the Secretary, No. 608 Merchant street, San Francisco, Cal., on Monday, the 6th day of January, 1873, at 12 o'clock M. of said day, for the purpose of voting upon a proposition to increase the capital stock of the Company from two million (2,000,000) dollars, divided into twenty thousand (20,000) shares, of the par value of one hundred (100) dollars each (the present stock of the Company), to Three Million (3,000,000) Dollars, divided into thirty thousand (30,000) shares, of the par value of one hundred (.00) dollars each.

G. W. CLARK, Trustee,
H. H. SCHAFER, Trustee,
JOHN FAY, Trustee,
H. BARROICHET, Trustee,
CAMILO MARTIN, Trustee,
} Lemon Mill and Mining Co.

San Francisco, Dec. 3d, 1872. de7-4t

Mina Rica Mining Company---Location of works, Auburn Mining District, Placer County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 19th day of November, 1872, an assessment of thirty cents per share was levied upon the capi al stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, No. 320 California street, room No. 5, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the 23d day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale, at public aution, and unless payment shall be made before, will be sold on Monday, the 13th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

GEO. R. SPINNEY, Secretary.

Office—No. 320 California street, room No. 5, San Francisco, Cal no23

Mammoth Blue Gravel Company—Location: Chalk Bluff District, Nevada County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 16th day of November, 1872, an assessment of eight cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the secretary.

Any stock upon which said assessment shall remain unpaid on the 23d day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Monday, the 13th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.

Office, room 37, New Merchants' Exchange, (third floor), California street, San Francisco, Cal. no23

Mocking Bird Mining Company, Location of works, Ely Mining District, Lincoln County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company held on the 16th day of December 1872, an assessment of ten cents a share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the secretary at the office of the Company Room 21, Hayward's Building, 419 California street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 16th of January 1873, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, January 31st, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale.

H. C. KIBBE, Secretary.

Office, Room No. 21, Hayward's Building, 419 California street, San Francisco, Cal.

Noonday Silver Mining Company---Location of works: White Pine Mining District, White Pine County, Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment, No. 12, levied on the 11th day of October, 1872, the several amounts set opposite the names of the respective shereholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Barton, W H, Trustee	566	100	20 00
Barton, W H, Trustee	594	50	10 00
Barton, W H, Trustee	570	100	20 00
Barton, W H, Trustee	729	50	10 00
Bogart, O H	653	200	40 00
Child & Jones, Trustee	689	100	20 00
Child & Jones, Trustee	113	100	20 00
Cribbins, Patrick	955	40	8 00
Cohlman, Wm	939	50	10 00
Cohlman, Wm	1027	100	20 00
Dubrich, P	918	100	20 00
Drexler, L P & Co, Trustee	1016	50	10 00
Fordham, R B	444	66	13 20
Farnam, E	79	100	20 00
Fenu, T W, Trustee	539	50	10 00
Hill, A E, Trustee	324	50	10 00
Hill, A E, Trustee	381	50	10 00
Hill, A E, Trustee	382	50	10 00
Hill, A E, Trustee	384	50	10 00
Hill, A E, Trustee	395	25	5 00
Hill, A E, Trustee	406	100	20 00
Hill, A E, Trustee	410	25	5 00
Hill, A E, Trustee	415	50	10 00
Hunt, G H, Trustee	944	200	40 00
Hall, N H, Trustee	718	100	20 00
Hilliard, B F, Trustee	844	100	20 00
Hurley, Miss M J A	909	20	4 00
Howard & Lincoln, Tr	1015	50	10 00
Hoffman, August	1032	250	50 00
Ives, R O, Trustee	227	20	4 00
Jonasson, J	557	50	10 00
Kratzenstein, C	911	100	20 00
Koenig, A	954	65	13 00
Ludington, H Y	102	100	20 00
Lowenberg, S, Trustee	788	60	12 00
Lowenberg, S, Trustee	799	40	8 00
Livingston, S M, Trustee	964	50	10 00
Liucoln & Howerd, Tr	1026	50	10 00
McDonald & Whitney, Tr	667	200	40 00
McDonald & Whitney, Tr	679	100	20 00
McDonald & Whitney, Tr	901	50	10 00
Mason, Thomes	798	50	10 00
Mason, Thomes	925	100	20 00
Martin, M S, Trustee	500	50	10 00
Martin, M S, Trustee	514	100	20 00
Martin, M S, Trustee	561	50	10 00
Martin, M S, Trustee	774	100	20 00
McDonald, M J, Trustee	870	2	40
McDonald, M J, Trustee	875	73	14 60
McDonald, M J, Trustee	878	100	20 00
McDonald, M J, Trustee	881	200	40 00
McDonald, M J, Trustee	989	100	20 00
McDonald, M J, Trustee	990	100	20 00
McDonald, M J, Trustee	991	100	20 00
McDonald, M J, Trustee	992	100	20 00
McDonald, M J, Trustee	993	100	20 00
McDonald, M J, Trustee	994	100	20 00
McDonald, M J, Trustee	995	100	20 00
McDonald, M J, Trustee	996	100	20 00
McDonald, M J, Trustee	997	100	20 00
McDonald, M J, Trustee	998	100	20 00
McDonald, M J, Trustee	999	100	20 00
Mitchell, J S, Trustee	897	200	40 00
Meyers, A	946	116	23 20
McCullough, T J	1014	100	20 00
Neal, Chas S, Trustee	853	150	30 00
Norwood, W E, Trustee	873	100	20 00
Owens, T J, Trustee	1000	65	13 00
Page, Nathaniel	59	100	20 00
Page, Nathaniel	60	33	6 60
Peck, C S	979	300	60 00
Peck, O S	980	200	40 00
Rogers, R H	957	100	20 00
Richardson, E A, Trustee	992	100	20 00
Richardson, E A, Trustee	943	300	60 00
Richardson, E A, Trustee	971	50	10 00
Richardson, E A, Trustee	1001	500	100 00
Stevens, C, Trustee	26	100	20 00
Schmitt, B L, Trustee	877	100	20 00
Soren, Geo S, Trustee	921	50	10 00
Tilhey, E S, Trustee	393	1 (hal)	20
Tilhey, E S, Trustee	700	50	10 00
Thomson, M	1033	600	120 00
Uhler, J Clem, Trustee	639	100	20 00
Uhler, J Clem, Trustee	641	100	20 00
Williams, Henry, Trustee	609	50	10 00
Woods, F H, Trustee	828	750	150 00
Woods & Frechorn, Tr	982	300	60 00
Woods & Frechorn, Tr	983	200	40 00
Woods & Freeborn, Tr	985	100	20 00
Woods & Freeborn, Tr	988	100	20 00

And in accordance with law, and an order of the Board of Trustees, made on the eleventh day of October, A. D. 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction at the office of the Company, on the fourth day of December, A. D., 1872, at the hour of one o'clock, P. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising, and expenses of sale. CHAS. H. FISH, Secretary.

Office, Room 26, Hayward's Building, No. 419 California Street, San Francisco Cal. no 16-3t.

NOONDAY SILVER MINING COMPANY—POSTPONEMENT. The above sale is hereby postponed until Tuesday, the 10th day of December, 1872, at the same hour and place. By order of the Board of Trustees.

no30-2t CHAS. H. FISH, Secretary.

Norman Gold Mining Company—Location of works, Aqueduct Mining District, Amador County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said coopany, held on the 11th day of November, 1872, an assessment of five cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary, at the office of the company, Room 5 and 6, No. 302 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Thursday, the 12th day of December 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction and unless payment shall be made before, will be sold on Saturday, the 4th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

W. H. WATSON, Secretary.

Office, Room 5 and 5, No. 302 Montgomery street, San Francisco, Cal. no16

North San Francisco Homestead and Railroad Association—Location of property, City and County of San Francisco, State of California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the Fifth day of November, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount
Bidleman, E G	338	2	$ 6 00
Boyd, James T	43	42	126 00
Boyd, Annes T	348	49	147 00
Baker, Livy K	213	8	24 00
Hegermann, F	358	195	585 00
Hagermann, F	385	5	15 00
Hagermann, F	388	8⅔	26 00
Hart, George	389	394	1182 00
Hendrie, J W	394	547	1641 00
Hendrie, J W	407	350	1050 00
Houghton, S C	09	1	3 00
Huerne, Prosper	98	2	6 00
Huerne, Prosper	369	1⅓	4 00
Hutchinson, H L	380	2	6 00
Klumpke, John G	143	30	90 00
Klumpke, John G	145	20	50 00
Klumpko, John G	286	2	6 00
McDonald, D L	385	5	15 00
McDouald, D L	387	5	15 00
Nelson & Dohle	86	¼	75
Nelson & Doble	212	3 5-6	11 50
Nelson & Doble	222	1	3 00
Oppenhelm, F	379	24	72 00
Payne, Warren R	381	2	6 00
Pioche, F L A	366	30	90 00
Pioche, F L A	367	2	6 00
Pioche, F L A	368	1⅓	400
Reed, M G	110	1½	4 50
Sharp, Geo. F	400	¾	2 25
Sharp, Geo. F	408	357	1071 00
Smith, James	382	2	6 00
Stone, N B	355	52	156 00
Stone, N B	358	8	24 00
Whittell, Hugh	304	540	1620 00
Whittell, Hugh	405	250	750 00
Whittell, Hugh	406	98	294 00
Whittell, A P	390⅗	3	9 00

And in accordence with law, and an order of the Board of Trustees, made on the 5th day of November, 1872, so many shares of each percel of said stock as may be necessary, will be sold at public auction, at the office of the Association, No. 314 California street, San Francisco, Cal., on the 23d day of December, 1872, at the hour of 12 o'clock M. of seid day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

A. D. SMITH, Secretary.

Office, 314 California street, San Francisco, Cal.

Old Providence Mill and Mining Company, Location of works, Heyden Hill Mining District, Lassen County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said company, held on the 7th day of November, 1872, an assessment of twenty-five cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, No. 415 Montgomery street, San Francisco. Any stock upon which said assessment shall remain unpaid on the 16th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 6th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

FRANK SWIFT, Secretary.

Office, 415 Montgomery street, San Francisco, Cal.

Piermont Milling and Mining Company—Location of works, Piermont Mining District, White Pine County, Nevada.

NOTICE is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 21st day of November, A. D., 1872, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary at the office of said Company. Any stock upon which said assessment shall remain unpaid on Monday, the 30th day of December, A. D., 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the 24th day of January, A. D., 1873, at the office of said Company, at the hour of 2 P. M., to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. W. OLARK, Secretary.

Office, 418 California street, San Francisco. n28-4t

San Francisco Co-operative Printing Company.—Location: 411 Clay and 412 Commeroial Sts., San Francisco, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of the San Francisco Co-operative Printing Company, held on the 6th day of November, 1872, assessment No. 4, levied on the 17th day of September, 1872, of $12 per share, having been rescinded, on same day, an assessment of Five Dollars per share was levied on the Capital Stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, 412 Commercial street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Monday, the 9th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the 31st day of December, 1872, to pay the delinquent assessment, together with the cost of advertising and expenses of sale.

B. H. DALY, Secretary

Office 411 Clay St. and 412 Commercial St., San Francisco, Cal.

San Francisco Co-operative Land and Building Association.

Notice is hereby given that all installments due on shares in this association, are called in, and payment thereof is demanded. All shares delinquent at the expiration of thirty days from this date, will be advertised for sale. By order of the Board of Directors.

H. B. CONGDON, Secretary.

Office, 306 Montgomery street.

San Francisco, November 16, 1872. no16-4t.

State of Maine Mill and Mining Company. Location of works, Amador County, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment (No. 1) levied on the 17th day of October, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
S L Marks	12	240	12
S L Marks	21	500	25
L N Tower	28	100	5
H B Congdon, Trustee	40	500	25
Platte Burr, Trustee	41	1000	50
L N Tower	59	500	25
C E Hutchins	60	400	20

And in accordance with law, and an order of the Board of Trustees, made on tha 17th day of October, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Secretary, No. 306 Montgomery street, San Francisco, Cal., on Monday, the 16th day of December, 1872, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

H. B. CONGDON, Secretary

Office, 306 Montgomery street, San Francisco, Cal.

Office of the San Francisco Co-operative Printing Company, 412 Commercial street, San Francisco, Cal., December 4, 1872.

In accordance with a resolution of the Board of Trustees of the San Francisco Co-operative Printing Co., held this day, a special meeting of the Stockholders of said Company is hereby called, the same to be held at the offices of the Company, on Wednesday January 8th, 1873, at 12 o'clock M., to take into consideration the propriety of increasing the capital stock of said Company from ten thousand dollars, divided into one hundred shares of one hundred dollars each, the present capital stock, to forty thousand dollars, divided into two hundred shares of two hnudred dollars each.

PETER COOK,
JOHN KANE,
R. A. JAMES,
A. T. WARREN,
B. H. DALY,
Trustees.

de7-4t

U. S. Grant Mining Company---Location of works, Carlisle, Nevada County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 19th day of November, 1872, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at his office, 226 Clay street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the 30th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 20th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

ENOS TAYLOR, Secretary.

Office, 226 Clay street, San Francisco, Cal. no23

NOTICE.

To the Stockholders of the Sutro Tunnel Company.

At a meeting of the Trustees of the Sutro Tunnel Company, held at the office of the Company, in the city of San Francisco, on the 12th day of November, 1872, the following resolution was adopted:

"Resolved, That it is the opinion of this Board that the capital stock of this Company should be increased up to Fifteen Million Dollers, and he divided into fifteen hundred thousand shares of the par velue of ten dollars per shere, and that a meeting of the stockholders be and is hereby called to take place at the office of the Company, in the city of San Francisco, at No. 321 California street, at 1 o'clock P. M. tha Fourteenth day of December, 1872, to determine upon this proposition."

(Signed) JOSEPH ARON,
CHAS. W. BRUSH,
EDWARD N. HOOPER,
IGNATZ STEINHART,
SOLOMON HEYDENFELDT,
Trustees.

PELHAM W. AMES, Secretery.

no16-4t

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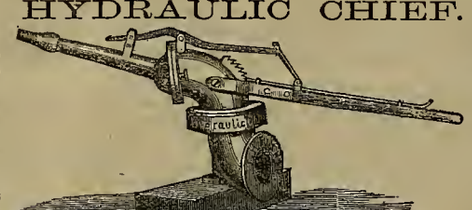

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24v17-oy

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Steiger & Boland are the sole Manufacturers of the Improvsd Hepburn Roller Pan. The patterns having all the Improvements to those Pans, are at the Occidental Foundry, enabling the Establishment to deliver all pans and parts thereof with uniformity, finished in the best style, and at the lowest possible price. Pan Castings furnished the trade, with liberal facilities for erection, &c. All persons are cautioned against making, selling or using these Pans, except through the authorized agents and manufacturers, viz., Steiger & Boland, of the Occidental Foundry, S. F.

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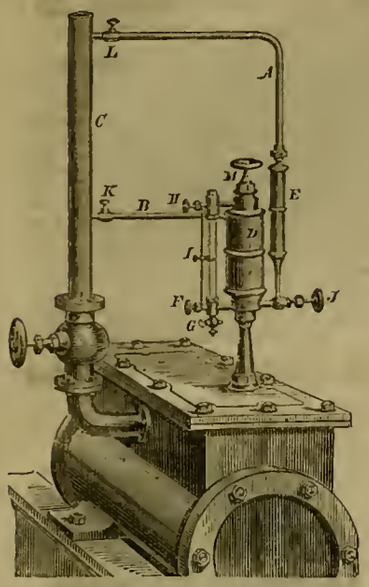
16v25-tf

Notice is hereby given, that the copartnership heretofore existing between A. J. Severance, Charles W. Randall and J. Gus. Burt, under the firm name of "Severance, Holt & Co.," is this day dissolved by mutual consent. A. J. Severance, having purchased all the interest of his late partners, will continue the business of manufacturing and selling Diamond Drills as before, under the style of A. J. Severance & Co.

Dated San Francisco, Nov. 24, 1871.

Office, 315 California street. A. J. SEVERANCE,
CHAS. H. RANDALL,
22-v23-tf J. GUS. BURT.

N. Seibert's Eureka Lubricators.

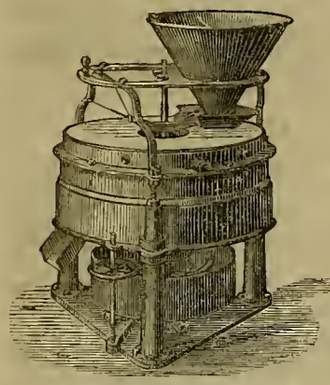


THE HIGHEST PREMIUM

Awarded by the Mechanics' Institute Fair, San Francisco, and State Fair, Sacramento, 1871.

These Lubricators are acknowledged by all engineers to be superior to any they have ever used; feed constantly by pressure of condensed water, supplied by pipe A, regulated under the oil by valve J, and forced out through check valve and pipe B into the steam pipe C; it then becomes greasy steam, passes to all the valves and cylinder at every stroke of the engine; glass tube I indicates amount used per hour. Packing on rods and steams lasts longer, and the rings on the piston will not corrode. One pint of oil will last from three to six days, according to speed and size of engine; I, sliding gauge; K, valve to shut off when engine stopps; H, F, valves to shut off in case of frost; steam does not enter the cup; it is always cool; warranted to give satisfaction. Patented February 14, 1871. Manufactured by California Brass Works, 125 First street, S. F. 24v23tf

MILL STONES.



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10v14ar

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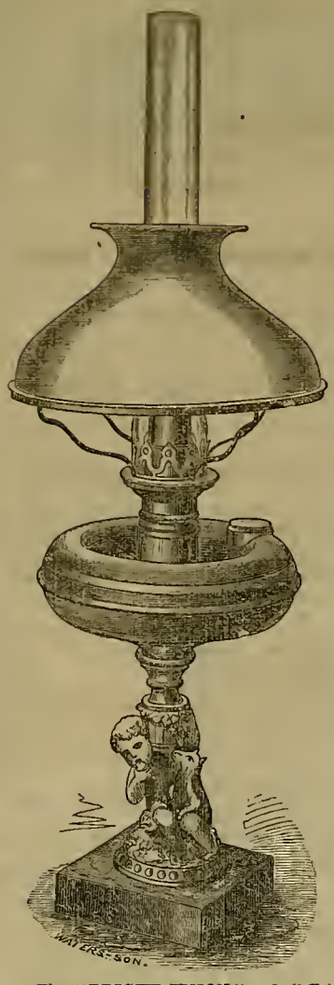
BRIGHT UNION SAFETY LAMP.

A CALIFORNIA INVENTION.

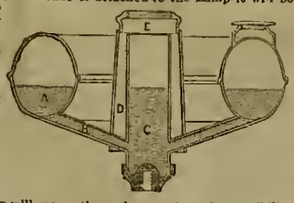


Patented May 30, 1871. Is the Best and Safest Lamp ever put in the market, for the following reasons:

1st.—The Lamp is constructed with two tubes, as will be seen in cut, the outside one (D) intended only for the attachment of the burner, and the inside one (C) to contain oil and receive the wick. As there is no connection between these tubes, it will be evident that there is no possibility of communicating any heat to the oil; and as long as the oil in a Lamp can be kept perfectly cool, there is, of course, no chance for an explosion.

This Lamp is the only one ever invented in which this result has been secured.

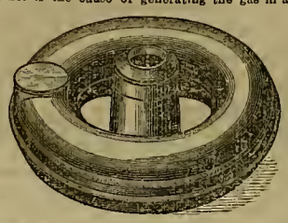
2d.—When the burner is attached to the Lamp it will be seen that there is no opportunity for the oil to escape should the Lamp be overturned, and in case any accident should occur, the worst consequences that could ensue would be the breaking of a chimney or shade. From these facts it will be evident that those who adopt this Lamp will secure themselves against the possibility of fire or explosion arising from the use of kerosene oil.



3d.—The Lamp is strongly and well made, attractive in appearance, and something entirely new and novel. It will burn kerosene adapted to any burner. With all of these advantages it combines cheapness, and from present indications it is destined to become very popular.

4th.—The tube to which the burner is attached (D) is free from the tube of the oil (C), and a space for air, passing from the lower end, between the tube of the burner and the tube of the oil, keeps it always cool.

5th.—The burner is the cause of generating the gas in a Lamp. It cannot do it in this Lamp, as the burner is set on a tube which contains no oil, consequently it cannot make any gas.



6th.—In case of accident, the Lamp falling or thrown over, by which many explosions occur, is the cause of the oil rushing to the flame. In this Lamp it is not so; it can be thrown over and cannot send the oil to the flame; it will run from it, so there is no danger of catching fire.

This Lamp can be filled from the fount, on the top of which is a screw.

This Lamp can be attached to any Chandelier or Bracket made.

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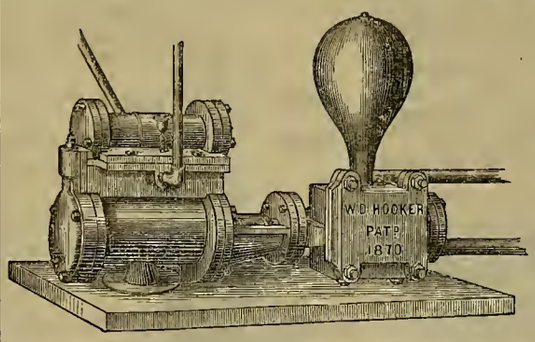
1v4tf-lambp Nos. 10 and 12 Third Street, San Francisco.

Hooker's Patent Direct Acting Steam Pump.



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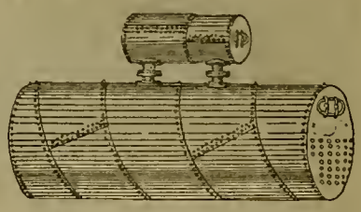
123 and 125 Beale Street.....SAN FRANCISCO.

F. I. CURRY,
(Late Foreman of the Vulcan Iron Works,) Proprietor.



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OFFICE OF BOARD OF CITY HALL COMMISSIONERS,
SAN FRANCISCO, November 25, 1871.

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All according to the Printed Specifications, Schedule, etc., and Plans and Drawings.

The Printed Specifications and Printed Forms of Proposals can he had on application to the Secretary, and the Plans and Drawings can he seen, and all further information—as to the details of the work, etc.—can be obtained from the Architect, at the office of the Board.

The Bids must he endorsed for the Material proposed to be furnished or Work done, and addressed to the Secretary of the Board.

No Bids will he entertained unless made on the specified "Printed Forms of Proposal," and accompanied by a certified check, or hond with two good and sufficient sureties, in a sum equal to 10 per cent. of the total sum of the tender, to he returned on the due entering into the contract of the party to whom it may he awarded, or to he forfeited, if the party fail to enter into the said contract.

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P. H. CANAVAN,
JOS. G. EASTLAND,
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Board of City Hall Commissioners.
no30-1m

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COMMENCING

Sunday, December 1st, 1872.

And until further notice, Trains and Boats will

LEAVE SAN FRANCISCO.

7.00 A. M. (Daily). Atlantic Express Train (via Oakland) for Sacramento, Marysville, Redding, and Portland, O., Colfax, Reno, Ogden and Omaha

7.15 A. M. (Daily). Cal. P. R. R. Steamer (from Broadway Wharf)—Connecting at Vallejo with Trains for Calistoga, Knight's Landing and Sacramento; making close connection at Napa with stages for Sonoma.

2.00 P. M. (Sundays excepted). S. F. & N. P. R. R. Steamer (from Broadway Wharf), connecting at Donahue with Trains for Cloverdale. Making close connection at Lakeville with stages for Sonoma.

2.00 P. M. (Sundays excepted). Stockton Steamer (from Broadway Wharf), touching at Vallejo, Benicia, and Landinge on the San Joaquin river.

3.00 P. M. (Daily). San Jose Passenger Train (via Oakland), stopping at all way Stations.

4.00 P. M. (Sundays excepted). Passenger Train (via Oakland) for Lathrop, Merced, Visalia, Tipton, and Los Angelos, Stockton and Sacramento.

4.00 P. M. (Sundays excepted). Cal. P. R. R. Steamer (from Broadway Wharf) connecting at Vallejo with Trains for Calistoga, Knight's Landing and Sacramento.

4.00 P. M. (Sundays excepted). Sacramento Steamer (from Broadway Wharf), touching at Benicia, and Landinge on the Sacramento river.

5.15 P. M. (Daily). Overland Emigrant Train (via Oakland)—Through Freight and Accommodation.

OAKLAND BRANCH.—LEAVE SAN FRANCISCO, 7 00, 8 10, 9 2, 10 10 and 11 20 a. m., 12 10, 1 50, 3 00, 4 00, 5 15, 6 30, 8 15 9.20 and *11 30 p. m. (9 20, 11 20 and 3 00 to Oakland only).

LEAVE BROOKLYN (for San Francisco), *5 30, 6 40, 7 50, 9 00 and 11 00 a. m., 1 30, 2 40, 4 55, 6 10, 7 55 and 10 10 p. m.

LEAVE OAKLAND, *5 40, 6 50, 8 00, 9 10, 10 00, and 11 10 a. m., 12 00, 1 40, 2 50, 3 50, 5 05, 6 20, 8.05 and 10 20 p. m.

ALAMEDA BRANCH.—LEAVE SAN FRANCISCO, 7 20, 9 00, and 11 15 a. m., 1 30, 4 00, 5 30, and 7 00 p. m. (7 20, 11 15 and 5 30 to Fruit Vale only).

LEAVE HAYWARDS (for San Francisco), *3 45, 7 00 and 10 45 a. m., and 3 30 p. m.

LEAVE FRUIT VALE, *4 40, 7 35, 9 00 and 11 20 a. m., 1 30 4 05 and 5 30 p. m.

*Except Sundays.

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MINERAL ASSAYER AND METALLURGIST,
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SAN FRANCISCO, SATURDAY, DECEMBER 14, 1872.

VOLUME XXV. Number 24.

Kill the New Industry.

When it was first proposed to introduce sugar making from beets, in California, it was favored, not only by those who wished to see the large amount annually expended for foreign sugars, kept at home; but by those who were engaged in refining crude or raw sugars and supplying our people with the refined article, believing that the beet sugarine would be a source from whence they might derive raw sugars for the refinery.

But as soon as it was ascertained that beet sugaries were also the refineries of their own sugars, and even of raw sugars obtained from abroad during the season when the sugeries and sugar making are at rest, the whole matter of encouraging the best sugar industry assumed a new phase; for it was evident that with their extended introduction amongst us, the occupations of the refinery exclusively, would be greatly lessened.

Hence we see the anomalous condition of things now existing. Two beet sugarine in successful operation, turning out the best quality of sugar known to the markets as granulated sugar, and supplying a large quantity daily, and lessening in a correspounding ratio the quantity required formerly from the refineries. And what do these refineries do, but put down the price of granulated sugar from two to three cents a pound below a fair value, and below what the same qualities of sugars are worth in New York.

Possibly the refineries backed by San Francisco capital may demolish this new industry, or make its working unprofitable, and having done so, put up price to the old figures or above all former precedent, just to show to consumers the *power* of *speculative capital*; as though California had not yet felt its grinding influence sufficiently for all practical purposes.

Cork-screw Growth.

We are indebted to A. D. Pryal, nurseryman and florist, of Oakland, for a half dozen samples of the *Eucalyptus viminalis*, grown from the seed planted in pots in March last. The trees are from 3 to 6 feet in hight, apparently healthy and luxuriant, notwithstanding the morbid growth and distorted condition of their roots, caused by being cramped up for a whole season and obliged to make their living or do the best they can in their pent up prison-house, a flower-pot six inches in depth.

It is the favorite method with tree growers to start in this manner for one season, this, one of the largest and most rapid growers among forest trees; but we would just as soon think of growing the apple or yellow locust in pots, for a year, as the eucalyptus. In the address of Mr. Pryal before the Oakland Farmers' Club, this subject is ably handled and ought to receive the attention of individuals and committees whose business it is to procure and plant our highways and public grounds with trees.

In the illustrations which we present, No 1 is the Eucalyptus grown in open ground from the seed, without removal or transplantation; the roots allowed to take their natural form and direction; and though it possesses a strong, heavy tap-root, it is just what nature or the tree wants, or it wouldn't grow it. It does used it, first as a powerful anchor or brace to hold the tree to its position as against high winds, and secondly to secure sufficient moisture for the tree in seasons of protracted drouth.

Illustration No. 2 is the same kind of tree grown in a pot since March last. The first effort of the tree is to strike its main root downward; this coming in contact with the bottom of the pot, the root above begins to kink, twist or do any way to extend itself, to increase its surface of spongiolee to meet the increasing demand for nutriment. To suppose that it will throw out a mass of fibrous roots and fill the pot is to suppose that it will do what the nature of the tree will not admit of, or not till it has first established itself in the soil, secure against wind and drouth.

The consequence is, that the root in the pot

Fig. I.

continues to enlarge, with hardly any increase of its length, until the coils actually touch each other, as shown in the cut, and unnatural excrescences as at A are also forced out above the real roots.

At length the root, in the illustration given —and which is true to life—found its way

Fig. II.

through the hole in the bottom of the pot opposite to B, and standing on the ground immediately commenced the formation of fibrous roots.

Now when this tree is transplanted it is set in the ground up to A, because all below that is real root, but a miserably distorted foundation for any tree to commence a growth upon, and with scarcely a rootlet for the first eight inches from the surface of the ground. Is it surprising that such trees never root naturally thereafter and that they are prostrated by the first high wind? Our article contains hints and suggestions that are worthy the attention of those who contemplate the setting of the new favorits, the Eucelyptus, in any of its varieties; and in the specimens before us nature presents a strong argument in support of our proposition, often inculcated, of planting the seeds of trees, if possible, in the places where they are to stand permanently.

Grains of Science.

[Written for the PRESS.]

Among the Birds, or Facts for Darwin.

The natural wants of most animals explain their habits. Habit denotes law. Voluntary motion denotes object. What that object is, is frequently less plain than the fact of it. Not a few of the manuvers of animals puzzle the beholder.

Mounds had their builders in genius men.

Fig. I.

Coral reefs by insects. Did you ever suspect birds were tree-planters?

During the past summer I saw a young oak tree a little over one foot in hight, in its second summer's growth. It was in the garden of Mrs. H., of Contra Costa County. She informed me she saw a blue jay (*garrulus cristatus*) plant the seed of that little oak. The bird came with the acorn and dug a hole in the soft earth near a bunch of pinks, two or three inches deep, put the acorn into the little pit, small

Fig. II.

end downwards, and drove it well into the ground, striking it with its beak as with a hammer. The stroke were strong, rapid and loud. The jay then carefully covered it with loose dirt and departed. My observing informant remarked she had often seen the blue jay plant acorns in different places about the garden, but had never noticed one return to recover the buried fruit.

We are accustomed to believe winds, floods, and water currents are the natural transporting agents of seeds, nuts and fruit buds. Here witness the beautiful jay, good creature, a benefactor to desolate plains. Trees encourage comfort and civilization. The blue jay anticipates both by planting trees. Did that bird work for itself, for man, or for posterity?

In Stanislaus County, Mr. Dicky gave me report of his observations that may explain the origin of dried meat. He had noticed a butcher-bird (*Lanius excubitor*) engaged in its remorseless pastime. This tiny bundle of cruelty in feathers is the guerilla of the air. Mr. Dicky saw one impale lizards, small snakes, crickets, and horned toads on the terminal spines of the century plant leaf and on the sharp points of limbs of trees. (See Fig. 1.) Soon each carcass became dry and hard, and swung with the fitful breeze to and fro, in small imitation—or suggestion it may be—of the vane to a spire. If he knocked off the transfixed specimens, in a few days others were replaced. Persistent research! Cut-throat industry! It contemplates death fate with vulgar satisfaction. The bird was never seen to resort to, or remove them for food. The sight of the slain seemed to nourish its taste for blood. Fear, revenge, or love of murder might prompt to kill; but to expose the helpless victims high in open view, is to hint at punishment after death, or at dried beef.

Woodpeckers dig holes in trees, and deposit acorns in them. (See Fig. 2.) Acorns are supposed to afford worms, which are of interest to woodpeckers. I saw specimens of old wood and thick oak bark—obtained in the vicinity of Stockton—having dozens of holes dug in them. Each hole contained one, sometimes two—not acorns—but smooth pebbles. The stones were nicely selected to fit the holes, and squeezed in so tightly as not to fall out, though the bark be turned with the openings upside-down. As you inspect the curious pieces, you decide it is the work of crude art and of native tools. Woodpeckers doubtless made the holes. For what? Not in search for worms, for there are no tortuous worm avenues, nor worm tracks, and none of the holes pass through the bark to reach the wood beneath. Why are pebbles stones placed there; by whom or what? Did the same creature that made the openings, pave them?

These questions are unimportant, but not uninteresting. They wait for solution. Yet do we not find them paralleled in the coarse instincts of humanity? The acorn planted by the jay may have been plundered and then concealed. The butcher-bird is probably not a fallen angel, but nature's exhibit of a compact genius of cruelty, and loves the trait. Magpies may have put stones in the artificial bread-baskets of oak bark, in place of acorns, as a joke on woodpeckers.

A. S. HUDSON, M. D.

Oakland, Nov. 25, 1872.

The Stanton Ruby.

On Wednesday last the cutting of the now famous "Stanton Ruby" was completed in this city, by the well-known lapidaries, Messrs. Laine & Cartiere.

The stone has necessarily been somewhat reduced in size since it has been subjected to the action of the emery wheel, but Messrs. M. & C. inform us that this specimen of a Spinel Ruby weighs as much as 13 carats in its present condition; it is of a deep blood-red color remarkably clear and free from flaws, only one small one being perceptible. The intrinsic value of the stone cannot well be computed, as a Spinel of the above weight and color, is worthy any fancy price a connoisseur may place on it.

Messrs. Laine & Cartiers estimate the value of this Spinel Ruby, at from $6,000 to $7,000.

THE VISALIA AND STOCKTON narrow-gauge railroad is gaining ground and subscriptions are said to be satisfactorily increasing. An unusual interest is being manifested in this class of roads all over this Coast which they will materially benefit.

QUICKSILVER.—One hundred and sixty tanks of quicksilver, weighing in the neighborhood of 16,000 pounds, were received in Virginia City from San Francisco on Monday last.

BUSY.—There is an immense freighting business from the end of the track of the Southern Utah roads, to southwestern Nevada, and the mining districts are crowded with teams.

Coal Fields and Golden Sands of Oregon.

At the last meeting of the California Academy of Sciences Mr. W. A. Goodyear, of the State Geological Survey, read a description of a trip through Oregon, in which he made some interesting remarks on the general geological features of the country, and referred to the coal fields, and the auriferous sands of Gold Bluff. We append an abstract of the paper:

The Overland Route.

After crossing the State line, on descending the northern slops of the Siskiyou mountains, in Oregon, we come to the little village of Ashland, on Bear Creek, a branch of the Rogue river. At this place I saw some marble tombstones, the material for which was said to have come from the Siskiyou mountains on the south. The valley of Bear Creek is underlaid by unaltered sandstones.

The mountains, which rise quite high on the north side, present every appearance, for many miles, of being also made up of unaltered sandstones and shales, beautifully stratified.

I saw nothing in Southern Oregon along this route which looked volcanic, excepting two or three flat-topped hills, a few miles northeast of Jacksonville, known as the "Table Rocks," and famous in Oregon as the locality of a desperate battle with the Indians in the early days. The capping of these hills is, in all probability, a table of basaltic lava.

Between the Rogue and the Umpqua rivers the country is very mountainous and heavily timbered. The road here crosses two prominent mountain ridges, descending at last to Canyonville, beyond which place it crosses the Umpqua River, along whose right bank it then continues to Roseberg. From here a newly constructed wagon road runs west sixty-three miles to Coos City, crossing the Coast Range of mountains at an altitude of 4,000 feet.

Coos Bay.

A peculiar feature of the country about Coos Bay is the numerous tide water sloughs, which stretch far inland to distances ranging from ten to thirty miles from the coast. All the lower part of the Coquille River is a tide water stream of this kind, and Coos Bay itself has half a dozen arms through which the tide ebbs and flows for miles back into the country in all directions.

So far as yet known, there is not more than one workable bed of coal in the Coos Bay coal region. The new mine recently opened by Messrs. Hardy and Goodale, on the north of the Bay, is undoubtedly on the same bed as the Eastport and Newport mines to the south. Nevertheless, the coal-field about Coos Bay is very extensive, reaching certainly from the coast, ten or twelve miles back, and from the Bay south to the Coquille river, and north as far as the Umpqua. Coal of good quality is reported on the North Umpqua east of the coast range of mountains. It is needless to say, however, that in a region so cut up by gulches, the portion of this broad area which is covered by coal of good quality and workable thickness, is comparatively small. In fact, there is no coal here which it will pay to work for many years to come, except that which is situated in close proximity to the shores of Coos Bay.

The coal bed here consists of two strata, each from two to two and a half feet in thickness, separated by a stratum of clay rock, from six inches to a foot thick. Above the upper layer of workable coal is another stratum of rather hard clay rock, from a foot to eighteen inches thick, and over this again another stratum of coal of nearly equal thickness. But this upper layer of coal, though generally of good quality in the Eastport and Newport mines, is not worked.

The Quality of Coos Bay Coal,

As compared with that of the Mount Diablo mines, is better for some purposes, and for others not so good. For domestic use it is preferred to the Mount Diablo as it does not crumble quite so badly in the fire as the latter coal and consequently makes rather a freer and open-burning fire. It is also often said that the odor of the Coos Bay coal is less offensive than that of the Mount Diablo coal. But this is a statement in which there seems to be more of fancy than of truth.

For steam purposes, the evidence of chemical analysis goes to show that the Coos Bay coal is not worth quite so much per ton, as the Mount Diablo coal. This fact appears to be chiefly due to the somewhat larger percentage of water which the Coos Bay coal contains, and which not only diminishes by an amount equal to its own weight the heat-producing substance of the coal, but also requires a considerable quantity of heat for its own volatilization. In the Coos Bay coal, the texture of the wood from which it was formed is often beautifully preserved. Several of these facts, as well as some facts in the physical and geological features of the country itself, point to a probability that the Coos Bay coal is of somewhat more recent formation than the Mount Diablo beds. Before leaving Coos Bay, I visited the site of

The Old Town of Randolph.

Now deserted, on the mouth of Whisky Run, a small Creek which enters the ocean some four miles north of the Coquille river. The surface of the country from Whisky Run to the Coquille river for a mile or so back from the coast, consists of low, rolling hills of sand and gravel, covered with a thin soil which supports a scanty growth of grass and scattering trees. These hills front the sea in a continuous line of bluff. The sands of the beach along the foot of this bluff for three or four miles to the south of Whisky Run have been in the past extensively worked for gold, and are said to have been very rich. It was this beach mining that gave rise to the town of Randolph, and that alone supported it as long as it continued to exist. The working was carried on chiefly with the shovel and Long Tom.

The Gold Sand

Was uniformly very fine; no single nuggets having ever been found of more than four or five cents in value. It was impossible, of course, to save all the gold. The loss in the tailings was constant and heavy, and a considerable portion of the ground here is said to have been worked over six or seven times in succession, paying well each time. The locality at, and immediately south of Whisky Run is said to have been enormously rich; and it is stated that for a little while it was no rare thing for a single miner to take out a thousand dollars worth of this fine gold dust in a day.

My informant upon many points relating to the history of this work was F. G. Lockhart, who has been in this country some 18 or 20 years, and is thoroughly familiar with it. He is now engaged in working a "black sand" mine, at a different locality, of which I shall presently speak. He tells me that the productive stratum along this beach was a layer of "black sand," from 1 to 2 feet in thickness, generally buried from two to five feet deep beneath an accumulation of lighter sand. But this last accumulation appears to be a transient thing, as the action of the wind and waves on this beach varies greatly at different seasons—sometimes casting up large quantities of sand, and again sweeping it all away, so that the surface of the beach is constantly changing, and is at some times five or six feet higher than it is at others. It thus appears probable that the auriferous stratum of "black sand" lies at the bottom, and forms the floor of what may be called the *zone* of perpetual change of the beach. It is also said to have covered the whole width of the beach from the very base of the bluff, as far out beneath the waves as it has ever been possible to carry explorations at the lowest tides.

It has long been a popular belief, and is still the opinion of many, that this "black sand" together with the gold which it contains, have come from the depths of the sea, having been simply cast up by the action of the waves upon the beach. But such, in my opinion, is not the fact. I know of no argument in favor of such an idea beyond the simple fact that these sands are found upon the beach; while there is a strong *a priori* argument against its probability in the high specific gravity of the "black sand" itself as well as the gold, and in the fact that the heaviest materials are not those which waves most readily throw up upon a beach.

There is no difficulty here in pointing the finger at once to a perfectly adequate source for all the gold without going to sea to hunt for it. In the first place, there is no difficulty with the pan and shovel in finding the "color" of gold, not only throughout the material which forms the face of the bluff that fronts the beach but also almost anywhere on the surface of the low rolling hills stretching backward from the bluff, and in the second place, there is plenty of evidence that the whole front of the bluff itself is wasting away with comparative rapidity by the action of the waves and storms.

The Beach Receding.

At one point I saw in the sands of the beach, the stump of a tree six or seven feet in diameter, evidently where it grew, the wood but partially carbonized, the fibre brown and soft, though still rather tough and exactly resembling in character the woody fibre in a bed of incipient lignite, or half carbonized vegetable matter two or three feet thick, which crops out for a long distance, in the face of the bluff, a few feet only above the level of the beach, and buried under from 30 to 50 feet of the half consolidated sand and fine gravel which forms the upper part of the bluff. Mr. Lockhart states that when he first saw the stump, 18 or 20 years ago, it was about half covered up by the foot of the bluff; now the foot of the bluff is at least 20 feet from the centre of the stump.

At this point, when the tide is low, the tops of a number of other stumps may be seen, still standing upright where they grew, but ordinarily covered with water now, and some of them a hundred yards or more outside of present mean low water line.

A "Black Sand" Mine,

Which Mr. Lockhart is now working, is not on the present beach at all, but is back in the timbered country, two or three miles southeast, from the mouth of Whiskey Run, and 190 feet above sea level. This hight of a former beach above the sea is another indication of the comparatively recent changes of level here.

In opening a tail-race from his mine to the sea, Mr. Lockhart has made, with the aid of water, a cut half or three-quarters of a mile in length, and from 25 to 40 feet deep, straight through the low, rolling hills that border the shore, thus exhibiting a fine section of their structure. Here, as well as in the bluffs along the beach, they are seen to consist of alternating beds of sand and fine gravel, lying everywhere nearly horizontal. Sticks and logs are not uncommon scattered through the mass, and in the cut some trees have been unearthed still standing where they grew. Two or three large stumps still remained upright in place at the time of my visit, with their roots about forty feet beneath the present surface of the hills, and with their woody fibre in the same condition as that in the bed of half-formed lignite, which crops in the bluff along the beach.

I was shown a human skull, probably that of an Indian woman, which was found some years ago in the bluff itself, about ten or twelve feet beneath the top, and under several feet in thickness of the fine gravel deposit which helps so largely to make up this formation. The skull has evidently been long buried, but it might possibly have been covered by a slide, and I have little faith that it is really so old as the gravel of these hills.

Colonel Lane states that in his mine the "black sand," so far as worked, has averaged from 5 to 6 feet thick. There is more or less fine gold scattered all through this sand, and also some platinum, mingled with more or less iridosmine.

The Difficulty of Saving Gold

From the "black sand" appears to be due chiefly to two causes; to its fineness, which permits it to be so readily washed away by a stream of running water; and from the fact that a portion of it seems to be coated with a substance which protects it from the action of the mercury. It is not so clear of what this film consists. Mr. Wright, who owns a "black sand" mine north of Lockhart's, thinks that in his mine it consists chiefly of organic matter, perhaps of bituminous oils. He burns his sand in heaps before amalgamating it, so that it is exposed to a high degree of heat for several hours. He then works it in an arastra, and by this treatment he obtained two or three times as much gold as he could without the burning.

At the time of my visit, Mr. Lockhart was making preparations to apply on a large scale, Plattner's Chlorination Process, to extract the gold from these "black sands."

With this material, no expensive preliminary roasting will be required, and if the chlorine will dissolve with sufficient rapidity gold which is as coarse as this, I see no reason why it may not prove a complete success in the extraction of gold. The experiment is well worth trying, and it will be interesting to know the results which he obtains.

Volcanic Formations.

I left Coos Bay on the 9th of November for Portland. Between Roseburg and the head of the Willamette Valley, I noticed considerable unaltered rock, both shales and sandstones in various railroad cuts.

I saw nothing that I could recognize as volcanic, till I reached the vicinity of Albany, where the gravel used in ballasting the road, contains volcanic pebbles.

Some 25 or 30 miles before reaching Portland, we struck the basaltic bluffs, on the right bank of the Willamette river, and from that time forward, I saw no rocks except volcanic till after I left Portland for San Francisco.

I will not attempt to describe the magnificent cañon of the Columbia river, through the Cascade Mountains between Portland and the Dalles, so familiar to all travelers in Oregon. I will only direct attention for a moment to one most striking contrast between the character of the volcanic matter here, and that on the western slope of the Sierra Nevada, in California. The Cascade Mountains, where the Columbia cuts through them, appear to be entirely made up of a series of superimposed sheets of lava, which, when it flowed, ran not into narrow streams, but spread its fiery floods both far and wide in all directions over the then smooth or nearly level, or very gently sloping country. They, therefore, consist to-day of terraces of solid compact rock from base to summit, and the quantity of breccias or fragmentary materials of any kind, is comparatively so small as to be hardly noticed.

The western slope of the Sierra Nevada, on the contrary shows its volcanic matter, almost exclusively in fragmentary forms. Beds of ashes, breccias and volcanic gravels and conglomerates are everywhere; but lava-flows are few and far between.

This is true especially in the central portion of the State. But throughout the central and southeastern portion of the Sierra there is, so far as I know, on the western slope, but one great lava-flow,—the Tuolumne county Table Mountain. Moreover, the total quantity of volcanic matter in the mining countries of the Sierra Nevada is utterly insignificant compared with the vast accumulations that have built up the Cascade range. The absolute quantity in the Sierra is indeed great. But that in the Cascade Mountains is more than great; it is stupendous.

The Great Peaks of Oregon.

I am tempted to add a few words about the view of Mount Hood, Mount Adams and Mount St. Helen's, which I obtained from the hills just back of Portland the morning after my return from the Dalles.

The weather, which had been stormy for several days, cleared up during the night, and that morning the air was full of a depth of purity and transparency, such as it only has on the higher mountains, at rarest intervals and after storms.

Those who have seen Mount Hood and Mount St. Helen's, know that both of them rise, like Shasta, towering, solitary and sublime, 5,000 or 6,000 feet above everything else around them. Mount Adams is said to rise in a similar way, and Mount Rainier is even grander still. But Mount Rainer is not in sight from here, being nearly in line with, and probably hidden by, Mount St. Helen's. The base and the greater portion of the mass of Mount Adams were also hidden by some high mountains which rise between, but its snow-clad summit rose clean and high over all in the distance and sharply cut against the deep blue heavens.

Yet the beauty and the majesty were in Mount Hood and Mount St. Helen's. These stood revealed in all their outlines, but robed from base to crest in virgin snow, as pure and white as only freshest snow can be in sunlight such as this. The lower mountains and the forests far around the base of Hood were also white with snow, and here and there a rocky spur protruded from the snow high up the steep slopes of the peak itself.

But up to the very foot of St. Helen's swept the dark forests, without a speck of whiteness, and from their deep shades she rose in sharp-cut, solitary majesty, the most symmetrical volcanic cone I ever saw, lifting her head to heaven, without a spot in all her robe of white—grand in her lonely altitude, unrivalled in stately beauty, and clothed in rare and radiant glory by the sunlight and the snow.

The Mount Lincoln Silver Mines.

Are nearly deserted for the Winter. Only one man is left at the town of Quartzville, and about twenty men at the mines above. About a dozen men are also staying at Buckskin and Dudleyville. Dudley & Peters' furnaces were to start up on Saturday last, and they think they have ore enough on hand to last them until Spring opens. They have some 200 tons of first-class ore from the Moose mine, estimated to be worth from $400 to $500 per ton, besides many smaller lots from other mines in the immediate vicinity. Seven men are wintering at Breckenbridge, and about as many more in the smaller mining camps in the vicinity. Some four or five are also hibernating at Hamilton. Fairplay has also assumed its usual Winter quiet, but we look for lively times, and a big bullion yield from that region next season. About twenty-five men are employed in the mines at St. John's and Montezuma, in Snake River, but no mill is running in the District. A run made some time since, at the Boston S. M. Association's mill, we understand, was not very highly satisfactory. One hundred tons of ore as it came from the mine, was concentrated in the mill, producing about seven tons of smelting galena, which after smelting, gave a little over four tons of pig lead, worth, by assay, 130 ounces silver per ton. Besides this, they got about ten tons of amalgamating ore, estimated to be worth 30 ounces per ton. As a total result, we have in the 100 tons of ore, silver $676—amalgamating ore $390, and lead at $4 per 100 lbs—a very liberal price at the works—$320; total, $1,386, or $13.86 per ton. The ore as it comes from the mine undressed, is reported to be worth in silver alone, $30 to $35 per ton, showing a big loss somewhere—probably in concentrating. The ore carries a small per cent. of copper and zinc blende, ores that carry a much larger per cent. of silver than galena, the predominating ore of the mine. The gangue is a heavy spar (sulphate of baryta) principally, the specific gravity of which is higher than that of zinc blende, and nearly equal to that of gray copper, which renders it very difficult to separate by the process adopted at that mill, a fact that probably accounts for a portion at least, of the loss, the most of the silver having been washed out and lost with the tailings.

In fact, we have been reliably informed, that an employé of the mill took up a sample of tailings below the mill, which he assayed and found it to be richer in silver than the concentrated ore saved in the mill. This fact he reported to the Superintendent and *was discharged* for his zeal in looking after the interests of the Association, in a line out of that for which he was employed. Better results are looked for from the St. Lawrence mill, which is to be started up early next season. It is to be operated on a different, and most metallurgists think, better plan for that class of ore. They have a good mine and mill, and the management is intelligent and economical—good guarantees for success.—*Colorado Register.*

Mining in British Columbia.—The Cariboo *Sentinel* publishes the following: The Ballarat, William Creek, washed up forty ounces for three days' work. The Point Company, Lightning Creek, washed up 220 ounces, and 120 ounces for one week's work; ground improving in appearance. The Eleven of England are waiting for their pumps, and taking out about expenses. On Antler Creek the Eureka Company have found gold in the channel which they are prospecting. They are now fixing up for the winter's operations. The Perseverance Company, on Harvey Creek, continues taking out pay, but have still many large boulders to contend with. Keithly Creek has paid better this season than it has done for the last five years. The Clydesdale Company has paid considerably over expenses. The White Squall Company has also taken out good pay. The Discovery and Two Sisters Companies, Jack of Clubs Creek, are taking out good pay. The latter company has been finding very heavy coarse gold. The Two Brothers Company have bottomed their blind shaft at thirty feet, and found smooth bed-rock with sediment and gravel—bed-rock dipping to the westward. This company has now let a contract to J. Pomeroy to sink a shaft 100 feet in depth over a spot where the indications show the existence of the channel.

Scientific Progress.

A New Theory for Volcanoes and Earthquakes.

There are few things less satisfactorily accounted for than the phenomona connected with volcanoes and earthquakes. The chemical theory; the theory of a molten interior; the theory of isolated subterranean lakes of molten matter, and lastly the electrical theory, have each had their advocates, but have all failed to meet the conditions required to establish them on anything like a scientific basis. But a new theory has recently been brought forward by Mr. Robert Mallet, a scientist, who has long made the phenomena of volcanoes and earthquakes his special study, and whose publications upon these subjects have obtained much favor from the scientific world. This theory seems quite competent to explain most, if not all the facts which have hitherto appeared most perplexing. His theory has been put forth substantially as follows:—

It is recognized by physicists that our earth is gradually parting with its heat. As it cools it contracts. Now, if this process of contraction took place uniformly no subterranean action would result. But if the interior contracts more quickly than the crust, the latter must in some way or other force its way down to the retreating nucleus. Mr. Mallet shows that the hotter internal portion must contract faster than the relatively cool crust; and then he shows that the shrinkage of the crust is competent to occasion all the known phenomena of volcanic action. In the distant ages when the earth was still fashioning, the shrinkage produced the *irregularities of level* which we recognize in the elevation of the land and the depression of the ocean-bed. Finally, as the globe gradually lost its extremely high temperature, the continuance of the same process of shrinkage led no longer to the formation of ridge and table-lands, but to local crushing-down and dislocation. This process is still going on, and Mr. Mallet not only recognizes here the origin of earthquakes and of the changes of level now in progress, but the true cause of volcanic heat.

The modern theory of heat as a form of motion here comes into play. As the solid crust closes in upon the shrinking nucleus, the work expended in crushing down and dislocating the parts of the crust is transformed into heat, by which, at the places where the process goes on with greatest energy, "the material of the rock so crushed and of that adjacent to it are heated even to fusion. The access of water to such points determines volcanic eruption."

Now, all this is not mere theorising. Mr. Mallet does not come before the scientific world with an ingenious speculation, which may or may not be confirmed by observation and experiment. He has measured and weighed the forces of which he speaks. He is able to tell precisely what proportion of the actual energy which must be developsd as the earth contracts is necessary for the production of observed volcanic phenomena. He is able to show, by calculations which cannot be disputed that less than one-fourth of the heat at present annually lost by the earth is sufficient to account for the total annual volcanic action, according to the best data at present in our possession.

It is worthy of notice, that Mr. Mallet's theory of volcanic energy is completely opposed to ordinary ideas respecting earthquakes and volcanoes. We have been accustomed vaguely to regard these phenomena as due to the eruptive, outbursting power of the earth's interior; we shall now have to consider them as due to the subsidence and shrinkage of the earth's exterior. Mountains have not been upheaved, but valleys have sunk down. And in another respect the new theory tends to modify views which have been generally entertained in recent times.

Our most eminent geologists have taught that the earth's internal forces may be as active now as in the epochs when the mountain ranges were formed. But Mr. Mallet's theory tends to show that the volcanic energy of the earth is a declining force. Its chief action had already been exerted when mountains began to be formed; what remains now is but the minutest fraction of the volcanic energy of the mountain-forming era; and each year, as the earth parts with more and more of its internal heat, the sources of her subterranean energy are more and more exhausted. The thought once entertained by astronomers, that the earth might explode like a bomb, her scattered fragments producing a ring of bodies resembling the zone of asteroids, seems further than ever from probability; if ever there was any danger of such a catastrophe, the danger has long since passed away.

Bisulphide of Carbon for Extracting Oils. F. Fischer states that in Gottschald's oil factory where 30,000 cwt. of oil seed are extracted, the workman do not suffer from headaches, and that in extracting 100 kilos. of seed only half a kilo. of the bisulphide is lost. Even this loss he thinks is due to decomposition, the sulphur set free attacking the vessels, especially those of copper.

Telegraphing by Sound through Water.

In 1828 Strum and Colladon made a series of experiments at Lake Geneva. Switzerland, to determine the rate of transmission of sound through water. The sounds were produced by striking a bell suspended from a boat at a suitable depth in the water, while the observers were stationed in another boat at a distance and received the sonorous impressions through a long metallic tube, the lower end of which was closed by a membrane and immersed at a considerable depth in the water. In these experiments the bell weighed about one hundred and thirty pounds, and the sound was heard at a distance of about 14,000 yards.

During the recent siege of Paris the attempt was made to obtain telegraphic communication with the provinces by the device of transmission of sound through water, and the Minister of Public Works confided the necessary experiments to M. Lucas, who reports the following results; The experiments were conducted as in the former instance and made in the River Seine. Two bells were employed, one of about eighty pounds and the other of seven hundred pounds weight. In the case of the first the sound was transmitted to a distance of about 1,800 yards, while in the case of the second or larger bell only to 1,500 yards. There was therefore no advantage gained by the increase in the size of the bell—in fact there was a loss. The great diminution in the distance to which the sound was conveyed in his experiments is accredited by M. Lucas to want of depth in the waters of the Seine as compared with those of Lake Geneva.—*Scribner's for December.*

Density of the Supposed Resisting Medium in Space.—The density of the supposed resisting medium in space is computed to be such that it would support a column of mercury less than the two hundred and twenty million-million-millionth of an inch high. [A fraction expressed by 220 for a numerator and 1 followed by eighteen naughts as a denominator.] This rarity of the ether comes out so great that the figures fail to convey any definite idea to the mind, and we must have recourse to illustration to bring out their significance. A man inhales on an average twenty cubic inches of air at each breath, or, in other words, a quantity of air equal in bulk to an apple three and a third inches in diameter; but if the density of the air were attenuated to that of the ether, he would be obliged to take into his lungs at each inspiration a bulk of it equivalent to a sphere of not less than fifteen and probably one hundred and seventeen miles in diameter. This of course indicates merely the probable *order* of the density of the ether.

Spontaneous Decomposition of an Alloy of Lead.—It appears that, among a collection of coins and medals belonging to the University of Munich, there are preserved some copies of medals and coins made of a soft alloy—bismuth and lead—which was found to consist (when unaltered) of various proportions of the metals alluded to, namely: 1st, Lead, 66; bismuth, 34; 2d, Lead, 86; bismuth, 14; 3d, Lead, 88; bismuth, 12. It is apparent that these alloys were not all made at the same time; in some instances, the medals cast in these alloys had not only become somewhat oxidized but had even fallen to powder, which effervesced on being treated with acetic acid, and the solution was found to contain chiefly lead, but bismuth was also present. Dr. Vogel observes that it is rather curious that alloys kept in well-closed show cases should have become thus altered and deteriorated; the cause is ascribed to the tendency of bismuth to crystallize, whereby a molecular change is first effected, and thus oxidation is rendered more easy.

Luminous Meteors.—Prof. Herschel, during a discussion at the late meeting of the British Association, on the subject of luminous meteors, remarked that the November "shower" meteors seemed to move in an elliptical orbit, similar to that followed by certain comets, and that they have probably been drawn from space and compelled to assume such an orbit by the attraction of the sun. He said that the most of the occasional meteors were too small to pass through the earth's atmosphere, without being dissipated by friction in the air, although now and then one of exceptionally large dimensions would reach the ground, and sometimes fatal accidents had been caused thereby.

Metals from the Soot of Coals.—H. Reinsch states that, while testing some soot collected in a stovepipe, he perceived the smell of arsenic; this gave rise to further experiments, the result of which showed that the soot contained iron, manganese, copper, arsenic, potassa, soda and lime, in considerable quantities. The coal which yielded this soot is that found at Zwickau, Saxony.

Underground Temperatures.—We have already stated the fact that Father Secchi has undertaken to conduct a series of experiments on underground temperatures at the Mt. Cenis Tunnel. We now see it stated that instruments similar to those to be used by Father Secchi will be furnished to the Smithsonian Institute, for similar observations in the great tunnel which is now being cut through the Hoosac Mountains in Mass., as well as to observers at Ballarat, Moscow, St. Petersburg and Paris, at which localities explorations are being made in the sub-wealden rock. Observations of much value are expected from these distant localities.

Mechanical Progress.

The Life and Wear of Rails.

It is impossible to estimate the life of rails. Out of 12,000 tons recently laid on the Boston and Albany railway, 8,000 tons had to be removed in about one year. Under favorable conditions, *good iron* will last eight years under the average traffic of a first-class road, but with the material commonly employed, from three to six years, and sometimes less is all that can be counted upon. Fast-moving trains wear out rails much more rapidly than those running slow—the difference is estimated as two to one. The wear is greatest where the bulk of the traffic falls upon the down-grades. In one instance, a mixed traffic of 62,390 trains very nearly wore out the best rails on a 40-ft. descending grade in 7½ years; while the same description of rails upon a level grade, withstood the passage of 203,122 trains. For equal amount of traffic, the wear of rails is assumed to be as the square of the speed.

The iron first used upon English roads stood from 15 to 20 years, even under an enormous traffic; no such rails are now made, unless of steel. In 1840, it was estimated, upon the London and Northwestern Railway, that the passage of 313,000 trains would wear out a 70-pound rail. With the material now put into rails, no such service is obtained. Mr. Price Williams states that the best quality of rails, as now made, will not stand the passage of over 100,000 trains. The difficulty does not seem to be so much in the impossibility of making good and serviceable iron rails, as in the fact that few are made. In this respect the same facts hold good as has been frequently referred to in the manufacture, during late years, of nearly all classes of iron work.

With regard to the life of steel rails, every thing here again depends upon the quality of the metal. A pair of 21-ft. Bessemer steel rails, upon the London and Northwestern Railway, outlasted sixteen faces of iron rails, being evenly worn to a depth of a little over a quarter of an inch; having in about three years sustained the traffic of upward of 500,000 trains. This particular pair of rails was finally destroyed by a locomotive running off the track, the wheels striking the rails transversely and badly bending and breaking them. It was estimated that they would have endured at least one-half as much more traffic but for the accident.

So, too, upon the Philadelphia, Wilmington and Baltimore Railway, a good steel rail has outlasted sixteen iron rails, the use of both being the same, and on many other roads of large traffic the same successful results have been achieved. Railway managers have got to exercise more care and discrimination in the quality of the rails they purchase, whether made of iron or steel. In fact, there is a good amount of pretty miserable stuff sold for steel rails, as many of our managers know to their cost.—*Condensed from Railroad Times.*

Monster Derrick. — Some months since, the Delamater Iron Works constructed, a 100-ton floating derrick, which is now in successful operation, and is the most powerful structure of its kind in the world. It was constructed for the purpose of transporting and laying under water the huge monolyths of artificial stone or béton which form the lower part of the river wall which is to surround the water-front of the city, and has a lifting power of upwards of 100 tons. The float which carries the derrick is of rectangular form, 66 by 71 ft., and 13 ft. in depth. It is put together in the strongest manner, in order that it may stand, without twisting, the heavy loads it carries on its deck, as well as the strain caused by the great weights which are lifted by its boom. The tower, which is placed upon the float, and which carries the derrick proper, consists of a king-post supported by 12 legs or braces of Georgia pine, 63 ft. 3 in. in length, and 14 in. square, stiffened from one end to the other by struts and braces; their lower ends are bolted into a heavy, cast-iron circle, which, in its turn, is held down by numerous bolts, which pass down through the bottom of the float. At their upper extremity, these legs are brought close together and inserted into a heavy cast-iron cap, to which they are bolted. The tower thus described accordingly forms a frustrum of a cone 40 ft. in diameter at the base, 62 ft. in height, and 12 ft. in diameter at the top. The cast-iron cap which surmounts it is made with a circular hole, through which the king-post passes.

Patents in Japan.—Mr. Mori, the Japanese minister at Washington, has been making particular enquiries with regard to the American patent system, and expressed the hope that he may be able to prevail upon his Government to introduce a liberal patent system into Japan—one that would stimulate the skill and industry of the people. In view of the intelligent and progressive spirit shown by this people, such a policy would be of much advantage to our inventors and mechanics.

Iron Buildings.—The *American Manufacturer* says: "It would be difficult to trace back and fix the date of the earliest employment of iron in house structure. Certain portions of buildings, such as beams, supporting columns, and pillars, have been used exclusively for many years, both abroad and at home; but the idea of constructing a building, of which the whole external frame work should be in this material, is, we believe, an American one, originating with, and first practically accomplished by Mr. James Bogardus, of New York. To the best of our knowledge, the first building in this country or elsewhere, having front and rear of iron, was erected in the city of New York, and occupied as a business place by this gentleman about the year 1844. In spite of many adverse criticisms and prophesies of the impracticability and failure of his plan, Mr. Bogardus, shortly after the erection of his first building, entered definitely into the business of erecting iron buildings, and from the realization of his earliest attempt, succeeded shortly in establishing upon a firm, practical basis a branch of industry, which has now grown to colossal dimensions, and in really inaugurating what has since developed into a revolution in the construction of large buildings for business or other purposes, designed to be secure against fire.

Wrought Iron Tubes.—Heretofore wrought iron tubes have not been produced except at high price, on account of the tedious and expensive way of making it. Costing from 200 to 1,000 per cent. more than solid iron, according to weight of tube, it could not be made to take the place of solid iron, from the fact that such iron, though twice the weight, was less expensive. It is well understood by every engineer that a properly-proportioned tube is stronger and safer, under vibratory strain, than a solid bar. Therefore the great desideratum was how to produce a cheap tube in wrought metal. After years of study, and experiments innumerable, a process is said to have been discovered by Elbridge Wheeler, of the American Tubular Iron and Steel Association, of Philadelphia, so simple that there remains no doubt of its ultimate success. By this process, hollow objects in iron, in steel, and steel and iron combined, can be produced, such as car axles, marine shafts, and bridge columns, with varying diameter in the same tube, which cannot be accomplished by any other process.

A New Kind of Flint Glass.—Dr. Benrath, director of the glass-works at Dorpat, Russia, publishes an account of experiments made by him to introduce a glass which has the good qualities of flint glass without its defects. The good qualities of ordinary flint glass are, that it is as clear as crystal; that it has a high specific gravity (is heavy); a low fusing point, so that it melts easily; and strong power of refraction and dispersing light. It is, therefore, invaluable for chemical and optical purposes. Its defects, however, are, that it is easily acted on by chemical and mechanical influences—that means, it cannot stand rain and sunshine, much less acids or boiling water, and is so soft that it is most easily scratched. The chemical difference between ordinary and flint is that the former consists of silex, lime, and soda or potash, while oxyde of lead is added to make flint glass out of it.

Boiler Scale. — Many substances are employed for the purpose of preventing the formation of scale in boilers. Among these, some act chemically, as soda ash, chloride of barium, carbonate of ammonia, chloride of ammonia and tannin, or extract of oak bark. Saw-dust from mahogany and from the wood of cone-bearing trees acts in part mechanically, but the slime it produces in the boiler often passes over into the valve-chambers and cylinders, and causes serious trouble. Clay, free from sand is said to have been used with success, but it also at times passes over into the cylinder. Starch and potatoes have been used for a long time, and now molasses is recommended. Dye-wood extracts, bran and chicory act by the starch and glucose they contain. Fats and tar are also used, but many deny their efficiency.—*Scribner's.*

Mechanical Invention.—The wonderful progress developed by the inventive genius of this country is noticeably attracting foreign interest. The London *Times* states that the attention of Professor Pepper, during his visit to the United States, will be directed to the "great recent development of mechanical and inventive ingenuity among their citizens, a development which has its gage in the extraordinary number of American patents which have been taken out during the last few years. A succinct history of the inventions of a given period would doubtless throw much light upon the other aspects of its civilization; and something like this is contemplated by Professor Pepper, as the ultimate result of his travels."

American Engineers.—Col. J. G. Medley, of the Royal (British) Engineers, and author of the "Roorkee Treaties on Civil Engineering" has recently been examining the engineering works of this country, with a view to the application of American methods in professional work to the East India improvements. He returns to India, carrying with him most favorable impressions in regard to the character of our internal improvements, and speaks enthusiastically of our technical schools. We can but feel a just pride and pleasure at such evidence of our credible engineering and scientific progress, particularly when it is presented by one so well known as a professional engineer.

Stock Sales for Week Ending Dec. 12—S. F. Stock & Ex. Board.

NAMES OF COMPANIES.	Feat.	Shs. in ft.	FRIDAY. Shs	Prices.	SATURDAY. Shs	Prices.	MONDAY. Shs	Prices.	TUESDAY. Shs	Prices.	WEDNESD'Y Shs	Prices.	THURSDAY. Shs	Prices.	Tot'l Sh's Sold.	Assm't	Deling't
Adams Hill	*						10	42		15	40 @41	25	38 @40	15	10 @41	595	6½	
Alpha		300	20	25 47 @47½	60	46 @47	25	4½	270	4 @ 4¾	100	3½	100	3¾	100	3¾	595	¾	
Alpa	§	800	37½		25	4½	470	7¾@ 8¼	642	7¾@ 7¾	615	7¾ @ 7¾	175	6¾@ 7¾	100	6 @ 6¾	2510	1½	
American Flag	§	2600	11¾	605 7¾@28	470	7¾@ 8¼	642	7¾@ 7¾	615	7¾ @ 7¾	175	6¾@ 7¾	100	6 @ 6¾	2510	1½		
Amador Tun	§								20	5½	10	5	20	5	50		½	
Arkansas	§																	
Arizona & Utah	*	1900	19½	50 13¼			20	13¼		100	13¼	200	13¼@ 13¾	200	13¼@ 13¾	570	¾	
Belcher	*	1010	10	345 95 @97½	296	97 @100	700	98 @ 101	740	95 @98	655	93 @97½	330	97 @ 100	3066	2½		
Baltimore Con	§			270 13¾@ 2	100	13¾	250	13¾@ 13¾	150	13¾@ 13½	105	13¾@ 13½	75	13¾	950		⅜	
Bowery	§	1000	30	200 13¾	50	1	60	1 @ 1⅛					80	13¾@ 13¾	380		¾	
Bacon	§	65	61½															
Buckeye	*			150 27@ 3	30	2½	30	3¾					65	2½	375		⅝	
Best & Belcher	*	224	100	170 5					150	5 @ 5⅛	6	5	20	5½	400	½		
Bellevue	‡	8000	2½															
Belmont	*			450 4½@ 4⅝	50	4¾					500	4¾@ 4⅞	550	4¾	1550		½	
Chollar	*	5000	10	570 52½@55	355	57 @60	825	50½@55	1250	45 @52	1130	44 @50	670	49 @52½	4800	2½		
Caledonia	*	5000	4	310 23 @24½	850	23 @24¾	995	22½@24	345	21 @23	585	21¾@23	240	22½@23¾	3325		1	
Cons. Virginia	*	1160	20⅜	10 41	290	41 @44	645	42 @45	165	43 @44	575	41¾@44	430	42 @46	2165	5		
Confidence	*	130	192	70 12					150	10 @10¾	130	10¾	90	10	463		2	
Crown Point	*	600	166⅔	545 98 @102	290	100 @102	300	99 @ 101	430	95 @ 100	610	91 @96¾	150	96 @99	2225		3	
Central	§	70	537		10	7									10			
Calaveras	‡	3200	6¼															
Condor	*			150 75c @87½	55	75c @80c	30	50c	200	75c			60	1⅛	495	24½		
Columbus	*								120	15 @16					150		1	
Chapman	§	700	40	200 13¼	90	1⅛	555	1 @ 1¼	675	1¼	225	1¼	325	1¼	2040		¼	
Chief of the Hill	*	1000	30	65 4½	120	4¾	90	4¾	475	4¼@ 4½	180	4¼@ 4¼	250	4½	1120		¼	
Chief Easet Ex	§																	
Cedarburg	‡	1200	20	21 5 @ 7			55	7 @ 7½	150	7¼@ 7½	50	7¼	50	7¼	306	¼		
Con. Gold Hill Q	*	13¼	237										10	5	10			
Daney	*	2000	12		100	150									100			
Eureka Cons	*	1000	30	1480 16½@17½	425	17¾@18¾	760	17¾@18	700	16 @16¾	260	16 @16½	125	16 @16¼	4690		1¼	
Eureka	‡	1680	12	20 17					120	15 @16					150		1	
Exchequer	*	400	20	10 16			30	16			50	14	20	14	110		2	
Eclipse	*	70	357	70 9			20	9	75	9	70	9			205			
Empire Mill	*		16	3245 9 @ 9¾	270	8 @ 8½	1130	7 @ 7¾	1635	7 @ 7½	380	7¼@ 7¾	450	7 @ 7½	11610		2½	
Excelsior	§	4500	2⅜															
Gould & Curry	*	1200	4	90 157 @ 180	45	167 @180	27	166 @ 170	71	165 @ 165	50	162 @ 163	47	170 @172	330		8	
Golden Chariot	‡	750	1¾	60 10 @10½	20	11 @11½	20	11½			30	10	320	8 @ 9¾	460		1¼	
Globe	‡	1600	12½	20 1¾									10	1¾	70		¾	
Hale & Norcross	*	400	4	130 66 @70	55	72 @73	21	67 @70	90	67 @68	55	67½@70	130	67½@70	481			
Huhn & Hunt	§	3600	8½		150	27@ 3	45	2½@ 2¾	295	2¾	120	2	475	1⅞@ 2	1085		1	
Hermes	§			160 12 @13	160	12¾@13			45	12	20	12			405		1	
Ida Elmore	‡	1300	7⅛		200	10 @11							425	10 @10½	975		¾	
Imperial	*	184	513⅜	1005 9½@10⅜	910	9 @ 9½	415	8 @ 9	785	7½@ 7⅝	730	8 @ 8½	655	8 @ 8½	4500		1¼	
Ingomar	§	1000	40	150 1½@ 1⅝	50	1⅝	520	1½@ 1⅝	967	1½@ 1⅝	200	1⅝	225	1½@ 1⅝	2337		⅛	
Independent	‡	1800	14															
Ivanhoe	§	600	5	300 70c							100	50c	400	50 @60	800		10	
Julia	§	2000	15	100 2¾	170	5½	205	5 @ 5⅝	645	4¾@ 5	150	4¾@ 4¾	350	4 @ 4¾	1620		1¾	
Justice	§	2000	7	40 12			15	2	110	7	30	7 @ 9½			195		2¾	
Kentuck	*	95	121				2	1.50		44	137 @ 140	25	140 @ 145	27	135 @ 140	98		½
Kentucky	§		20		25	5	50	5				25	4½		100		½	
Knickerbocker	*	1200	20	165 5 @ 5½	200	5 @ 5½	120	4¾@ 5	255	4 @ 4¾	430	3¾@ 4¼	100	4¼	1270		¾	
Mammoth	§	1800	20	350 40c			350	50c	3050	50c	3930	50c	100	50c	4780	10		
Meadow Valley	§		12½	1020 18¾@19½	800	18¾@19	1320	18¾@19¼	1015	18¾@18½	655	18¾@18¾	1225	19¾	6053		⅜	
Mahogany		720	13¾	335 10 @11	320	10			40	9½	30	9	500	9 @ 9¼	1225		13¾	
Mooking Bird	§	1200	25															
McMahon	§												100	3	100			
Moniter Belmont	§																	
Newark	§	800	40	240 3½@ 3⅝	25	3½	275	2½@ 2⅞	280	2⅜@ 3⅛	1225	2 @ 3¼	385	3 @ 3¼	2445		¾	
Ophir	*	1400	12	425 39 @41	115	39½@41	20	41 @42	250	39 @40	600	34 @35½	35	@36	1510		5	
O. H. Treasure	‡	800	26⅔	100 6			25	4½			60	4	190	4 @ 4¼	375		¾	
Overman	*	1200	13⅓	420 56 @57½	180	60 @62	40	63 @63½	350	59 @62	120	57½@60	60	61 @62	1170		4½	
Occidental	*	800	12½															
Piocho	§	1000	20	800 9¾@10¾			420	10 @10½	290	9 @ 9½	350	8¾@ 9	160	8¾@ 9	2020		1¾	
Piocho West	§																	
Piocho Phoenix	‡			1525 6 @ 6¾	845	6¼@ 6¾	440	5	1040	4 @ 5	510	5¼@ 5½	1225	5¾@ 5¾	5585		⅝	
Page & Panaca	§	2400	16⅔	150 2¼	600	2¼@ 2⅜	200	2⅜	200	2	420	2 @ 2⅛	235	2¼	1905			
Pea Vine	§	1000	30				2	70c	350	65c	50	65c			650		5	
Phoenix	*			720 2½@ 2¾			690	2½	240	2⅜@ 2½			155	2½	1805			
Raymond & Ely	§	4000	7¼	420 90 @93	485	86 @89	500	80 @86	415	73 @76½	513	82 @85	455	86 @89	2788		4	
Savage	*	800	20	595 61 @69	190	65 @71	605	63 @66½	222	61¼@63	590	55 @60	220	56 @62	2422		7	
Seg. Belcher	*	160	25	160					45	57½@60	10	62½@65	15	60 @65	275		¼	
Sierra Nevada	*	3900	7¼	115 14¼	55	14 @14¾	50	14			240	13½@13⅞	35	13¾@14	490		¼	
Senator	*								30	1					30			
Succor	*	7600	3						10	1	40	1¼			50			
Silver Hill	*				300	1⅛	450	1	115	1 @ 1¼	150	1	170	1	1185		¼	
Silver Peak	§			50 2	50	1½		1⅛	250	1½@ 1¾					450		¼	
South Chariot	‡	660	30½															
Trench	§		20	250														
Teonusch	§				200	1									200			
Wash. & Grecie	§	200	50	150 2¾	175	2¾	250	2	810	2 @ 2¼					1385		½	
Woodville	§	1400	20	100 5¼	125	5⅛@ 5¼	160	5	95	4¾@ 5			145	4¾@ 4¾	625		¾	
War Eagle	§	1000	10															
Utah	*	1000	20															
Yellow Jacket	*	1200	20	615 75 @86	290	80½@84	575	72 @79	670	66 @72½	777	69 @75	325	73 @79	3256		7	
Yule Gravel	†	400	25															

NOTE.—†—California. *—Washoe. ‡White Pine. §—Ely District. ¶Eureka District. ‖—Idaho. ⌊—Nearly.?—Over.

S. F. Stock and Exchange Board.

THURSDAY, Dec. 12th, 1872.

Stocks were dull all the first part of the week but toward the cloee evinced evidence of an improvement both in businees and pricee. It ie ahout time that they did, for the market hae been exceedingly dull for some time. Dividende are a little more numerous this month then last. Meadow Valley pays $60,000 or $1 per ehare for the first time since June 20th. A surplue of $60,000 is also carried overe, qual to another dividend of a like amount.

The Eureka (Graes Valley pays $1 per share —$20,000. The Raymond & Ely mine paye thie month only $5 or $150,000, instead of $7 per share, or $210,000 as has heen the case for a long time past. The Eeetport Coos Bay Coal Co. peys $5 per share—$,2500. No dividends from the Crown Point or Belcher thie month, although the report of the latter is favorahle for next month, for they have $700,000 on hand; the receipts for Novemher were $556,000. The North Star mine will pay no dividend this month as was expected, the Superintendent having drawn for $9,000, after having sent down $5,300.

Aesessments have not been as numerous this week ae usual of late.

On Friday the market was weak at low pricee, Belcher however, rose $2; Gould & Curry, $5; Yellow Jacket, $4; Ophir, $1; Eureka Con., $1; Meadow Valley, $1; Overman, fell $4 and Hale & Norcross the eame,

Saturday there was a elight improvement in prices and a feir husinees wae done, much hetter than hee usually been the case of late.

Monday, e tocks were dull egein, Belcher rose $1; and Cone. Virginia $2; Chollar fell $8; Caledonia, $3; Empire Mill, $1; Eureka Con., $1; Imperial, $1.50; Meadow Valley, 25 cents; Raymond & Ely, $4; Savage, $3.50; Jacket, $9.

Tueeday stocke were still dull and heavy, and pricee dropped generally. Belcher, $3; Crown Point, $4; Chollar, $6; Caledonia, $2; Imperial, $1; Eureka Con, $1; Savage, $2; Jacket, $6; Reymond & Ely, $2.

Wednesday the market showed greater strength, and it wae evident that pricee had touched hottom, Belcher rose $1; Chollar, $4; Empire Mill, $1; Gould & Curry, $5; Caledonia, $1; Reymond & Ely, $10; Jacket, $9; Meadow Valley, $1. Crown Point cloeed $3 higher than in the morning.

To-day the market was comparatively brisk, and a elight advance wae evident.

Below will be found newe from the prominent mines, later than that in our mining summary.

RAYMOND & ELY.—On the 5th inst., $36,437 was shipped; on the 9th, $31,290 wae shipped; previous to last, $60,429.67 had been ehipped, making a total for eight days of $91,716.67, equal to $11,464.96 per dey. A $5 dividend was paid thie month, instead of the $7 as nsual.

HALE & NORCROSS.—For the week ending Dec. 7th, 980 tons of ore were extracted, 1,117 eent to mills, and 1,134 tons remain on dumpe.

SAVAGE.—For week ending Dec. 7th, 775 tons of ore were extracted, assaying $29.68 per ton; 940 tons were sent to mill. and 155 tons are on the dump.

PHŒNIX.—On the 4th., 10 tons of hullion were shipped, asseying $285.85 per ton; on the 6th, 10 tons, assaying $234.01; on the 7th, 10 tons, assaying $239.12 per ton.

BUCKEYE.—During week ending Dec 7th, 125 tons of ore were taken out, assaying $22.40 per ton.

EUREKA.—Last weekly clean up was 1,300 ounces for 6 days run of 10 stamps.

BELCHER.—The total receipts for November were $556,000; expenses, $212.000; cash ou hend $700,000.

PEAVINE.—On the 7th $3,248 wae eent down.

Pulp assays from the PEAVINE are $108 per ton. Average asseys of ore from the AMADOR TUNNEL is $300 per ton. On the 10th, 550 ouncee of bullion were received from the CEDERBERG, from 12 daye' run at the mill. The EMPIRE (Idaho) sent down $2,750 on the 10th. From the Chief of the Hill $2,098.81 wae sent down on the 6th. Three furnaces of the EUREKA CONSOLIDATED are running well.

MINING SUMMARY.

THE following is mostly condensed from journals published in the interior,in proximity to the minee mentioned.

California.

ALPINE COUNTY.

EXCHEQUER.—Alpine *Chronicle*, Nov. 30: In a few days the carpentere will he traneferred from the I X L and Exchequer mines to the Exchequer Mille. Vigorous work will he institnted for the completion of quartz mill. The hlacksmith shop ie to he removed and on its site ie to be erected a 90 ft. ore honse, to be connected with the mill by a tramway about 150 ft. in length. The boerding house is to he removed to another site to make room for e double extension of the saw mill; the rear of the mill is to he excavated, and the hank of the creek walled, for an immenee basin to hold tailings; the flume ie to he extended to a point where an additional fall of 12 ft. will be obtained; another Turbine is to be added, giving a 200 horse power, exclusive of the engine.

AMADOR COUNTY.

BACON.—Amador *Dispatch*, Dec. 7: The new "whim" is completed and iu running order and everything ie progressing finely. A contract has been let for sinking a shaft 100 ft. deeper.

CALAVERAS COUNTY.

SHAW CLAIM.—Caleveras *Chronicle*, Dec. 7: Washing has been commeuced.

HUDSON.—The sheft ie cleaned out to the depth of 100 ft.

STICKLE.—Calaveras *Citizen*, Dec. 7: The Stickle Co., at Angele, have their new building erected, and are prepering to erect new hoisting works.

FRESNO COUNTY.

SAN BENITO QUICKSILVER MINE.—Fresno *Expositor*, Dec. 4: The Co. owne 4 ledges of 3,000 ft. each, all of which have been pertially prospected, with most satisfactory results, large hodies of excellent ore heing discloeed. An English Co. has recently purchased a controlling interest with a view to working them extensively. It bids fair to be a very rich and extensive mine.

INYO COUNTY.

BENTON.—Inyo *Independent*, Nov. 30: Leete's new mill started up a few weeks ago; $5,000 worth of bnllion is shipped per week, of the average fineness of 986.

MARIPOSA COUNTY.

SUSPENDED.—Meriposa *Gazette*, Dec. 6: Operations upon the Josephine, Bear Valley, were euspended on Saturday, and the Benton mille are no longer rnnning. The entire Mariposa Estete is now lying idle, with the exception that there are ahout a dozen men employed in running a drift in the Josephine or Pine Tree mine. The ceuse of the suspensiou is that the operations for several months past heve failed to pay working expenses.

NAPA COUNTY.

OAKVILLE MINES.—Napa *Reporter*, Dec. 7: There are at work 16 white and 30 Chinemen. The furnece running has the capacity of 10 tone per day of 24 hours, hut another of the capacity of 15 tons is nearly completed. The monthly yield ie from 75 to 102 flaeke.

NEVADA COUNTY.

SCHMITT'S LEDGE.—Nevada *Transcript*, Dec. 5: The new pump works finely, and during the peet week over 20 tone of fine looking rock has been taken out. The ledge continues to look well. They are teking out a great deal of very rich specimen rock, which is to be cruehed separately.

STARTED UP.—Sargent & Jacobs, got their claims in good working order ahout 3 weeks ago. On Tuesday last they commenced washing.

WISCONSIN QUARTZ LEDGE.—Mr. Sweet will re-commence working this valuable property in March next. The ledge is from 2½ to 8 ft. thick, and the rock has never paid less than $60 per ton.

THE SITUATION.—G. V. *Union*, Dec. 7: The Enreka hae yielded about $44,000 for the 4 weeks ending last Saturdey, only 10 stampe running.

The Idaho is doing well. New machinery hae been started within a month. 35 etampe are runniug, and within the month they have made about 12 dayss' run. The yield for the time hae heen in the neighborhood of $40,000.

The Coe will he ready to go to work in a few deys. An additional 100 ft. will he mede to the depth of the shaft. The ledge shows well in a fine formation.

The empire continues to do well. The firet run of two weeke gave ahout $11,000, and the platee indicate that the second rnn will be a hetter one. The ore coming out is very fine.

Independence Co.'e tunnel ie in 325 ft. and ie going to he put through the hill, to tap 3 or 4 fine and large metel bearing ledges which crop ont on the snrface of the hill.

Greenhorn ie heing worked constantly, the greateet depth not inclnding the "enmp" ie 315 ft. Levels are heing run from the ehaft at that depth, both north and south. The north level ie in 18 ft. and the south is in 22 ft. In the north level the ledge is 3¼ ft. thick; in the

OUR MINING SHAREHOLDERS' DIRECTORY.

[COLLATED WEEKLY FROM ALL NOTICES ADVERTISED IN S. F. JOURNALS.]

ASSESSMENTS.

Name of Co.	Location.	Secretary.	S.F.Office.	Assm't.	Levied.	Deling't.	Sale.
Alanio G. & S. M. Co.	Washoe.	G. W. R. King.	411 Cal. St.	25	Nov. 2	Dec. 5	Dec. 26
AMAZON S. M. CO.	Ely District.	M. J. McManue.	609 Sacramento St.	10	Oct. 22	Jan. 6	Jan. 22*
Arizona & Utah.	Washoe.	Joseph Maguire.	419 Cal. St.	1 00	Dec. 7	Jan. 10	Jan. 30
Arkensas M. Co.	Ely District.	J. H. Applegate.	729 Monig'ry St.	50	Nov. 6	Dec. 16	Jan. 10
Buckeye M. Co.	Washoe.	Chas. H. Fish.	419 California St.	2 00	Oct. 28	Dec. 2	Dec. 23
Baltimore Con. M. Co.	Washoe.	D. T. Bagley.	401 California St.	50	Nov. 12	Dec. 18	Jan. 11
BUNKER HILL Q. M. CO.	Cal	Charles H. Knox, pro tem.	19 First St.	10 00	Dec. 3	Jan. 6	Jan. 27*
Calaveras G. M. Co.	Cal.	T. B. Wingard.	318 California St.	25	Nov. 14	Dec. 18	Jan. 7
Caledonia S. M. Co.	Washoe.	R. Wegener.	414 California St.	3 00	Nov. 9	Dec. 13	Jan. 3
Emerald Hill M. Co.	Utah.	F. Mudge.	Merchants' Exchange.	50	Oct 17	Nov. 20	Dec. 17
"420" M. Co.	Washoe.	H. D. Howard.	523 Montg'ry St.	1 00	Nov. 23	Dec. 27	Jan. 14
Gen. Lee S. M. Co.	White Pine.	C. F. Schultze.	426 Monig'ry St.	10	Oct. 29	Dec. 3	Dec. 27
GOLDEN RULE M.Co.	Tuolumne Co.	J. B. Russell.	432 Monig'ry St.	50	Nov. 2	Dec. 3	Jan. 4*
Granite Tunnel M. Co.	Cal.	W. G. Holmes.	443 California St.	6	Nov. 21	Dec 24	Jan. 6
GREAT BLUE G. R. CO.	Cal.	Wm. H. Watson.	302 Montg'ry St.	10	Nov. 16	Dec. 18	Jan. 7*
Harper S. M. Co.	Ely District.	J. R. Wilde.	306 Montg'ry St.	10	Nov. 23	Dec. 25	Jan. 13
Howard Hill G. M. Co.	Nevada Co.	J. L. King.	411 California St.	1 00	Oct. 23	Nov.	Dec. 16
HUDSON G. M. CO.	Cal.	J. L. King.	411 California St.	7½	Nov. 11	Dec. 16	Jan. 6
Hermes M. Co.	Ely Dist.	B. B. Minor.	411¾ California St.	1 00	Nov. 7	Dec. 13	Jan. 6
Huhn & Hunt S. M. Co.	Ely Dist.	L. Kaplan.	Merchants' Ex.	1 00	Nov. 12	Dec. 18	Jan. 8
Yellowstone M. Co.	Idaho.	Wm. Wylie.	419 California St.	2 50	Oct. 25	Nov. 30	Dec. 21
INDUS G. & S.M. Co.	Virginia City, Nev.	David Wilder.	24 Merch'te' Ex.	50	Oct. 19	Nov. 23	Dec. 16*
IVANHOE S. M. CO.	Ely District.	Daniel Buck.	331 Montgomery St.	1 00	Dec. 12	Jan. 19	Feh. 9*
Josephine Q. M. Co.	San Luie Obispo.	G. Staacke.	305 Sansome St.	2 00	Dec. 4	Jan. 13	Feb. 4
Julia G. & S. M. Co.	Washoe.	A. Noel.	419 California St.	2 50	Nov. 6	Dec. 10	Dec. 28
Justice M. Co.	Washoe.	R. Wegener.	414 California St.	1 00	Dec. 11	Jan. 14	Feh. 4
Kentuck G. & S. M. Co.	Ely District.	J. P. Cavallier.	509 California St.	50	Dec. 2	Jan. 11	Feh. 1
Lander Con. M. Co.	Eureka, Nev.	J. Lincoln.	332 Montgomery St.	10	Nov. 14	Dec. 16	Jan. 8
Lane & Kurtz Carihoo M.Co.	British Col.	B. B. Minor.	411½ Cal. St.	5 00	Nov. 3	Jan. 4	Jan. 25
Lemon M. & M. Co.	Eureka District.	J. B. Millken.	608 Merchant St.	1 00	Oct. 20	Nov. 30	Dec. 20
McMahon S. M. Co.	Schell Creek.	G. R. Spinney.	320 California St.	25	Nov. 25	Dec. 28	Jan. 20
MAMMOTH BLUE G. CO.	Cal.	J. M. Buffington.	New Merchants' Ex.	8	Nov. 18	Dec. 23	Jan. 13*
Mammoth S. M Co.	White Pine.	J. L. King.	411 California St.	10	Nov. 12	Dec. 18	Jan. 8
Marion S. M. Co.	Ely District.	L. Kaplan.	Merchants' Ex.	25	Dec. 9	Jan. 15	Feb. 5
Minnesota G. & S. M. Co.	Idaho.	Wm. Willis.	419 Cal. St.	50	Nov. 21	Dec. 28	Jan. 18
NEVADA M. Co.	Placer Co., Cal.	G. R. Spinney.	320 California St.	30	Nov. 19	Dec. 23	Jan. 13*
MOCKING BIRD M. CO.	Nevada.	H. O. Kibbe.	419 Cal. St.	10	Dec. 5	Jan. 10	Jan. 31*
New York Con. M. Co.	Washoe.	H. O. Kibbe.	419 Cal. St.	25	Nov. 6	Dec' 12	Dec. 30
NORMAN G. M. Co.	Amador Co	G. R. Watson.	302 Montgomery St.	5	Nov. 11	Dec. 12	Jan. 1*
National M. Co.	Nye Co., Nev.	B. B. Minor.	411½ California St.	50	Nov. 7	Dec. 13	Jan. 6
OLD PROVIDENCE M. Co.	Lassen.	Frank Swift.	415 Montgomery St.	25	Nov. 7	Dec. 14	Jan. 6*
O. H. Treasure M. Co.	White Pine.	D. A. Jennings.	401 Cal. St.	1 50	Oct. 9	Nov. 15	Dec. 6
Orient S. M. Co.	Ely District.	J. Maguire.	411 California St.	25	Nov. 26	Jan. 3	Jan. 27
Pacific Coal M. Co.,	Contra Costa Co.	J. Lachman.	First and Market.	10 00	Sept. 25	Nov. 13	Nov. 30
Pauper Mo. Co.	Idaho.	J. L. King.	411 California St.	50	Oct. 4	Nov. 19	Dec. 16
Peavine S. M. Co.	Ely District, Nev.	C. F. Balcom.	426 Montgomery	25	Oct. 11	Nov. 20	Dec. 16
Peter Walter, M. Co.	Placer Co., Cal.	T. J. Owens.	Express Building.	50	Oct. 21	Nov. 26	Dec. 17
Piocbe S. M. Co.	Ely District.	C. E. Elliott.	419 Cal. St.	1 00	Nov. 6	Dec. 12	Jan. 6.
Pocahontas S. M. Co.	Eureka District.	J. Maguire.	419 California St.	50	Nov. 5	Dec. 16	Jan. 6
Pacific Borax Co.	Nevada.	E. Lenba.	507 Montg'ry St.	35	Nov. 12	Dec. 12	Dec. 27
PIERMONT M. & M. CO.	Nev.	J. W. Clark.	418 California St.	50	Nov. 21	Dec. 30	Jan. 24
Placer G. M. Co.	Placer Co., Cal.	G. W. R. King.	411 California St.	20	Dec. 3	Jan. 6	Jan. 27
Placer G. M. & O. Co.	California.	G. W. R. King.	411 Cal. St.	20	Nov. 11	Dec. 14	Jan. 4
Pocahontae G. M. Co.	El Dorado Co.	J. A. Jennings.	401 California St.	50	Nov. 4	Jan. 4	Jan. 28
QUAIL HILL M. & W. CO.	Cal.	T. F. Cronise.	438 California St.	10 00	Dec. 4	Jan. 14	Feb. 4*
Red Jacket G. & S. M. Co.	Washoe.	H. C. Howard.	332 Montgomery St.	10	Dec 6	Jan. 10	Jan. 25
Rising Star.	Eureka Dist., Cal.	J. M. Buttington.	Merchants' Ex.	15	Nov. 22	Dec 27	Jan. 13
Rising Star M. Co.	Idaho.	Wm. Willis.	419 California St.	1 00	Oct. 28	Dec. 3	Dec. 23
Sandstone G. M. Co.	Cal.	W. Stnart.	418 California St.	12½	Nov. 25	Dec. 27	Jan. 17
Savage M. Co.	Washoe.	E. B. Holmes.	401 Cal. St.	$10 00	Nov. 14	Dec. 17	Jan. 4
Schell Creek M. Co.	Schell Creek, Nev.	P. W. Van Winkle.	301 Cal. St.	10	Nov. 1	Dec. 3	Dec. 23
Senator S. M. Co.	Washoe.	Henry Boyle.	Stevenson's Building.	50	Oct. 29	Dec. 2	Dec. 21
Silver Peak M. Co.	Ely District.	H. O. Kibbe.	419 Cal. St.	50	Dec. 9	Jan. 11	Jan. 31
South Cbarlot M. Co.	Idaho.	J. L. King.	411 California St.	50	Nov. 27	Jan. 6	Jan. 27
St. Patrick M. Co.	Placer Co., Cal.	D. A. Jennings.	401 Cal. St.	2 00	Oct. 31	Dec. 3	Dec. 24
STATE OF MAINE M. Co.	Amador Co.	H. B. Congdon.	306 Montgomery St.	5	Oct. 17	Nov. 28	Dec. 16*
Star Consolidated M. Co.	Eureka Dist.	G. R. Spinney.	320 Monig'ry St.	25	Nov. 1	Dec. 6	Dec. 27
Stuart M. & M. Co.	Washoe.	H. B. Watson.	302 Montg'ry St.	1 00	Nov. 16	Jan. 6	Jan. 27
Tecumseh G. S. & C. M. Co.	Cal.	F. J. Herrmann.	418 Kearny St.	25	Nov. 18	Dec. 27	Jan. 17
Tehama Con. M. Co.	Schell Creek.	W. W. Stetson.	414 California St.	60	Nov. 27	Dec. 28	Jan. 18
U. S. GRANT M. CO.	Cal.	Enos Taylor.	226 Clay St.	50	Nov. 19	Dec. 30	Jan. 20
Utah S. M. Co.	Washoe.	Utah S. M. Co.	419 California St.	1 00	Dec. 12	Dec. 12	Jan. 4
VIRGINIA CON. M. CO.	Cal.	T. B. Wingard.	318 California St.	2	Dec. 11	Jan. 20	Feb. 10*
Waebington & Creole M. Co.	Ely Dist.	F. D. Cleary.	Merchants' Ex.	50	Dec. 21	Dec. 26	Jan 15
Wellington M. & S. Co.	Utah.	R. Wegener.	414 California St.	10	Nov. 12	Dec. 18	Jan. 7
War Eagle M. Co.	Idaho.	C. F. Balcolm.	426 Montg'ry St.	2 00	Nov. 4	Dec. 10	Jan. 6
Ward Beecher Con. M. & M. Co.	Nev.	D. A. Jennings.	401 California St.	1 00	Nov. 21	Dec. 28	Jan. 22

MEETINGS.

Name of Co.	Location.	Secretary.	Office in S. F.	Meeting.	Date.
Anna Quicksilver S. M. Co.		L. Kaplan.	Merchants' Exchange.	Annual.	Dec. 18
Cameron G. M. Co.		F. L. Kreeder.	515 California St.	Annual	Dec. 26
Charter Oak S. M. Co.		G. W. R. King.	411 California St.	Annual	Dec. 16
Eagle Quicksilver M. Co.		Wm. H. Watson.	302 Montgomery St.	Special	Feb. 21
Empire M. & M. Co.	Washoe.	H. E. Dean.	411 California St.	Annual	Dec. 18
"420" M. Co.	Washoe.	H. D. Howard.	523 Montgomery St.	Annual	Dec. 18
Gould & Curry M. Co.	Washoe.	A. K. Durbrow.	Merchants' Ex.	Annual	D

south about 2 ft. The ledge shows well in free gold and in sulphurets.

Daisy Hill shaft is down 340 ft., and 80 ft. below the second level. Good quartz and a fine ledge is shown in the bottom. Sinking for the third level.

Green Mountain is being worked constantly with good results. The shaft is down 106 ft., and levels are being run north and south from that depth. A 5-stamp mill is kept constantly at work, and about 4 loads of ore are crushed every 24 hours. The ore being crushed will average $60 per ton.

Gravel Mines.—The town talk is making its regular profits of about $1,200 a month, and has ground enough to last for several years.

The Dartmouth Co. has purchased additional ground, and is putting a railway track from the mill to the new purchase. A tunnel will be run into the ground just bought.

The Baltic, on the Alta range, is preparing to put a tunnel into the hill.

Reuben Thomas, on Grass Valley slide, has renewed his flumes, and he yesterday began to wash bottom gravel.

The Enterprise at Buena Vista Slide will have a mill at work in about 3 weeks, through which drifted gravel will be run.

PLACER COUNTY.

Our Quartz Mines.—Placer *Herald*, Dec. 7: The ore from the main pay chute of the St. Patrick pays from $40 to $50 per ton. The Co. have their main force at work on the Spanish mine. The main shaft sunk on this ledge is on the hill, about 300 yards from the St. Patrick mill, but the ledge is tapped by a tunnel which enters the hill-side about 80 or 100 yards from the mill. The tunnel cuts through the ledge as far ae it is run, which is about 330 foot. The Co. are taking at the rate of 25 tons of ore per day from the ledge, and driving the tunnel further in. The ore thus far, has yielded about $7 per ton, leaving a profit above all expenses of about $2 per ton. The rock is becoming richer as they get further into the hill. On the Cons. Miner the shaft is down 140ft. The ledge prospects encouragingly.

At the Eclipse they have completed excellent hoisting works, preparatory to working the mine on a more extensive scale. They have on dump perhaps 100 tons of milling ore.

Anthony Co.—Placer *Argus*, Dec. 6: The ledge of the Co. is 2,000ft. in length. They have commenced at the lower end of their claim and have run an adit level, along the ledge 300 ft. At that point they have started a tunnel which will run on the ledge, and enable them to drain their ground at a depth of 68 ft. from the surface at a point about midway of the ledge, where they are making preparations for sinking their main shaft and the erection of hoisting works. In running this drain 300ft. they have taken out over 300 tons of rock. It is estimated that the rock will yield a net profit of $12 per ton over all expenses. There has been 2 shafts sunk on the ledge, one of which is 4½ by 9ft. and 44ft. in depth. At the bottom the ledge is 3ft. in width; 70 tons of rock from this shaft has been worked which averaged 22 per ton. About 100ft. distant from the last mentioned shaft another 4 by 9 has been sunk 25ft. deep, at which point the ledge is 30 inches in width; rock taken from this shaft paid $16 per ton.

PLUMAS COUNTY.

Cement Discovery.—Quincy *National*, Nov. 30: The new claims at Onion Valley are paying well. Mr. Stewart, took out for a few hour's last week, $100 in dust and a nugget weighing five ounces.

Prospecting.—The ditch enterprise of Maxwell & Co. on Spanish Creek, is being pushed rapidly, Co. having about 30 hands at work.

Indian Valley.—The Creecent Co. is working a large force. The Green M. Ledge, never looked better than at present. Compton, at Cherekee, is sinking on his ledge, which promises to be better than ever before.

SAN DIEGO COUNTY.

Julian.—Cor. San Diego *World*, Nov. 3: The mines are turning out handsomely. Moore & DeFreea'e mill is running day and night on very fine ore from the Owens mine.

The Helvetia Co. have had 25 tone of ore worked at Moore & DeFreee's mill, and also the same amount at the Reynolds' mill. They have 50 tone more on dump.

The Van Wert contractors have a large lot of very fine ore on dump, and will have a crushing in a few days. The lode looks better than ever.

The Good Hope Co. are taking ont very fine ore, and will soon have a crushing.

The Bush Boye' mine is looking splendidly, and will soon have a big cruehing.

The Stonewall is looking better every day.

The Golden Chariot Co. have concluded a contract to build a wagon road from their mine to the Whitney & McMechan mill, a distance of 4 miles.

The mines in the Cañon are looking better every day. The Kentuck, Madden, Atlantic Cable, Antelope and Pacific are extracting very fine ore.

SIERRA COUNTY.

Wolf Creek Mine.—Downieville *Messenger*, Nov. 30: The Co. have gone to work in earnest to develop their claim.

Mt. Vernon.—Parties owning the Mt. Vernon claime are preparing to work them this winter.

Quit Work.—The China Co. quit work above Jersey bridge, a few days since.

Scales' Diggings.—E. Boyce is pushing to completion a flume across the Saddle betwsen Scales and Council Hill.

At Council Hill the boys are hard at work preparing for winter.

TUOLUMNE COUNTY.

A Success.—Sonora *Independent*, Dec. 7: The silver mine owned by Tulloek, Knowls & Co. is a success. The croppings are 30 ft. wide in the vein. A ton of cap rock sent to S. F. worked over $100 per ton.

Struck It.—They have struck rich rock in the Van Trump.

Goon Yield.—The gravel claim, owned by Per Johnson, has yielded well all Summer. The last wash up, from 20 days' run, was $1,000.

Spring Gulch Mine.—Sonora *Democrat*, Dec. 6: The result obtained from this ore during November was satisfactory. The mine is open to a depth of about 125 ft.; the full width of the vein at that depth has not been ascertained; it is 15 ft. wide and the hanging wall not reached. The ore worked during Nov. averaged $62 per ton; the month's profits over expenses was $4,678. The last 10 tons crushed yielded 173 ozs. worth $17 per oz.

Sommerset.—Is an extension of the Spring Gulch vein, upon which a shaft is being sunk which is down 75 ft. At this depth the vein is 3 ft. wide and shows well with free gold.

We saw at the office of W. F. & Co. this week 273 ozs. of clean, bright retorted gold, the proceeds of the Ferguson for Nov.

YUBA COUNTY.

Marble.—Grass Valley *Union*, Dec. 4: E. A. Harding, has struck a rich vein at Camptonville. The ledge is from 12 to 20 ft. in thickness and contains marble of a grain equal to the best Italian.

Nevada.

EUREKA DISTRICT.

Bullion.—Eureka *Sentinel*, Dec. 4: W. F. & Co. yesterday shipped for Paxton & Co 5 bars, weighing 460 pounds and valued at $2,400.14.

Home Ticket.—An incline is down on the Home Ticket proper about 300 ft. giving a perpendicular depth of 140 ft. Levele have been run in various directions, and in every instance fine deposits of ore have been developed. On the Walter, an incline has been sunk 180 ft. at the bottom of which an immense body of ore was struck connecting with that of the Home Ticket. The Tilton shaft is down 110 ft., disclosing a well-defined ledge from 18 to 20 inches in thickness. This ledge carries high grade ore. The Selby shaft is down 18 ft. in ore. The Ore Cashe shaft is down 58 ft. In the northeast drift the showing in good ore is most gratifying. The Home Ticket tunnel, being run at the base of the mountain, is in 183 ft.; a ledge of soft iron ore was struck, carrying in pockets large masses of excellent silver-bearing ore. One hundred feet further a large and well defined vein of high grade ore was cut. The tunnel has penetrated the ore 8 feet and the end is not yet. A substantial dump and ore chute are soon to be constructed.

ELY DISTRICT.

Bullion.—Ely *Record*, Dec. 1: The shipments last week was $77,573.28.

Washington and Creole.—The contract for sinking the shaft to the 540-ft. level will be completed on Monday. A new station will then be opened, from which point drifting on the ledge both east and west will be commenced. The new machinery, is working well. Blacksmith and carpenter shops are in course of erection. The various drifts and stopes are being vigorously worked and ore is taken ont rapidly. A large quantity is on dump.

Floral Mill.—This mill is rapidly reaching completion. The Sup., is confident he will have it running by the 5th of Jan.

Pioche Phœnix.—The new hoisting works are nearly completed. The main shaft is down 150 ft. In the old works the shaft and incline are down 400 ft. The ledge for some time past has been found in quartzite and has been improving in quality of ore all the while. The ore being taken ont assaye from $400 to $800 per ton. The ledge is 3 ft. wide.

American Flag.—Work is progressing finely. The main shaft is down 400 ft. and a contract will be let to-morrow for sinking 100 ft. further; also for drifting on the 400 ft. level both east and west. There is a fine lot of ore on dump.

Pacific Tunnel.—Supt. Nichols is driving work ahead. In the last week the turntable and blacksmith shop have been completed. The tunnel is in 1,100 ft. and is being pushed on. The winze on the first ledge is down 20 ft., with a fine slate foot wall and the ledge looking well. Stoping and drifting on second ledge, with fine ore in sight.

Chief of the Hill.—Is shipping the usual quantities of ore; the mill will commence running on this ore to-morrow. Winze No. 1 is down 70 ft.; at 100 ft. it will be connected with Nos. 2 and 3, on the 100-ft. level of winze No. 3 drifting west in about 24 ft., the entire length of the drift on ore. During the coming week a working shaft will be commenced from the Burke tunnel level. The stopes are looking well, and the prospects are splendid.

Peavine.—Is improving as developed. The stopes and breastings are looking well, and work is to be pushed ahead rapidly. The mill has been running on the ore since Thursday last, and the pulp assay is $116 per ton. There are about 20 tons on dump, and about 4 to 5 tons per day being taken out.

Marion.—Sinking the shaft. The ground being very hard but little progress is made. It is down 120 ft., and the ledge improves with depth.

Newark.—Work is rapidly progressing. Sinking on the main shaft and drifting from the 475-ft. station is being done under contract.

Bowery.—Prospects very encouraging in bottom of shaft, and Mr. Blair expects to strike the main ledge soon.

Pioche Champion.—The main shaft has attained 170 ft. Sinking by contract has been commenced in fair ground. Within the last week a car track has been added to the whim work.

Montana.—The shaft is down 60 ft. with a 2½ ft. ledge at the bottom. The Co. are working 3 shifts.

Chief of the Hill—East Ex.—The sinking of the shaft below the 90-ft. level has been stopped.

Silver Peak.—The ore in the bottom of the shaft is looking so well that Mr. Cline has concluded to put the full force on this work. There are about 250 tons on dump, and about 6 tons per day are being hoisted. The Condor mill is working this ore up to 78 per cent.

Jolly Traveler.—The last contract for sinking 100 ft. has been finished, and the ledge shows well. At the bottom a peculiar formation has been found, and gives evidence of rich mineral.

Caroline.—A contract has been let for sinking 100 ft. which has attained a depth of 85 ft. At the bottom of the shaft a fine stratum of ore is making its appearance.

Pioche.—Drifting will be commenced in a few days. There are at T. R. Butlers's assay office about 18,000 ozs. of bullion which will be shipped the coming week.

Meadow Valley.—Mr. Maynard has a full force at work in Nos. 3, 5, and 7, and is driving the work fast.

Arkansas.—In the bottom of the shaft the ore is looking well. Drifting and stoping will be commenced on the third level soon.

Amador Tunnel.—The shaft is down 120 ft. from the surface. In a few days drifting will be commenced on the ledge.

Chapman.—Good-milling ore is being hoisted daily, the ore on the dump is being prepared for milling. Work in the lower level continues.

REESE RIVER.

Bullion.—Reese River *Reveille* Nov. 31: W., F. & Co. shipped from this city during Nov., 57 bars, weighing 5,739 lbs. and valued at $76,432.40.

Belmont.—The Monitor Mill has been running a few days to get the machinery well fitted and in good running order. On the first proximo, it will start up for steady work.

The El Dorado Mill begine to loom up in grand proportions. The furnace building was covered this week, and other portions of the heavy frame were raised to their place.

El Dorado South.—On Saturday last the contractors, running the 400-ft. level, struck a spring of water at a point 70 ft. south of the main incline. About 2 inches of water is running steadily from this level.

A few days since a new steam pump was put down in the Belmont Co.'s Canfield mine. The pump works splendidly.

Montezuma.—Plunket & Co. are working the Savage and Monitor ledges. On the former, the tunnel has attained a depth of 300 ft., tapping the ledge first at a depth of 160 ft. The ledge will average 18 inches in thickness; there is a drift 150 ft. in length on the ledge showing ore the entire distance, of a value of from $150 to $300 per ton.

Monitor.—The incline is down 80 ft. showing a ledge varying from 8 to 18 inches in width, of high grade ore.

New Discoveries.—Fred Suhr has located a ledge which is 18 inches wide at a depth of 15 ft. from the surface, carrying ore which varies from $75 to $150.

McNees has located a claim called the "Alabama" which shows a ledge of ore of very high grade.

WASHOE.

Imperial-Empire.—Gold Hill *News*, Dec. 7: Prospecting the lower levels continues.

Cons. Virginia.—Sinking the shaft is making excellent progress, the ground working well. It is down 55 ft. below the 500-ft. level. The north drift on the 1,167-ft. level from the Gould & Curry shaft is driven ahead. Work on the new hoisting works building is being pressed with vigor.

Hale & Norcross.—Sinking the incline is making fine progress. Sinking the north winze from the tenth to eleventh station is making good progress. A blacksmith shop is being established on each level.

Savage.—Daily yield, 145 tons, worth $28 per ton. The incline is down 77 ft. below the 1,600-ft. level, in good working ground. The main drift south on the 1,600-ft. level is driven ahead.

Caledonia.—The south drift on the 400-ft. level of the new works, tapped a large body of water in the early part of the week completely flooding the mine and stopping all work on the lower levels. Prospecting south on the 300-ft. level of the old mine is pushed steadily.

Gould & Curry.—Sinking the main incline goes steadily ahead.

Insurance.—Average samples of ore taken from the underside of the incline assay as high as $40 per ton.

Sierra Nevada.—Daily yield 50 tons of good milling ore, keeping the mill running steadily. Prospecting on the 500-ft. level goes on as usual. The ore breasts in the upper and middle portion of the mine look and yield well.

Globe.—The indications of finding a body of pay ore in the raise from the tunnel level are very encouraging. The main west tunnel is driven steadily ahead.

McMeans.—The main west tunnel is being pushed vigorously ahead, the face in porphyry, with occasional streaks of quartz.

Senator.—All work is suspended for the present on account of difficulties in obtaining the necessary supply of wood. The shaft is 340 ft. in depth.

Union Con.—The north drift on the line of the ledge is in 30 ft., showing a steady improvement in the appearance of the quartz.

Julia.—Sinking the shaft is making good progress. The work of prospecting the 800-ft. level is pushed steadily on.

Belcher.—Daily yield 300 tons. The works shut down yesterday. The drift north from the incline, and south from the ore stopes at the 1000-ft. level, connected with each other on Tuesday. The main incline is down 150 ft. below the 1100-ft. level, and at 167 ft., on the slope, it will be deep enough for the 1200-ft. station. It will be carried 20 or 30 ft. deeper for a sump, before the station is opened. The north drift at the 850-ft. level is in 295 ft. The ore breasts of the 1000 and 1100-ft. levels are looking finely, and a winze is commenced 200-ft. south of the Crown Point line at the 1100-ft. level, to go down and connect with the south drift at the level below.

Chollar Potosi.—Daily yield 130 tons, the assay value of which is $32 per ton.

Crown Point.—The usual amount of ore is yielded from the 1100 and 1200-ft. levels, and the ore breasts and stopes are looking splendidly.

Yellow Jacket.—Yielding little or no ore at present. A heavy influx of water from the Crown Point during the last two days has caused total suspension of the drifting east at the 1500-ft. level from the incline.

Kentuck.—The only work being done is at the old workings about the 600 and 700-ft. levels, gleanings and leavings of richer times.

Buckeye.—Prospecting the different levels goes on with the most flattering results.

Overman.—The work on the new machinery and other surface improvements is fast approaching completion.

Baltimore Con.—Shaft down 349 ft. Drift at the 250-ft. level in 118 ft. toward the ledge.

Silver Hill.—The north and south drifts at the first level are making good progress, with the face of both drifts in low grade ore.

Daney.—All work suspended for the present.

Knickerbocker.—Main west drift in 384 ft. Face in hard porphyry. Indications good.

Occidental.—The main drift north is driven steadily ahead.

Crown Point Ravine.—The shaft is cleaned out and repaired, and all is in good working order to the depth of 64 ft.

Jacob Little.—Usual progress made in upper mine and lower tunnel. Yielding some very good ore.

Colorado.

Bullion. — Colorado *Miner*, Nov. 28: The Stewart S. P. Co. have shipped since the last report 6 silver bars valued at $5,650.25, and 2 lead bars valued at $1,269.45. Total, $6,919.70.

Boulder Co.—Colorado Springs *Out West*, Nov. 28; Arrangements are being perfected at Caribou, so that the mines in that dist. may be worked until very late this season.

Gilpin Co.—The new smelting works, recently started up by the U. S. General M. and S. Co., are considered a complete success.

Park Co.—Some very rich silver mines have been discovered during the past few months near the head waters of the north fork of the South Platte.

Idaho.

Mahogany.—Silver City *Avalanche*, Nov. 31: Supt. Coffin has struck exceedingly rich ore in the Mahogany, 157 ft. south of the shaft.

South Mt. cor. same: The South Smelting furnace started up last week, and are now turning out bullion. They have out about 3 tons, the average being $350 per ton. P. Donnelly has commenced a stope on the Golconda, south of the shaft 80ft. below the surface and taking out a good grade of ore.

The Gen. Grant is being worked. The shaft is some 90 ft. in depth and taking out good ore.

There has been several strikes made here recently. One of them the "Rhuba" is 3 ft. in width and assays from $427 to $750 per ton. Another the "Morgan" is but a small vein and assays some $60 per ton.

The owners of the Rose are erecting a shaft house and intend to continue sinking as soon as it is completed.

Utah.

American Fork.—S. L. *Journal*, Dec. 2: The Miller is running 30 to 40 men, they have recently struck another large deposit.

The Pittsburg is going ahead with a rush, as also the Wild Dutchman—both having made arrangements for pushing work during the winter. The Sierra will also be worked this winter. The Vermont and Bullion are developing good bodies of paying ore, and are shipping to the smelter; and will be worked this winter.

Star Dist.—cor. S. L. *Tribune*, Dec. 6: The Hickory Con. has an incline shaft sunk 70 ft. There is a large body of mineral near the mouth of the shaft 8 or 10 ft. in thickness. On the dump there appears to be about 300 tons of ore, of a high grade, the character of which is chloride and carbonate, carrying a small percentage of lead.

The St. Mary's has a incline shaft sunk 75 ft. This Co. are running a tunnel from the south side of the mountain, which will tap the ledge some 40 or 50 ft. below the surface. The ledge varies from 8 inches to 4 ft., and will average about 2 ft. in thickness. On dump there is, perhaps, 50 to 60 tons of ore, galena and carbonate, worth about $100 per ton in silver, and carries about 50 per cent. lead.

Establish Local Manufactures.

Their Importance to Agriculture.

In past deys the encestors of the present generation of farmers were content to seratch the earth, and to leave to the bounty of unessieted neture and to chence, the hope of an abnndant harvest. As time progressed, ae popnlation increased, wants multiplied, and the struggle for subsistence became more intensified in consequence of increesed numbers, men hed to set their brains to work, and call in the aid of science to help them in the conquest of the stnbborn earth, and snatch from its bosom hidden wealth long locked therein nnheeded—nay, undreamt of. Hence it is thet agriculture has developed in modern times into e science, and the farmer has learned how to increase, meny fold, the production of hie land. But he has yet in many instences to make a

Step in Advance.

In such a country, for instence, as Celifornia with a limited and scattered population, and where the aim of the majority of immigrants possessed of meane, hut devoid of any speciel culture are to enter upon the cultivetion of the soil, it is evident that at no distant period some emberrassmente to the agricultural community muet arise from over production—all are anxious to be farmers, all are anxious to develop the hidden riches of the soil—consequently there results a surplus of production; all are producers—there are few consumers. Foreign merkets have then to be sought, not always pecunierily profitable. Then indeed the cultivator, through excessive competitiou and excessive charges for treneporting to merket his produce, becomee reduced as far as the profits of his lahors are concerned to the state of his prototype of many centuriee ago. Now the fermers of Celifornie, although not bearing such a proportion numerically to the totel popnlation as they do in some other countries, are seemingly epproaching that goal, particularly in the production of wheat. We have

A Surplus of Eleven Million Centals

This year, and will have, probsbly, one of twenty millions next year. We are thus entirely dependent on the needs of foreign countries for the sale of our wheat crop. Supposing for instance that the crops of England heppened to give an extraordinarily good yield, and that there was an excessive influx of cheap wheat from the eouth and eest of Europe, what would become of our farmere? Thousands would be ruined. The

Necessity of a Home Market

Is thus at once apparent, and such a market can only he secured hy the encouragement of local manufactures. Instead of sending his farm produce, one or two hundred miles to port, and then from ten to seventeen thousand miles for a market, the farmer should have a market close to hia own doors. The question is, can he have snch a market, and how? To the first part of the query, we answer, that we think he can; to answer the second is the purport of thie article.

The only way in which a home market can be secured is to foster and encourage home

Local Manufaclures.

A very cursory examination of our lists of imports and exports will show what can thus be done. We import every year, for instance, about one million pairs of hoots and shoes, worth on an average four million dollars. Now it is a well established fact that the manufacture of boote and shoes hss proved to be one of those in which we in California are peculiarly successful, yet we throw away four million dollars yearly, or rather give it to huild up the induetriee of New England, New York and Penneylvania. Now this industry would give employment to not lese than three thousand workmen, who, including the families of the married, would repreeent a popnlation of not less than seven thousand; and including the tradesmen, etc., ministering to their wants, are of not less than twenty thousand. But this ie only a solitary instance; we export leather and hides annually to the valne, probably, of two million of dollars. The leather should here be converted into boots, shoes and saddlery, and the hidee having heen tauned would suhserve the same purposes.

We import annually eight hundred thousand gallons of spirits, which would consume one hundred and sixty thousand centals of wheat, and we import the equivalent of between thirty and forty thousand boxes of raisins every year, while at the same time we are raising the fineet raisin grapee in the world. We could go on edding article after article to the list, such as soap, candles etc., for all of which we have the

Raw Material in Abundance.

And in fect ship it away to receive it again in a manufactured state. We export nearly all our wool, when we possess weter power equel to that of New England, to whose factories it is taken to be eventually retnrned in the shape of clothing, etc., to the annual value of, at least, thirty millions of dollars. In this we annually lose at least, twenty million dollars, an immense wages fund, one thet would pay the wages of twenty-six thousand operatives, whose familiee with the femilies of the tradesmen supported by them would add one hundred and fifty thousand to our popnletion. Now reckoning only those articles, the manufacture of which could be really profitably nnderteken in country districts, we would, did we produce them ourselves, add at leaat two hundred and fifty thousend to our population, hut if we included all the articles of import for which we have facilitiee in San Frencisco, as well as in the interior, we would require

Our Population Doubled,

In order to be able to produce them. From the drift of this article it will plainly be seen thet we advise the erection of woolen mille, tanneries, soep end candle factories, and fruit drying houses, etc., in our towns in the interesta of our fermers, either by men of capital, who ere sufficiently intelligent to be able to recognize the chances lying open to them, or by a union amongst intelligent and enterprising agriculturists themselves. The farmer of to-day should take another step in advance of his oldtime predeceesor, and help in his own interest to manufacture the raw materiel that he himself produces. We think thst there is sufficient inducement for co-operation in this matter on the part of our farmers, and we know that unless they do this, or thet they encouroge some one else to do it for them, thet they may long mourn high freights and low pricee.

Wheat Ships.

Why not Build them on this Coast.

We shell doubtless pay this ycar for the carrying of our whest crop to Liverpool

Twelve Million Dollars.

And allowing one-third of the ships to make two trips a year, will employ at least 200 vessels. But according to higher estimates we will pay neerly *twenty million dollars*, and employ 300 vessels. Even the lowest of theee estimates is suggestive, and has set practical people to thinkiug whether with all our

Facilities lor Ship Building

On thie coast, we cannot in the future mnage to keep amongst oureelves much of this immenee sum, which will go on increasing every year. No part of the earth offers such facilities for ship building as the Statee and Territories of this coast. Immense forests of the finest timber which, even at our present rate of consumption, cannot be exhausted for thousands of years, we have an unlimited supply of material sufficient to build all the navies in the world, and to supply all maritime demands for twenty centuries to come. And there is no expense in transportation, there is sufficincy of material overhanging our northern sounds and hays to build ten thousand veseels close to the water's edge.

What Has Been Done.

We have, comparatively speaking, done very little in past years in availing oursclvee of these immense resources, though the fleet of small craft that does the coasting trade from Puget sound to the Colorado indicstes what can he done. Very little has heen done towards building vessels of a larger class. Messrs. Meiggs & Gawley, of this city, have built the hark "North West," of 600 tons, the hark "Tidal Wave," of 700 tons, and the ship "Wild Wave" of 1,200 tons. These have cost reepectively, "North West" $40,000, "Tidal Wave" $45,000, and "Wild Wave" $70,000. Besides these there has heen huilt the hark "Foreet Queen," about the eame size as the "North West." All these have heen built at Puget Sonnd, where wooden ehipe of any class can he built mnch cheaper than in San Francisco at present, for we have the additional cost of carrying the lumher hither, superadded. The Puget Sound pine is said by competent anthorities to he as good as the hest Eestern oek for the construction of ships, while it is infinitely cheaper. For the rndder and stem posts the California laurel ie the superior of oak while it is considerahly cheaper. And the Port Orford pine makee as durahle and as handsome a deck as can he found in the commercial woods of Europe or America. And maste straight ae an arrow and three or four hundred feet long can he obtained at the Sound about as cheap as saw logs.

The Cost.

Composite ship—one of pine, sheathed with iron, would he $110,000, and the cost of building and fitting out a wooden ship so ae to be ready to load wheat at the city front, is $60 per ton of measurement. For a thousand ton wooden ehip, the cost would therefore be $60,000. Such a ship would carry 28,000 centale of wheat at one trip, which would bring in a revenne of $38,000. So that, counting in the freight received on the return voyage, the ship would at present prices more than pay for her cost within one year. But even supposing freighta were only half what they now are, such a vessel would nearly or quite pay for herself in a few years. The reason

Why Ships are not Built

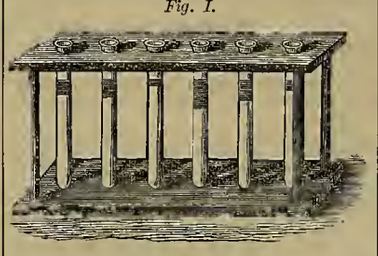
On this coast, when such a magnificent return can be obteined, is due solely to the went of enterprise and high prices of interest. Those who understend the business are afraid to borrow money when they have to pay from 1½ to 2 per cent. per month, and those who heve the money do not possess the enterprise.

The Lactometer.

The engravings here presented are gotten up by us for the purpose of illustrating an article which we copy from the *American Agriculturist*. The instrument described is known as the Lectometer, and is used for determining the quality and value of milk for the production of butter, and should be used by every farmer who owns more than one cow.

Where there are but two it becomes a metter of interest and curiosity to know which one is the better, and where there are a dozen, the

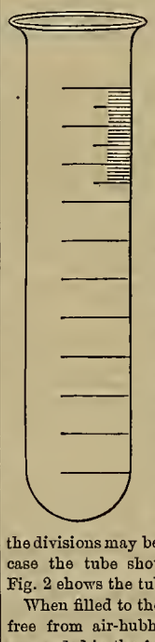
Fig. I.



probability is that there will be found one amonget the lot which is not worth keeping, and she can not easily be detected without experimenting on her milk with the lectometer.

We very rarely think of the fact that the average yield of butter in the United Statee is only a quarter of a pound per cow per day, or of milk only four quarts. The discovery of these poor cows, by which the average is so much reduced, and their separation from our herde, depend on the use of some such instrnment as is here proposed. It is simply and easily made. (Fig. 1.) A frame, consisting of an upper and a lower plstform, with supporting columns at the cornere is made; holes to receive the glass tubes are bored through the upper platform, and the tuhes are common glass test-tubes, which may be procured from or hy any druggist. The tnbee should be divided by marke made with a common file into ten spaces of equal size. The spaces or degrees may be one inch in length, in which case the tubee should be eleven inches long; or the divisions may be half an inch apart, in which case the tube should be six inches in length. Fig. 2 ehows the tube graduated into speces.

Fig. II.



When filled to the uttermost mark with milk, free from air-hubhles or foam, the tubes are suspended in the frame, and are to be kept undisturhed for a determined length of time, and the amonnt of cream which has risen ie then noted, when it may remain longer to note any further riee of cream, or the separation of the whey from the curd, if it is desired to teet the amount of whey or water or solid matter or curd in the milk. Those lactometers which test the quality of milk by its epecific gravity are often incorrect and fallacious, as the richest milk is the lightest specific gravity, and is not to be distinguished by such a test from watered milks.

The exact percentage of cream may be ascertained by dividing the upper epaces into tenths. Each tenth would represent one-hundredth part or one per cent. of the whole milk. Thus, if the cream occupies five of the small spaces, there is five per cent.; if one large space, there is ten per cent.; if one large space and two small ones, there would bo twelve per cent.; two large snaces would give twenty per cent. of cream.

As one quart of pure creem will make a pound of butter, the value of each cow ae a hutter-producer is resdily escertained, for if she should yield ten qnarte of milk, of which ten per cent. or one-tenth is creem, ehe may be expected to produce one pound of bntter per day, and so on.

The Mineralogical Museum.

Mr. Henry G. Henks, of the Pacific Coast Mineral Agency, the well known assayer and mineralogist, has recently returned from a trip of several months duration in Europe. During his sojourn on the Continent Mr. Hanks procured several valuable geological and mineral epecimene which he hes placed in his mnseum, No. 649 Clay Street. By the way, we do not believe it is nearly as generally known as it should be that there *is* a pnblic mineralogical museum in this city, most complete and cerefully selected and arranged, and which is absolutely free to all. Mr. Hanks is one of the most thorough mineralogiets on the Pecific coest. We are snre that there is no other who would more reedily devote his valusble time and attention in minutely deecribing the different specimens which fill his csses than this gentleman.

The museum consiets of twelve lerge and hendsomely finished glass ceses and eight elegant upright cases, containing a selection of specimens of minerals clessified ae follows: Silver group, Iron, Copper, Leed, Quartz, Sulphur, Mica, Amphihole. The quartz group of couree embraces the gold bearing ores.

Besides the ahove, this valuable collection contains epecimens recently obtained from the South Africen diamond fields. Topez from Brezil and from Durango, Wyoming, and N. S. Wales. Opale from Wyoming. Stones from Pacific Ruby and Diamond Co. Rubies from Brezil. Turqnoie from Pereia, and Sepphires from Idaho, etc., etc.

The pëtrifactions and fossile alone are well worth a visit, and in fact this museum is one of the few places on this coast where one can enjoy a few hours with the mineral producte of this and other countries, with ease and comfort aud without cost.

Composition of Precious Stones.

We condense from the "Explorers', Miners' and Metallurgiste' Companion," (J. S. Phillips M. E.,) as follows:

The Diamond.—Pure carbon, either transparent and colorless, or variously colored, yellow, blue, green, rose, or brown, but rerely black. It is known by its scratching all other gems.

Emerald (Beryl).—Two atoms tersilicate of elumina, 1 atom tersilicate of glucina — the former colored by oxide of chromium, the latter by oxide of iron. Crystallizes in hexagonal prisme; color green; *beryl* being sometimes from blue to yellow.

Opal (Precious or Noble.)—Compoeed of soluhle silica, with a varying quantity of water, sometimee 10 to 12 per cent.; milk colored; but exhibits in the light of day a changing interior play of pearl-like colors — green, hlue, yellow and red, which become yellow by transmitted light. Not as hard as quartz.

Sapphire (Corundum). — This gem, when perfectly white, seems to he pure alumina (aluminum 53.29, oxygen 46.71). It, however, consists of two precious varieties, the sapphire proper, and the oriental ruby. The former has a epecific gravity of from 3.9 to 3.97; the latter of somewhat lees. There is also a common corundum, and ordinary emery.

North Bloomfield Company.—This Compsny is doing a tremendous amount of work in their varioua claime, ditches, reservoirs, etc., on the ridge. Every character of mining is heing done hy them, and they give employment to every man that wants to work, regardlees of hie color, nationality and qualificationa. They have every kind of work to he done, and when men are incapable for one class of work they try them on another, and so on until they get them in the right place. They would give employment to a great many more men if they could get thcm. The company is paying out from $40,000 to $60,000 per month for labor, machinery and tools. Their operations are of the most stupendous character, and they have one of the best and most capahle Superintendents in the State to manege the works.—*Nevada Transcript.*

Silicates by Sublimation.—Recent examinations of a remarkahle hlock of lava ejected by Mount Veenvious during the eruption of April, 1872, made hy Prof. Rath, have proven, according to that scientiet, the formation of silicates by sublimation.

Useful Information.

Power of Comprehension.

It is said of Thoreau, that he could take up any given number of lead pencils without counting. A celebrated trapper once assured us that he could tell how many balls he had in his bullet pouch by placing his hand on it, and without stopping to count them, and added: "I can tell the number of bullets instantly, without stopping as you pronounce a word without spelling it." Southey was accustomed to take in the substance of a book in turning the leaves over continuously, glancing down the pages. Houdin, the magician, trained himself to quickness of perception, when a boy, by running past a show window at full speed, and then trying to tell what was in it. We once saw a man on a canal boat who was amusing himself by going from passenger to passenger and telling almost every one where he had seen him before, on such a train, in such a hotel, in such a street, giving date and place to people with whom he had never exchanged a word. This training of the faculties in particular directions is carried to a marvelous extreme by backwoodsmen, trappers, and men who guess the weight of animals. Perhaps the most remarkable instance are the markers who leap from log to log at the mouth of a boom, standing on a log and translating instantly an old mark into a new one, remembering what equivalent to give for each of a hundred marks, and chopping it upon the log in the time that it floats its length. It is said that Thoreau knew the relative order of flowering of all the plants in the Concord woods, and knew the note of every bird, and a thousand out-of-the-way things besides.—*Hearth and Home.*

The Useful and Beautiful.—There are really two ways to do a thing well. The one studies utility and economy without any regard to how it will look. The other includes both, and in addition, the door is often influenced by taste, giving the preference ever to that way of doing a thing which shall most directly promote the beautiful in union with the useful. Taste displays itself in the selection of the site for building, the plan and style of architecture, planting trees, making fences, laying out grounds, the color of buildings, etc. Some in these display taste; others seem to show an utter want of, or disregard of it, everything seeming to be done with reference only to the short-sighted utility. Attention to matters of the kind mentioned, would soon produce a favorable change in all our rural regions. Much has indeed been already done, toward the bringing about of this desirable change, but much more can be done. What we would say then is —let every owner study to make his home beautiful and attractive.

Curious and Useful Crow.—J. Snyder of Virginia, owns a crow which serves as a substitute for dogs, cats and all other domestic sentinels. He destroys every frog about the well; allows a mouse no chance for his life; drives away hawks from the poultry; and bids fair to act as the best squirrel dog in the country. He readily spies the squirrel, either upon the fence or on the trees, and with a natural antipathy to the squirrel tribe, his shrill, keen note is readily detected by his owner, accompanied by rapid darts up and down, and the owner is thus led to the game. The most remarkable feature about the crow is, that he invariably keeps five or six day's rations ahead of time, well concealed.

To Get Rid of Fleas.—Mr. Ely said at a late meeting of the New York Farmers' Club that there are two or three substances that are obnoxious to the flea—he does not like the smell of them, or they remind him of something he does not like to think about—these are carbolic acid and sulphur. If you want a barn thoroughly purged of weavil, or lice, or fless, the best way is to fumigate it with sulphur. But if you whitewash all around the stables and posts of the yard with a whitewash made by adding carbolic acid to the lime, it will drive most of these pests away. Washing an animal thus infested with carbolic soap-suds will give relief.

Charcoal as a Purifyer.—The *Country Gentleman* says: All kinds of utensils can be purified from disagreeable odors by rinsing them out with charcoal dust wet into a soft paste. Putrid water is immediately deprived of its bad smell by its use. When meat flesh, etc., are liable to become spoiled from long keeping, charcoal dust will keep them sweet; and if there is a single taint to meat, it can be taken out by putting three or four pieces of it as large as an egg into the water in which it is boiled. This will effectually purify what seems too far gone to use.

A Useful Hint.—A tin tube made like a syphon, driven into the vent of a barrel of wine or cider, and the other end inserted into a vial of water, will prevent the air from entering the barrel, while the gas escapes through the water. Make the barrel otherwise tight. When the cider or wine in the barrel is done working, the water in the bottle will cease bubbling. It requires no filling up, as there is no loss. The tube can be made by any tin-plate worker, and when once made can always be kept for future use.

What is "Black Heart" Redwood?

In the first place no such kind of wood exists. It is a difference based on the slightest of distinctions. Ordinary redwood and "black heart" will be found to come from the same tree. It is a small part of the lower extremity of the tree, which, on account of its near approach to the roots, is more than usually tough and compact, to which is given this name. In some trees it is not even to be found, owing to the local peculiar formation, and in those where it is the amount is very small. It is a task of great labor to get even enough to lay even a simple block, as was the case with that put down in front of the City Hall, and to speak of repairing the large amount of damage which now needs to be attended to in many streets of our city with this scarcely obtainable species of wood, is something of which it is ridiculous to consider. But even with "black heart" redwood, E. T. Crane, writing from San Lorenzo, has said that from his personal experience he had found planks of the best "black heart," after eighteen months, "were so decayed that you could stick a spade half way through them," and none were found but what had commenced to decay. As to the amount of water, which is a primary means of decay, that it will evaporate normally, and afterwards take up, twenty-nine and a half per cent. has been found to be an ordinary percentage.

From this it will be seen that every way, both on account of its non-usefulness, adaptability, and by reason of the impossibility of obtaining a quantity sufficient for the contemplated repairs, that the use of the so-called "black heart" redwood is out of the question.—*Alta.*

Best Time to Paint Houses.—The *Technologist*, a good authority, states that paint applied to the exterior of buildings in autumn or winter will endure twice as long as when applied in early summer or in hot weather. In the former it dries slowly and becomes hard, like a glazed surface, not easily affected afterward by the weather, or worn off by the beating of storms. But in very hot weather the oil in the paint soaks into the wood at once, as into a sponge, leaving the lead nearly dry and nearly ready to crumble off. This last difficulty, however, might in a measure be guarded against, though at an increased expense, by first going over the surface with raw oil. Furthermore, by painting in cold weather you escape the annoyance of small flies, which invariably collect during the warm season on fresh paint.

How to Oil a Harness.—A correspondent of the N. Y. *Tribune* says:—Linseed oil is sometimes applied, or sweet oil which is not made from olives, or other adulterated oils, which dry on the leather and cover it with gum. To properly oil a harness it should be taken apart and washed with a sponge and warm soapsuds; then wiped, and while damp greased with clean tallow mixed with lamphlack; this should be rubbed in while warm until the leather is filled; it should then be rubbed with cloths until it does not stain the hands. After one complete dressing an occasional application of the tallow and lampblack will keep the harness in good order, and there will be no gum for dirt to stick to.

Selling Stumps.—Walnut stumps are getting valuable as articles of merchandise at the East. Some one has discovered that the curly grains of the roots can be used for veneering purposes with great success, and the result is that they are in demand, and are worth one hundred and fifty dollars per stump. Some of the backwoodsmen of the forests of Iowa, Minnesota and Wisconsin are getting out the stumps rapidly, and are creating a new and valuable trade. The veneering made of these roots is said to be most beautiful, and can be used in the finest work, and is particularly adapted to use in the manufacture of musical instruments.

The Ohio *Farmer* says more injury is done to carriages by greasing too plentifully than the reverse. Tallow is recommended as a better lubricator than lard for wood axletrees, and caster-oil for iron; lard is apt to penetrate to the hub, and work its way around the tenons of the spokes and spoil the wheel. Just enough grease should be applied to the spindles of a wagon to give it a light coating. To oil an iron axle, first wipe clean with a cloth wet with spirits of turpentine, and then apply a few drops of caster-oil near the shoulder and end. One teaspoonful is enough for the four.

To Preserve Polished Metallic Articles from Tarnishing in the Air.—M. Pascher says: Melt in an open glass vessel heated in warm water 15 parts of paraffine to which has been added about 45 parts of petroleum; after becoming almost cool, it may be applied to the object to be protected.

Cotton and Asbestos Fibre.—A company has been organized in Philadelphia to operate a series of patents granted recently to Mr. Rosenthal, of England, for manufacturing textile fabrics upon his plan, of mixing with the wool or cotton fibre a variable quantity of asbestos.

A new preventive for boiler scale is announced in England, in the shape of the leaves of the barberry, a wild, trailing plant, common in this country, and also found in England and Scotland. The leaves are said to contain gallic and tannia acid.

Good Health.

Bee Sting—How to Treat It.

The sting of a bee is naturally more violent than that of a wasp, and with some persons is attended with fatal effects. Two deaths from such a cause have recently occurred. The sting of a bee is barbed at the end like a fish-hook, and consequently is always left in the wound; that of a wasp is pointed, so that it can sting more than once, but a bee cannot. When a person is stung by a bee let the sting be instantly pulled out, for the longer it remains in the flesh, the deeper it will pierce and the more poisonous it will become. The sting is hollow, and the poison flows through it, which is the cause of the pain and inflammation. The extracting of the sting requires a steady hand, for if it break in the wound the pain will continue for a long time. When the sting is extracted, suck the puncture, and thus prevent inflammation.

Spirits of hartshorn, if applied to the affected parts, will more fully complete the cure. The poison is acid, and the alkali will neutralize it. If the hartshorn is not at hand saleratus can be wet and laid upon the place; and soft soap will often ease the acute pain. On some people the sting of bees and wasps have little effect, but it greatly depends upon the state of the blood whether it will prove injurious, and these simple remedies if applied at once, will soon effect a cure.—*Ex.*

Caution to Athletes.—In a paper in the *Lancet*, Dr. Cornelius Black, of Harley street, Cavendish square, London, thus refers to the effect of violent exercises on the heart: They hurry the heart's action to an inordinate degree; they cause it to throw the blood with force into the extreme vessels, and as there is almost always one organ of the body weaker than the others, the vessels of this organ become distended, and remaining distended, the organ itself becomes diseased. Running, rowing, lifting, jumping, wrestling, severe horse-exercise, cricket, foot-ball, are fruitful causes of heart disease. Those which require the breath to be suspended during their accomplishment are more fruitful causes in this respect than those which require no such suspension of the breathing. Rowing, lifting heavy weights, wrestling, and jumping do this; and of these rowing is the most powerful for evil. At every effort made with the hands and feet, the muscles are strained to their utmost; the chest is violently fixed; no air is admitted into the lungs; blood is thrown by the goaded heart with great force into the pulmonary vessels; they become distended; they at length cannot find space for more blood; the onward current is now driven back upon the right heart; its cavities and the blood vessels of its walls become in like manner distended; the foundation of disease is laid. Hypertrophy, hæmoptysis, inflammatory affections of the heart and lungs, are the consequences in the young; vavular incompetency, rupture of the valves or of the muscular fibres of the heart, pulmonary apoplexy, and celebral hemorrahage, are too frequently the immediate consequence in those of more mature years.

Ague Spores.—In a communication to the French Academy, M. Bolestra, states that, in examining marsh water he always finds, in proportion to its degrees of putrefaction, a granular microphyte, somewhat resembling in form the Peruvian cactus. It is always accompanied by a considerable quantity of small spores, greenish-yellow, and transparent. This plant grows on the surface of the water; when young, it is rainbow-like in tints, and looks like spots of oil. At the low temperature of cellars containing no vegetation and in winter, it develops slowly, but in contact with air and exposed to solar rays, it grows fast, disengaging small air-bubbles. M. Bolestra thinks that those spores constitute ague poison, and that they can be found in marsh air. He himself caught ague twice during his researches—once after being exposed to air from water in fermentation covered with fresh algæ in full vegetation, mixed with an extraordinary quantity of spores.

Absorbing Power of the Human Skin.—Dr. Thomson of Edinburgh relates some experiments which he tried on his own person to ascertain the truth of the statements made as to the curative power of mineral water baths, depending on the absorption by the skin of certain salts and other substances which they hold in solution; and further, to ascertain whether certain substances applied in the form of ointments, etc., pass through the skin and reach the blood before they produce any beneficial effect. His conclusions are that not only has absorption by the skin been greatly exaggerated, but in the case of substances in aqueous solution it seems to be the exception, not the rule, for absorption to take place; and that, in the case of ointments, etc., some of the substances so applied seem to be absorbed and others not.

Death from a Piece of Needle in the Heart.—According to the Cincinnati *Lancet and Observer*, at the post-mortem examination of Miss Hoag, of Evanston, Ill., it was found that death was caused by the presence of a piece of needle in the heart. The needle was driven in by a sudden fall when she was about seven years old. The portion of needle extracted was about an inch and one-eighth long.

Under-Clothing for Cold Weather.—For children of three years and over there is nothing better, perhaps, than an under-garment clothing the body from the neck and wrists to the heels, much like the night-drawers children wear. They may be made with a plain, easy, high-necked waist, with long, straight sleeves, and with open drawers sewed to the waist. The drawers should be rather full at the top, but small enough at the lower part of the leg to go inside the stocking, reaching to the heel, or leaving no gap above the shoe. "Doctors disagree" about the material of this under-garment, some recommending woolen and some cotton. Taking into account the difficulty of washing woolen without shrinking it, and the disagreeable sensation many skins experience in wearing it, probably the best way in most cases is to have this under-garment made either of cotton flannel or of thin cotton-cloth, with a similar garment of warm woolen material over it. Buttons at the waist support the other under-clothing.

French Theory of Fatal Remedies.—According to M. Alphonse de Candolle, when a fatal malady has seriously affected the younger portion of a population, the succeeding generation, descended from persons who escaped the disease or were but little affected by it will be found less liable to attack, as an ordinary effect of the law of descent, this continuing to be the case from generation to generation. This, therefore, constitutes one cause of the weakening of epidemics, and may serve to explain the reason why a disease is most injurious when it first attacks any people, and why it subsequently becomes rarer and less dangerous, as has frequently been observed. After the lapse of several generations, however, a population moderately affected by disease approaches the condition of one which has never had it, and increased intensity may then ensue.

Relative Value of Disinfectants.—In the Central Chemical Department of Public Health at Dresden, numerous researches have lately been made with various disinfecting materials for the purpose of disinfecting liquid manures; the chief results are appended below. The value of chloride of lime and sulphuric acid, which form the most effectual disinfecting material, is here expressed by 100; while the remaining numbers show the value of the other materials as compared with this standard:

Chloride of lime with sulphuric acid	100.0
Chloride of lime with sulphate of iron	99.0
Luder and Liedloff's powder	92.0
Carbolic acid—disinfecting powder	85.6
Slaked lime	84.6
Alum	80.4
Sulphate of iron	76.7
Chloralum	74.0
Sulphate of magnesia	57.1
Permanganate of potash with sulphuric acid	51.3

The Medical Botany of California.—Dr. W. P. Gibbons, of Alameda, has been devoting considerable time and labor to the investigation of the medical properties of the plants peculiar to this Coast, and solicits the aid of his professional brethren in different quarters. In a paper, lately read before the State Medical Association, he describes a number of cases showing marked benefit from the *Grindelia* in Asthama, and thinks it will prove a valuable remedy, if employed with proper discrimination. There are two species which appear equally active, the *robusta*, growing in low places, and the *hirsutula* on dry fields and hills. The infusion he regards as the best preparation.

Poison Oak.—Experiments with animals go to prove that poison oak *(rhus toxicodendron)* may be eaten with impunity. Indeed we have frequently heard it asserted by persons in California that they have seen it eaten by men, with a view of its acting as an antitidote to its poison externally, or from mere braggadocio. All Californians are aware of the violence with which its juice acts when applied to the skin of most persons, many being severely poisoned by its slightest touch. It is also claimed that some people are so sensitive to its action as to be seriously poisoned by its exhalations, without any contact whatever with either its juice or foliage.

Hay Fever—so-called, has not yet generally been recognized by physicians as a separate disease, but a recent writer on the subject seems to have established its individual identity. "Autumnal catarrh" is the scientific term given to the disease. No cure has been found for it; but it has been observed that there are many places where the disease is not contracted, and where it disappears from those suffering with it in a few days. Most of the White Mountain and Adirondack regions are free from it, nor is it known in Germany or France.

The growth of the hair, the durability of its color, its flexibility, elasticity and gloss—depend solely upon its sanitary condition; and there is nothing under the sun that so effectually promotes the health of the fibres and of the integuments from which they spring, as correct hygienic habits.—*Science of Health.*

A man will die for the want of air in five minutes, for want of sleep in ten days, for want of water in a week, for want of food at varying intervals, depending on constitution, habits of life and the circumstances of the occasion.

Colic.—One or two heaped teaspoonfuls of common salt in cold water will sometimes relieve; repeat, if necessary. A teaspoonful of turpentine and twenty drops of peppermint is also good.

MINING AND SCIENTIFIC PRESS.

W. B. EWER.....SENIOR EDITOR.

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San Francisco:

Saturday Morning, Dec 14, 1872.

Legal Tender Rates.—S. F., Thurs., Dec. 12—Buying, 88⅞; Selling, 89¼.

Table of Contents.

GENERAL EDITORIALS.—Kill the New Industry; The Stanton Rnhy, 369. Establish Local Manufactures; Wheat Ships; Mineralogical Mnseum, 374. National Schools of Science; Notices of Recent Patents, 376. ILLUSTRATIONS—Corkscrew Growth; Grains of Science, 369. The Lactometer, 374. Quartz Mill Crushers, 376.

SCIENTIFIC PROGRESS.—A New Theory for Volcanoes and Earthquakes; Telegraphing hy Sound through Water; Density of the Supposed Resisting Medium in Space; Spontaneons Decomposition of an Alloy of Lead; Luminons Meteors; Underground Temperatures, 371.

MECHANICAL PROGRESS.—The Life and Wear of Rails; Monster Derrick; Patents in Japan; Iron Buildings; Wrought Iron Tubes; A New Kind of Flint Glass; Boiler Scale; Mechanical Invention; American Engineers, 371.

MINING SUMMARY from various counties in California, Nevada, Arizona, Colorsdo, Idaho, Montana, and Utah, 372. Market Reports, 33 0.

MINING STOCK MARKET.—Table of Daily Sales and Prices and Comparative Prices for the Week; Notices of Assessments; Meetings and Dividends; Revlew of Stock Market for the Week, 372.

USEFUL INFORMATION.—Power of Comprehension; The Useful and Beautiful; Curious and Useful Crow; To Get Rid of Fleas; Charcoal as a Prnifyer; A Useful Hint; What is "Black Heart" Redwood; Best Time to Paint Houses; How to Oil a Harness; Selling Stumps, 375.

GOOD HEALTH.—Bee Sting—How to Treat It: Cantion to Athletes; Ague Spores; Absorbing Power of the Human Skin; Death from a Piece of Needle in the Heart; Under-Clothing for Cold Weather; French Theory of Fatal Remedies; Relative Value of Disinfectants; The Medical Botany of California; Poison Oak, 375.

MISCELLANEOUS.—Coal Fields and Golden Sands of Oregon; The Mount Lincoln Silver Mines; Mining in British Columbia, 370. Composition of Precious Stones; North Bloomfield Company, 374. Camp Floyd District, Utah; Smelting Works in Utah; The Mining Interest of Calaveras; Resumption of Mining at Brown's Valley; The Oldest Steamer in the World, 378. The Diamond Swindle, 380.

STREET RAILROADS.—The exigencies of the horse diseaes in the Eastern States have turned the attention of the public to the necessity of some other motive power than horses on street railroads. In New York they are now experimenting with steam for that purpoee. Cars were reported to be running euccessfully in New Orleans some time since, which were propelled by steam. The engine in use there is the invention of Dr. Lamme, and no fire ie nsed in the locomotive, bnt hot water is placed in a peculiarly constructed boiler, at one end of the road, and the power thne etored suffices to run the car a distance of five miles, including necessary stoppages. If this fireless locomotive ie running as well as has been repreeented to us, we do not eee why it can not be nsed in other large cities aleo.

THE CALIFORNIA INVENTORS' AND MANUFACTURERS' ASSOCIATION, noticed in onr list of new incorporatione, announcee its object to be the assistance of inventore in bringing their inventions to enccess. If managed by competent men, in good faith, who will advance the necessary means, we wish it snccess. We expect to be ahle to post our readers more fully concerning the aesociation hereafter.

MICROSCOPICAL SOCIETY.—The San Francisco Microscopical Society is in a flourishing condition and likely to remain eo. They have jnet received a eplendid large microscope, mannfactnred hy R. & J. Beck, the famous London makers, which is eaid to he one of the finest on the Coast.

ANOTHER NARROW GAUGE ROAD.—Arrangements are being made to build a narrow gange railroad from Salt Lake City to Echo City, on the line of the Union Pacific, a distance of 45 miles. Utah ie doing much to develop her resonrces in building theee roads.

National Schools of Science.—The State University.

Humboldt never msde a truer or more important utterance than that in which he declared thst practical ecience formed the chief eource of a nation'e wealth, and that it often, indeed, stood ae a full eubstitnte for thoee natnral riches which nature, in many csees, has dietributed with so partisl a hsnd. This utterance is a truth which should be converted into a living fsith in the minds of all who have a heart interest in the material development of national prosperity. It is to he regretted thst practical science has not yet reached its just position in pnblic esteem, notwithstanding the rapid progress it ie making in many European conntries, and the increased appreciation in which it is being held by progreseive, thinking minds everywhere.

Time wss when s nation's prosperity was founded almoet exclusively upon local advantagee or an accidentsl combination of circnmstancee, and when the dead snd dying languages or the mere *theories* of science, were about all thst was thought necesaary to teach in our schools and higher seminaries of learniug. Governmente then busied themselvee about the affairs of State, never dreaming thst the parental relstione which they snstained towsrds the people shonld include any csre about the education of the young, with a view to a proper preperation of such for their own msintainance and the prosperity of the State, when they came to take upon themselves the csres snd responsibilities of manhood.

But science, in its progress and practical sdaption to industrisl pursnits, has of late produced a wonderful trsnsformation in human conceptions, and is now teaching the nstions the important leeeon that they must acquire snd maintsin their reepective levels by the force of their intellectual developments, instead of resting exclneively upon the nstural developments of eoil and climate, or on their more favorable geographical positon. It long since csme to the knowledge of the people, and more latterly has been impreesed upon the minds of rulers, that the nation which is most liberal and earnest in the intellectual improvement of ite working and producing classes—particularly its artisans and mechanice—is destined to override all local advantages, sud leave far in the rear, in material progress, all such people as attach less importance to the intellectual development of their populations. Even a enper-ahundance of capital, and the posseecion of snperior agricultural or commercial advantagee, combined with inexhaustible mines of precions metals, are nnable to compete in the modern march of national progress, with a people of intellectual training, though blessed hut eparsely with natural advantages.

There never was a period when a union of skill and science was so mnch needed by the nations of the earth as the present, and there never was a people which controlled eo many favorable conditione to be placed in combination with practical ecience as do the occupants of this central Pacific Slope. And it is one of the most encouraging evidencee of onr future progress that both rulere and people are wske ing up to the importance of these facte. As an evidence of this we find that both the State and General Government has been liberal in the endowment of onr State University, while ite managers are becoming more and more alive to the magnitude and importance of the trust committed to their charge.

The late instalment of Prof. Gilman as President—a man of progrees and and one thoronghly alive to the greater importance of practical education, as contrasted with the mere classical acquirements but lately considered as the chief end of education, is hopeful of the most beneficial results. The unanimous election of ex-Governor Haight, to fill the vacancy occasioned by the death of the lamented Edward Tompkins, is also a matter of congratulation Gov. Haight is well known as a progressive man, as is fully evinced by his admirable address at the Commencement two years ago, in which the breadth and soundnees of his views upon liberal education was fully illustrated.

A more perfect accord is also ohtaining between the educational head or Faculty of the Univereity, and its executive department—the Board of Regents. The latter have made a good move in inviting the President to sit with them and share in their deliherations, and we have no donbt that Prof. Gilman's experience will enable him from time to time to make and impress upon the attention of the Board many valnable snggestione, which otherwise might not he properly hrought to their attention. Such mntual deliheration can scacely fail of most happy results.

It ie aleo most gratifying to observe the improved interest which is being felt, throughout the Union generally, on behalf of National Schoole of Science. It appesre thst every individual State hss taken meaeuree to eecure the munificient lsnd grant offered by Congreee in 1862, and that thirty-four of the number have alresdy fully secured the ssme. In moet of the States, ss in California, large additione have also heen made to the grsnt by Stste or individusl liberality, or both.

The Agricultural Collegs Act, eo called, has thue hecome one of the moet pregnant and ueeful measuree ever initiated by Congreee for advancing the material intereste of the Nstion.

It should be borne in mind, that though the bill referred to is popularly and legally cslled an Agricultursl College Bill, it is in fsct a grant for the encouragement and eetablishment of Colleges for all brsnches of modern ecientific instruction, and has been eo construed in ite application to the University of California, and to Universities in several other States of the Union.

We thne have a syetem of National Schools of Science growing up in every Stste to which all men have accees—the poor as well as the rich—the yonng, middle aged and adults, and generslly without regard to sex—each one having reference to his or her cslling in life, whatever he or ehe may have chosen. In most of the States this "University" is also joined and grafted upon the common school system, and thus made the final snd crowning point of that great modern agent for elevating and improving the condition of the massee.

So popular have these schools hecome, snd eo wouderful hse slready been their effect in expanding, deepening and practicslizing onr syetem of educstion from the common echool up to the old-time "College-course," that another bill was introduced in the Senate at ite laet session, by Senator Morrill, of Vermont, for a still farther endowment to the Universities which have been called into existence by the "Agricultural College Bill," and within the past week the telegraph has informed ue that even during the preseure of business in the present ehort seesion, Mr. Morrill's bill hae been again called for immediate action thereupon.

There is every reason to helieve thet our people have finally entered upon a march of national progrees, wherein other natious have heen endeavoring to outstrip us, by offering to their masses euperior facilitiee for the acquisition of practical ecience. It was with such an end in view that the great philosopher, from whom we quoted et the commencement of this article, many yeare ago wrote for the encouragement of his countrymen in carrying out the enlightened plsns of education which they were then just setting on foot:—"An equal appreciation of all psrts of knowledge, is sn especisl requirement of the present epoch, in which the material wealth and incressing prosperity of nations, ie in a grest messure based on a more enlightened employment of nstnral products and forcee." Let us profit by the wisdom and experience of that people whose eminently practical education, alone, rendered the late terrihle events at Sedan and hefore Paris a possihility within the reach of human agenciee.

PATENTS & INVENTIONS.

Telegraphic List of U. S. Patents Issued to Pacific Coast Inventors.

[REPORTED OFFICIALLY FOR THE MINING AND SCIENTIFIC PRESS, DEWEY & CO., PUBLISHERS AND U. S. AND FOREIGN PATENT AGENTS.]

By Special Dispatch, Dated Washington, D. C., Dec. 10th, 1872.

FOR WEEK ENDING NOVEMBER 26TH, 1872.

MEDICAL COMPOUND.—Levi B. Millard, San José, Cal.

SKATE FASTENING.—John Hunter and Joel T. Chenoweth, Denver, Col. Territory.

EGG CARRIER.—George M. Hueton, S. F., Cal.

SHANK FOR TOOLS.—Albert H. Suplee, S. F., Cal.

SULKEY.—John A. Bilz, Pleasanton, Cal.

——The patents are not ready for delivery hy the Patent Office until some 14 days after the date of issue.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than hy any other agency.

Notices of Recent Patents.

Among tho patents recently obtained through Dewey & Co's. MINING AND SCIENTIFIC PRESS, American and Foreign Patent Agency, the following are worthy of mention.

DEVICE FOR CHARGING DRILL HOLES WITH POWDER.—Francie H. Lavalle, Auburn, Cal. This invention relates to a novel instrument for charging the holes which are made by a drill for blasting purposes, with Gisnt or other powder, for the purpose of compacting it, preparatory to exploding the blast. A metal tuhe, or charger is employed, which contains the required amount of powder to charge the hole. A piston movee in this cylinder, and has a rod extending through the upper end of the cylinder, and through a tube which is screwed upon its upper end so as to extend to the required distance from the charger to permit it to he inserted in the drill hole while the operator retains hie hold upon the tuhe. To uee this charger the desired amount of powder ie placed in the cylinder and pscked by compression if desired, the pieton being withdrawn by means of the handle ae far ae poesihle. The cylinder is then inserted in the drill hole and pnehed down to the bottom; the piston ie then forced down eo as to force the powder out of the cylinder. If desired, the powder can be compacted in the bottom of the hole hefore removing it from the cylinder. Thie greatly facilitstee the operation of hlaeting, ae the powder can he placed in the hole without trouhle, whereae, se st present used, it is often necessary to compact it in water, which fills the bottom of the hole, and the powder is conee-quently etirred into a psety maes eo that it will not do full execution.

IMPROVED SLIDE VALVE.—Henry Keseler, S. F., Cal. This is an improvement in that claes of elide valvee, which have a hesring ageinet the top of the steam chest, in order to prevent the eteam from getting above it, and thus permit the valve to move essily without a pressnre of steam upon it. The improvement consiete in employing two packing rings around the upper end of the valve, which are supported on epringe eo as to he held above the upper fsce of the valve. These rings bear sgainet the under side of the cover of the etesm chest, and make a tight joint, thns preventing the entrance of steam above the valve, which is therehy balanced, and the pressure on the seat materially redneed.

MILLING TOOL FOR TURNING LATHES.—Chsrlee Raheskopff, S. F., Csl. Thie ie a tool to he nsed in turning lathes, in place of the ueusl cntter or circular planer with a cutting face for milling down or cutting a stem or rod of any required dismeter from a piece of metel. The improvement consists of an arrsngement by which detachable planere or cnttere can be employed in place of the ordinary fixed or permanent ones. These cnttere are so arranged thst they can he adjustsd to or from the center ae desired, in order to cut or trim a wider or narrower shoulder, with a lsrger or smsller stem, ss required.

STRIPING IMPLEMENT FOR PAINTERS.—D. Lydon and C. Halsey, S. F., Cal. Freshly painted snrfaces may be striped by means of this tool, which consists principally of a emsll wheel or roller which hse a milled edge, and a emall box which is properly plsced to receive the psint which ie taken up by the wheel. A hollow metal hsndle ie employed, at one end of which a metal end piece is eecnred, eo constructed that a portion of it will stand at an sngle to the handle. The angular part is then divided into two parts, and a small wheel is placed hetween them so as to revolve upon a shaft bearing on the metal on each eide. The edge or face of thie wheel is milled. Directly above the wheel is a small metal hox or wiper, the under eide of which is slotted angularly, eo that the npper portion or rim of the wheel will paes ineide of the elot as it revolves. For striping, the tool ie taken in the hand after a fresh coat of paint has been pnt on and the wheel rolled over the painted surface. The milled rim of the wheel will take up the freeh paint and deposit it in the box se it passes through the slot.

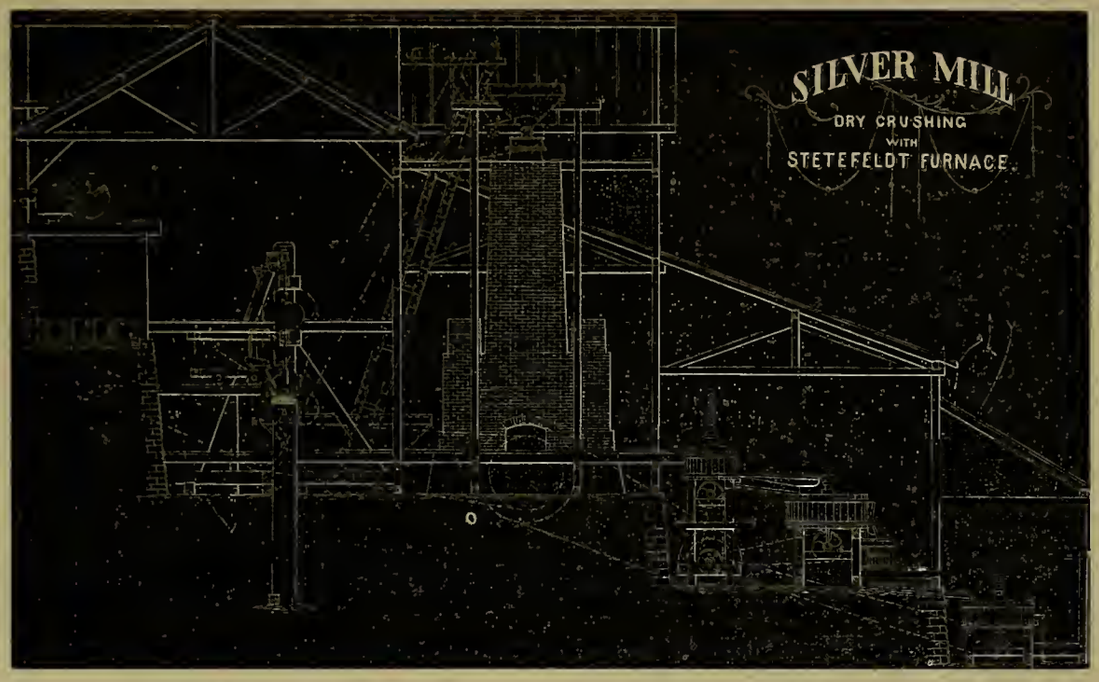
ROASTING FURNACE.—Martin P. Boes, Eureka, Nevada. The invention relates to a novel interior arrangement of that claes of roasting furnacee which are known as upright or stack furnacee, in which the pulverized ore is fed into the top of the stack so as to fsll to the bottom through the flame and products of combustion from the furnace. The improvement consiste of a narrow zig-zag flue in the lower half of the stack and a suspended frame in the npper half which fits inside of the stack. This frame ie also provided with a zig-zag opening or flue which passee down through it. The frame is suepended from a shaft which passes acroes above the stack and from which it receives a jarring or ehaking motion by which the ore is caueed to fall from one incline to the other.

IMPROVED CAR COUPLING.—Elisha T. Barlow, San Francisco. This is an improved eelf-acting car conpling by which two cars can be connected together without the presence of an attendant to enter the link, as the bumpers come together, thus preventing any chance of accidente. It consists of a simple attachment, which can be readily applied to the drawheade at present in use, by which the pin or holt which confines the ends of the liuk in the drawhead is held in the proper position to permit the entering link to antomatically release it and allow it to drop through the link to the holding position. The pin is secured in a frame called a pin holder, which passes down through an opeuing in the drawhead hack of the pin-hole. This pin holder can he raised bodily so as to lift the pin eufficiently to let the link pase beneath it, and a trip lever servee to support the pin holder in place. The entering link forcee the trip lever back until it allows the pin holder to drop and the pin passee through the link eo as to hold it in the usual manner of a link and pin.

Plans of Quartz Mills—Wet and Dry Crushing.

We present to our readers this week two illustrations of quartz mills, one of them arranged for wet crushing, and the other for dry. The cuts were made for the circulars of the Union Iron Works from which we take them.

The most common method of obtaining the silver from its ores is the Pan Amalgamation Process. As in the reduction of gold ores, there are some minor differences of arrangement and practice. The ore is first reduced to pulp by the Rock Breaker and the Stamp Battery, the degree of its fineness being regulated by the texture of the battery screen. When the pulp is to be roasted before amalgamation, the rock is crushed dry. In this case, a drying floor is built behind the battery, between it and the rock breaker. This floor is made of cast-iron plates about three feet by three and one-half feet square, flanged on two contiguous sides, so that all the plates may overlap one another, and yet have a flat surface for the rock on the top. A flue runs back and forth under the floor, the plates being laid on its walls. The hot gases from the roasting furnace serve for heating and drying the ore. From the drying floor the ore is either fed by hand to the batteries, or it is shoveled into the boxes of the self-feeders, which are filled from time to time by an attendant.



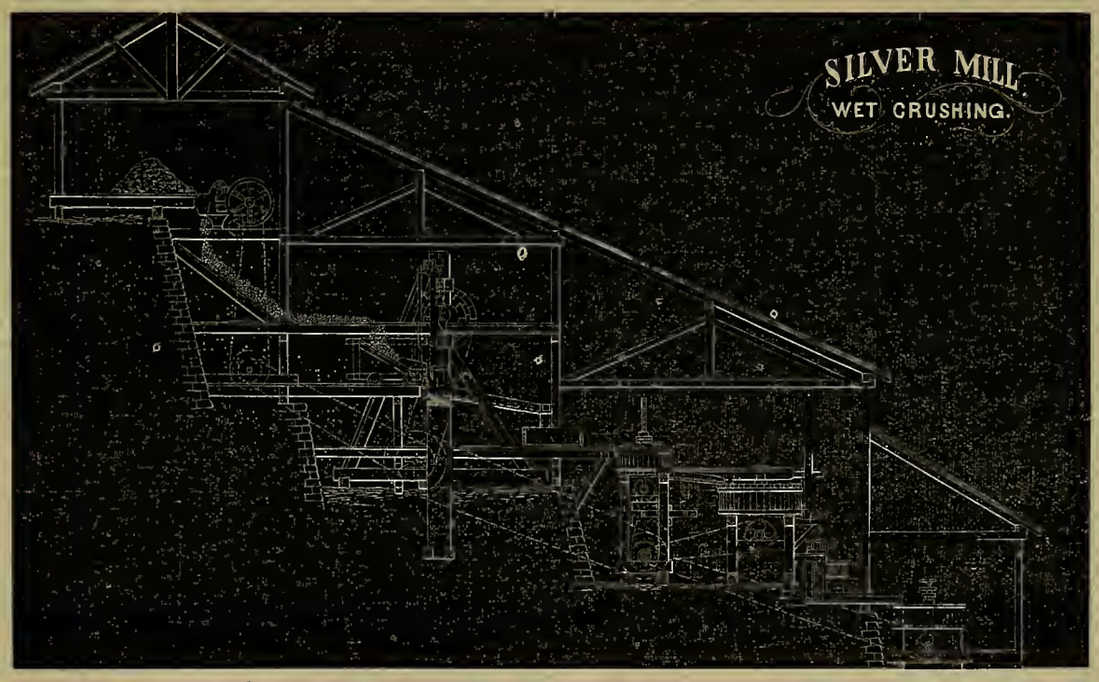
The mortar for dry crushing differs from the wet crushing gold mortar, in that the screens are generally set with more inclination from the perpendicular. The pulp is gathered from the mortars into a screw conveyor on each side of the battery, which transports it to the elevator. The elevator raises it to the pulp feeder of the furnace, into which it is fed, to be roasted and chloridized. From the roasting furnace the pulp is drawn out on the cooling floor, to become cool before being charged into the amalgamating pans. After having been amalgamated in the pan, the charge is run into the settler, where it is washed with water, all the fine stuff running off and leaving the amalgam to be gathered and strained, preparatory to being retorted. In some mills an agitator receives that which runs from the settler, and gathers whatever of quicksilver or amalgam may have passed out of the settler.

The general proportion of pans, settlers and agitators to one another is, two pans to each settler, and two settlers to each agitator, the size of all being dependent on the size of the pan.

In a dry crushing mill, without roasting, the whole arrangement is about the same, with the exception of the furnace and its dependencies. The pulp is received, as at the International mill, which was built in 1870, for the Eberhardt and Aurora Co., at White Pine, in cars, and carried directly to the pans, to pass through the same process as above.

In a mill, crushing wet, the mortar is adapted particularly to wet crushing, and water is fed continuously into the battery with the rock. The wet pulp is conducted into settling tanks, from which it is shoveled, to be charged into the pans and treated as before described.

A Dry Crushing Silver Mill with roasting furnace is shown in the accompanying illustration, which is a drawing of the "Taylor" Mill, of the Mineral Hill Silver Mines Co. (Limited), at Mineral Hill, Elko County, Nevada. This mill is a self-feeder, by Stanford's Patent, and has a Stetefeldt Furnace for roasting the pulp. The rock breaker, set at a point sufficiently high behind the battery, delivers the broken ore upon the drying floor, where it is thoroughly dried by the heat of the waste gases from the Stetefeldt Furnace. From the drying floor it is shoveled into the hopper car of the Stanford Self-Feeder, when all further handling of it ceases, until it is drawn from the base of the furnace shaft. The pulp is delivered from the battery into a conveyor on each side, which transports it to the elevator bin. The elevator is shown reaching from the bin to the pulp feeder on the top of the furnace shaft, which is kept continually supplied by the discharge of the elevator, and is operated by a belt from the counter-shaft. By means of two sets of cone pulleys, the speed of the pulp feeder shaft may be varied from forty revolutions per minute to three hundred. The roasted pulp is drawn from the furnace, by the door at the bottom of the shaft, on to the cooling floor, and is then charged into the amalgamating pans.



The Wet Crushing Silver Mill, is from the drawings of the International mill of the Eberhardt & Aurora Co., at White Pine, recently destroyed by fire. The illustration will be easily understood from the description of the dry crushing mill which has preceded. The International mill had sixty stamps, thirty of which were arranged for wet crushing, as illustrated, and the other thirty for dry crushing and amalgamation without roasting. It will be seen from the cut that the pulp runs from the battery into the settling tanks, and then is passed through the pans, settlers and agitators, as described before.

Utah mining prospects were never more promising, for notwithstanding the advent of winter, large quantities of ore are coming in to Salt Lake. The Cincinnati and Winnemuca mines, in Bingham Cañon, were sold on the 2d to an English company for $400,000. The Emma is shipping, on an average, 500 tons of ore per week from Salt Lake. There is extraordinary activity in working the mines at Snake Creek District, Utah, in which they are building a narrow-gauge railroad.

The Diamond Swindle.

The following condensed report of the statement of Wm. M. Lent, concerning the diamond swindle, will be interesting to our readers, as that gentleman is probably better informed of the history of the whole affair than any one else on the Coast. Mr. Lent first details the different conversations he had with Mr. Geo. D. Roberts, by which he was led to think the investment a good one. The three men whom Robert's party had sent down, had come back with about sixty pounds of diamonds, rubies, etc., of the value of $600,000. Mr. Roberts was very anxious for these men to return again, but Slack wanted $100,000 for his interest before he would leave. Mr. Lent advised Roberts to sell the bag of stones and pay him the cash, to which the latter objected, because the news of the discovery would no longer be a secret. They were afraid to send Arnold alone, on account of danger from Indians. On Mr. Robert's assuring Mr. Lent that the investment was a safe and sure one, he went to Mr. Harpending's and saw the stones, which were displayed on the billiard-table. The same day, or, may be, the next day, I saw Mr. Roberts, and told him that I would not go in, unless I could get some one to go in with me who knew more about the value of those things than I did. He then reassured me that he had taken all necessary precaution about the value by taking (at different times) samples of what was in the bag to noted jewelers of the town. I declined to go in unless General Dodge could also see the stones; so he was permitted to go too. The reason Harpending did not go to W. C. Ralston and get him to join, was that Arnold had objections to Wm. Ralston being interested. When we learned that Mr. Hayward thought well of it, General Dodge and myself determined to invest. We bought from Roberts and Harpending what was represented to be Slack's interest—or one eighth of the whole—for $50,000, with the privilege of taking another eighth, when Arnold and Slack came back from the diamond fields, where they were then going.

The Trip to London.

About the month of August, 1871, I went to Salt Lake, thence to New York and London. During my absence, Slack and Arnold returned with a lot of stones, upon which, at the request of Dodge, Willis paid to Dodge, $25,000, Mr. Dodge telling Willis that it was for the purpose of taking the balance of Slack's interest. I have been informed that Dodge paid this $25,000 to Roberts, and gave for his part his note for $25,000, which was paid through the London and San Francisco Bank. This made me an owner of one-eighth in the property, and cut $50,000. Upon my return to New York from London, in September or October, 1871, I received a telegram from Willis to await the arrival of Dodge and Harpending there, which I did. In a day or two Dodge arrived, and told me that Arnold and Slack had returned to San Francisco from the diamond fields, bringing a bag of stones, and that he had the bag with him. I asked him where was Harpending, when he replied that he parted with him at Omaha; he went by the way of St. Louis, and would be here in a few days.

In a day or two Mr. Harpending arrived; they informed me that before they left San Francisco, Arnold and Slack had returned, and that they had had bad luck; that to avoid suspicion they started in by a new route that in crossing a river the raft that they had built was wrecked, and when they did get to the fields, that they found themselves with only a few days' provisions and a shovel, and the stones they had brought up were the proceeds of 13 days' work with the shovel by two men; that A. and S. had gone back to the fields.

Forming the Company.

We then talked over the business, and they said they had come to New York to form a company on a basis of $10,000,000, and disposing of one quarter for $1,000,000; they had hard work to get Arnold to consent. We saw Mr. Barlow and told him we had a bag of stones worth $600,000 in the Bank of California, and a diamond of 103 carats, for which Shreve & Co. had offered $93,000, and showed him the bag which Slack and Arnold had brought up as the proceeds of 13 days work. We were then told that he could get others to go in, and we were introduced to Messrs. Tiffany, Belmont, Duncan and Seligman. The price of $150,000 was placed upon these stones then and there by Tiffany. About this time Arnold telegraphed that he was coming, and when I expressed a wish to see him personally, Harpending objected, saying as he did not want to sell his interest, he would have hard work to get him to do anything. Arnold came on because there was too much snow at the fields. When Barlow saw Arnold he was convinced of the truth of the whole matter, and appeared anxious to have the company formed in New York.

Changing the Law.

Mr. Barlow said that Tiffany, Belmont, Seligman, Duncan and himself would agree that in consideration of a company being formed, and the company appropriating 1,000 shares of the stock (upon the basis of 100,000 shares, and the privilege of these gentlemen taking one-quarter of the stock at $50 per share, they would agree to furnish the money up to ——, for the purpose of securing the necessary legislation, whereby we could procure a title, as it was decided that there was doubt whether we could hold this class of grounds under the existing mining laws, and if the property could be secured by

[Continued on page 380.]

Camp Floyd District, Utah.

We tranefer to our columns a letter from Csmp Floyd District, which appears in the Salt Lske *Herald*, snd which givee a good deecription of that locslity, ite mines, etc. "We are still as lively as ever in our buey little camp notwithstanding the stern fsct thst winter is fast approaching, or perhsps I might better say, that winter has arrived. The miners are hsrd st work developing their different clsime for the msrket next season, and they hope to continne work during the entire winter, with only an occssionsl interruption of a few days. Thie ie one very decided advantage which Csmp Floyd possesses over some other districts in being ahle to be worked during the entire year, an advantage whi:h cannot fail to he appreciated hy capitslists.

General Improvements.

Several companies which were incorporated this past season, iucluding the Camp Floyd Silver Mining Company, are husily engaged with large forces of men upon their respective properties, and the mines are developing with profitable results. The quartz mill is actively employed pounding away at the ores of the Sparrow Hawk, Marion and Last Chance mines, belonging to the English company, and the bullion constantly shipped to England speaks for itself of the success of the enterprise. The mill has heen running all the time with only two brief interruptions, one in consequence of hreaking a part of the machinery, and again for want of sufficient water to run the twenty etamps; thus compelling a temporary discontinuance of ten stamps. The company, however, is responeible for the deficiency in failing to provide for this emergency hy huilding the necessary reservoirs during the summer season, and I hope the Directors will eee the importance of appropriating the requisite means for this purpose at once. The cause of the deficiency was a sudden evaporation in the spring, owing to the dryness of the past season; hut it is now speedily being remedied hy the late fall of snow, aud the contiuued moist weather is increasing the supply so that the mill will shortly be enahled to resume its full capacity of twenty stamps again.

This occnrrence has prompted some parties to prospect for springs, and I underetand that General Connor contemplates making a water ditch to the camp from a large spring lying west of Cedar Fort eettlement, which, when complete, will supply sufficient water for two additional mills, and for general use of the miners. This enterprise will probably be commenced immediately, and is hound to be a success, like a similar undertaking completed by him at Pioche, where the water was conducted a distance of six miles. Machinery hae also heen ordered by General Connor for the purpose of horing a well near town, so next spring look out for lively times and abundance of water for all purposes.

The quartz mill in process of erection hy Messrs. Baxter & Hussey, at Fairfield, eight miles from thie camp, is nearly completed. It is intended to be a custom mill, and will afford the miners a ready cash market for all the ore they may have for sale.

The Mines.

In order to economize space I append a list of mining claims which have been more or less developed during the past summer with very good results. Western Segregation of the Mormon Chief,, General Morrow, America, Silver Star, Comstock, General Lowe, Michigan, True Delta, Southern Cross, Missouri, Peerless, Jenny Lind, Silver Park, Savage, Elkhorn, Antelope, Shcba, Gentile Belle, American Flag, Red Eagle and Consolidated Camp Douglas. The last named is considered good property, and has a shaft of fifty feet and two opeu cuts, showing a quantity of very good ore, but the company owning it have heen compelled to discontinue working owing to a waut of means; however, I am credibly iuformed that they intend incorporating a stock company, and will probahly arrange eo as to include the Antelope and Elkhorn claims which are considered first-class. By thie means enough stock will he placed on the market to fully develop all these claims into good mines which they are sure to make.

Mines Being Worked.

The minee which are heing worked at present are as follows, as near as I can learn: Silver Cloud with a shaft fifty-two feet deep, cutting a vein of ore at a depth of thirty-five feet. A level has heen run 180 feet on the couree of the vein from the bottom of the shaft, showing a vein of twelve feet of rich milling ore, aesaying from $50 to $2,000 per ton. A tunnel has aleo heen run 275 feet long to cut the vein 200 feet below the face of the shaft. There is also a large dwelling houee, out huildings, smith shop, etc., and a mill site has heen located adjoining the miue, upon which is a fine spring of water. This miue is really one of the best developed in camp, and the company were recently offered $120,000 cash for it, which they declined to accept.

Southwest from this mine comes the English Co's mines, Sparrow Hawk, Last Chance and Marion, on which are employed about fifty men, tunneling, drifting, einking shafts, inclines, etc. The Sparrow Hawk, has recently struck another body of very rich ore. Weet of the English property is the Carrie Steel, which is actively worked by running open cuts and sinking ehafts, and is yielding good qnality and quantity of ore. Next to this claim comes the Safford mine, which has a well defined vein of ore four feet thick, of which a recent assay givee the encouraging results of $40 for the lowest grade and $3,000 for the hest. A large force of miuers ie husily engaged sinking on the lode and selecting the ore. Tbe improvemente on this mine consiet of open cuts and a tunnel some sixty feet long, the veiu stripped for over fifty feet long, ehowing good milling quartz in them all. Adjoining the Safford on the west is the Loue Star, a very promising proepect, as yet hut partially developed, hut from present iudicstions must eventually hecome a good mine. Both these claims are owned hy our jovial friend, Maj. J. D. Woolley of Cheyenne, W. T., who has become lsrgely interested during his short connection with mining in Utah. We welcome and need sll such men of capitsl and energy to develop the mineral wealth of this Territory. North of these ie the Mormon Chief and its extension, Grecian Bend and Londou, which consists of 3,000 linear feet along the lode by 400 feet in width. The developments, in tuunels, cuts, ehafts, drifte aud inclines measure ahout 500 feet, showing a lsrge body of milling ore. This property has already obtained such wide reputation that it is needless to say anything further ahout it, except that it is eoon to be offered on a European market. It is owued hy W. W. Lowe, of Omaha, and others. Further up the hill we come to the Silver Circle aud Wandering Boy, now being extensively worked by S. N. Pike & Co., of N. Y. These two claims have gained quite an extensive reputation, owing to the native silver found in them, and the present workings consist of drifts and shafte done by coutract. Northwest of these claims is the famoue Star of the Weet, owned and worked by a New York compauy, of which Joseph Rau is president. The mine is at present working twelve men, who are taking out a large quantity of ore of very good quality. The vein or qnartz matter ie forty feet in width, aud the ore taken out thus far assays from $25 to $3,000 to the ton. Good houses for the accommodation of the miners and a hlacksmith shop are on the claim, consequently the company is well provided for a winter campaign. This mine is certainly very promising, and will eoon pay a good dividend to the shareholders. Looking over to the eouth side of the town we have the Bismark and Delaware cousolidation, bnsily engaged in sinking down upon their veiu by cuts, drifts and tunnels, and turning out large bodies of good ore. We next come to the Jenny Lind, celebrated as the only cinnabar mine in Utah. There are several tons of ore on the dump, but showing only a small per centage in metal. Work will he vigorously prosecuted until something definite is found, to prove whether it will pay to work it for cinnahar.

I must not omit to mention the Queen of the West, which is also one of our promising mines, and which, rumor saye, has heen sold to a Detroit party for a good sum.

I mnst now conclude my rather lengthy letter, as I fear it has already taken up too much of your valuahle space, by appending a list of mines, some of which have received and others applied for United States patents: Sparrow Hawk, Marion, Last Chance, Consolidated Camp Douglass, Silver Star, Silver Circle Consolidated, Wandering Boy, Star of the West, Silver Clond mine and Silver Cloud mill eite, Red Eagle, Geutile Belle and American Flag."

OSCEOLA.

Smelting Works in Utah.

We take the following from a letter to the Salt Lake *Herald*, dated Stockton, Utah, November 25th:

The smelting worke, owned hy H. S. Jacobs & Co., has three furnaces, a forty-horse-power engine, an extensive supply of fuel, and ahout 1,000 tons of ore on hand, and is receiving daily ahout twenty tons from the mines, the average assay value of which is about 35 per cent. lead, and $120 in silver. When running they use daily about twenty tons of ore, and produce ahout five tons of bullion, which assays on an average ahout 250 to 300 ounces silver and one and a half to two ounces gold per ton, which is shipped hy lake steamer to Corinne and sold to Eastern huyers. They now have 100,000 bushels of charcoal on hand, and an ahundance of iron ore aud lime for fluxes are close at hand. The company exercise great care in properly mixing the ores from various localities, and all the ores going into the furnace are weighed and the assay value known, the weight and value of hullion produced is also known, and weekly reports are made out showing the exact working results, coet, etc. No reduction works in the weet, either furuaces or mills, are workiug ores up to a higher per centage of the procious metals coutained iu them than these, and the actual cost of reduciug the oree as ehown hy careful inspection of the reports is astonishingly small. Ahout one hundred meu are now in the employ of this company in the Smelter and their minee in Dry cañou. Last Saturday, a week ago, the water leading from Soldier Cañon to the smelters failed, whereupon Mr. Jacohs placed ahout forty men to work constructing a ditch to the springs, a distance of a mile and a quarter, which has heen completed through frozen ground, the pipes laid, and water is already running into the furnace tank, thus enabling it to start up again on Weduesday with fair prospects of running all winter.

The Waterman Smelters, also located here on the banks of Stocktou Lake, have been lying idle for some time, hut will be etarted up in a ehort time; they have considershle ore on hand and are conetsntly receiving more. Henry Prosser, an experienced smeltist, will eupervise the manufacture of bullion. When again in motion hie enterprise will receive further notice from me.

The Mining Interest of Calaveras.

The condition and prospects of the mining iuterest of the county at present are, to eay the least, extremely encoursging. The progress of developmeut is not only rspid hut it is also in a direction and of a character that fully aseures stability and permsnency. That which augurs best for the rapid advaucement of the mineral interest of this country is the fsct that the "speculative" system of mining has been generally abandoned, and is succeeded by esrueet efforts towards practicsl development. Men hsve fiually given up the idea thst the eimple ownership of a qnartz ledge, however rich it may be, confers any material henefit unless its wealth be uncovered and utilized. In the past, ownership of a quartz lode iu this couuty has too often meant nothing further than the legal right to prevent its heing worked. In a majority of cases the owners were either unable to develop their possessions or satisfied with sitting idly down in anticipation of prospective wealth. They seemed to believe that the magic wand of capital would eventually turn the leads upside down and pour a golden stream into their laps, when they should have known that labor must first breach tbe walls before the assistance of its ally is required or can he obtained.

Another great drawback has been that what lahor has been performed was done more for the purpose of getting miues in shape for selling than for working. This "speculative" system has not heen euccessful, and the natural result was to retard mineral development and give the county an uufavorable reputation ahroad. More latterly, however, the whole method of conducting miniug operations has heen revolutionized. The great euccess achieved by indomitable energy and perseverance at the Gwin miue, and at one or two other points in the county, has stimulated effort, encouraged emulatiou and awakeued a spirit of enterprise. Men have thrown off their lethargy, ceased dreaming ot wealth and gone to work in good earnest to acquire it. The result is showu, not only iu a very rapid development of mining interests second to those of no county iu the State, but also by a marked improvemeut in business avocations of every character. It ie a gratifying fact that the quartz mining interest of Calaveras has been more materially advanced the past year than during the whole period previous to that time eiuce work was commenced. The numher of paying mines has been quadrupled, and the shipmeuts of bullion iucreased in a much greater proportion. The fact has been demonstrated that lahor, if backed by perseveriug euergy, is competent to make quartz mining profitahle, and the many practical evidences of this truth are the best possihle stimulants to increased effort.

The success that has attended the well directed endeavors of labor has also attracted capital, and there will he no difficulty in obtaining the assistance of tbat powerful auxiliary in the future. But beyond all thie, the progress made during the past year has completely changed the estimation in which Calaveras has heen held among monied men ae a field for profitahle, permaneut investment. With eome of the hest paying mines in the State within our hordere, and favorable development progressing upon every hand, we no longer have it flung in our teeth that "Calaveras ledges are barren." That doleful cry has been drowned in the clatter of a thoueaud stamps that echoes from one end of the couuty to the other, and the unhroken stream of golden ore that flows from them ie significant of what Calaveras ledges are made of. The work of prospecting ie also going rapidly forward. New shafts are heing sunk in all the districts, and it is a noticeahle fact tbat wherever a fair showing is made there is no trouble in getting capital to assist in the work. The unparalleled development of the great Gwin mine, together with the later discoveries at Railroad, and the continued success of operations at Angels and other points in the county, have combined to place Calaveras foremost in the ranks of the quartz mining districts of the State.

Gravel mining is also being much more extensively and vigorously proecuted than it has been for two or three years past. It has heen found that with the greatly reduced rates for water now prevalent that a large percentage of the ground abandoned years ago will pay for washing. At eeveral points in the county extensive hydraulics—similar to those in the northern counties—are being opened, and so soon as the rains set in operations will he commenced on a large scale. In the vicinity of Murphys we learn that a great hydraulic will shortly he started, while within a radius of a mile from Mokelumne Hill three new enterprises of a similar character have been instituted. The coming winter promises to be an unusually lively season, and upon the whole we may safely say that the mining interest of the county is more flourishing and promising than for several years past.—*Mokelumne Hill Chronicle.*

Resumption of Mining at Brown's Valley.

Some years since, says the Marysville *Appeal*, the quartz mines at Brown's Valley, Yuba county, ranked among the best in the State, and yielded largely, hnt for various reasons, principally the general demoralization in the mining share market a few years since, active operations were suspended, and these mines have for several years heen lying idle. Recently a new organization has heen formed under the name of the Brown's Valley Consolidated Mining Company, for the purpose of working those mines, and it has purchased the Jefferson, Pennsylvania and Danehroge mines. The Jefferson, previous to 1865, paid large dividends. The Pennsylvania and Danebroge, located contiguons to the Jefferson, have taken out large amounts of gold, hut we believe have not paid dividends. During the last month active operations have been resumed on these mines by the Brown's Valley Company, and we have good grounds for indulging in the hope that the results may amply reward the enterprise of the parties interested, and also restore the Brown's Valley mining interests to the relative position that they deserve. The new company is composed of San Francisco and Eastern capitalists, with George W. Bowie as President, and W. I. Kip, Jr., as Secretary. The geueral superintendency of the mines is vested in Baron Von Stech, an eminent mining engineer of great experience.

The principal point of present operations is at the incline No. 1 of the Pennsylvania mine, where new and stronger hoisting and pumping works are heing constructed. Knowles' Patent Self-Acting Pumps, capable of throwing 20,000 gallons per hour, are being introduced, and are supposed to be of sufficient capacity to free the mine from water during the time required to make repairs on the machinery. It is the intention of the Company to retimber the inclines, sink them deeper, and extract ore from the bottoms of the shafts and from the side drifts. It will probahly require some two months time and the expeuditure of some $25,000 to get these mines in working order, by which time the mill of sixteen stamps will be ready for work, and it is anticipated that a plentiful supply of ore, yielding $20 per ton, will be obtained to keep it constantly employed. Large quantities of ore are known to exist in these mines, and it is proposed to work them up to their full capacity. Should the yield of ore he in excess of the capacity of the mill for crushing it, the company will erect one of Whelpley & Storer's ore crushers and two pulverizers at hoisting works No. 2, where there is now an engine and other appurtenances, which with the proposed machinery, will give an additional crushing capacity of 50 tons per day.

The Danehroge will he reopened hy a perpendicular shaft 150 feet in depth which will strike the mine below the old works at a place where the vein of the Danehorge and Pennsylvania come together. From these works the drifts south into the Pennsylvania, will opeu this mine at the place where the Pennsylvania hoisting works No. 2 now stand, and where the mine was formerly opened hy an incline 300 feet in depth. The Company has engaged the services of Mr. Joseph Gundry, formerly underground foreman of the Jefferson, and afterwards, in the same capacity on the Pennsylvania, and recently foreman in the mines of W. Watt, Grass Valley. The reconstruction of the old, and ereotion of the new machinery is under the Superintendence of W. R. Eckart, of the Marysville Foundry, where the work is being done. The reopening of these valuable mines is a matter of great importance to Yuha county, and the Company has the hest wishes of the community in the success of an enterprise that will redound to the common benefit.

THE OLDEST STEAMER IN THE WORLD.—The oldest eteamer in the world has heen presented hy her owners, Meesrs. Steele & McCaskill, to the Glasgow Chamher of Commerce. The vessel is named the *Industry*, is 64 tons register, and was launched from the building yard of Messrs. John and Wm. Fyfe, of Fairlie, on the Clyde, in May, 1814. She was the seventh steamer huilt on that river. Latterly she has lain eunk in the East India Harhor at Greenock, but a couple of weeks ago she was floated and heached to he canlked, thereafter to proceed to Glasgow where ehe will be preserved as a memento of the early daye of steam navigation.

Business Cards.

H. C. BENNETT,
STATISTICIAN.
Reports and estimates made about all departments of Production, Commerce, and Manufacture, of the Pacific Coast. 3v24-tf

AMOS BOWMAN,
Mining and Topographical Engineer.
No. 637 Kearny Street, near Clay. Residence, 17 Rondel Place (Mission and 16th). sc19

RICHARD H. STRETCH, Civil Engineer,
City and County Surveyor.
Office—Room 16, City Hall. 11v24-3m

GILES H. GRAY. JAMES M. HAVEN.
GRAY & HAVEN,
ATTORNEYS AND COUNSELORS AT LAW,
In Building of Pacific Insurance Co., N. E. corner California and Leidesdorff streets,
SAN FRANCISCO.

JOHN ROACH, Optician,
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S. W. corner Sacramento.
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SCROLL SAWYER,
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And No. 9 Q St., bet. First and Second,
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Papsr Rulers and Blank Book Manufacturers.
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Brass and Steel Stamps and Dies, 608 Sacramento street, San Francisco. Orders by express promptly attended to.

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OF SAN FRANCISCO.
Capital, One Million Dollars.
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25v20-qy

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Patent Agraffe Pianos,
GRAND, SQUARE AND UPRIGHT.
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A. HEYMAN,
1 street, between Sixth and Seventh,
ma18-tf Opposite old Capitol, SACRAMENTO.

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TURNBULL & SMITH,
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WALTER TURNBULL, Member S. F. Stock & Ex. Board.

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They Have No Equal!
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MINING,
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POWDER,
Of SUPERIOR QUALITY, FRESH FROM THE MILLS. It being constantly received and transported into the interior, is delivered to the consumer within a few days of the time of its manufacture, and is in every way superior to any other Powder in Market.
We have been awarded successively
Three Gold Medals
By the MECHANICS' INSTITUTE and the STATE AGRICULTURAL SOCIETY for the superiority of our products over all others.
We also call attention to our
HERCULES POWDER.
Which combines all the force of other strong explosives now in use, and the lifting force of the NEST BLASTING POWDER, thus making it vastly superior to any other pompound now in use.
A circular containing a full description of this Powder can be obtained on application to our Office.
16v20-3m JOHN F. LOHSE, Secretary.

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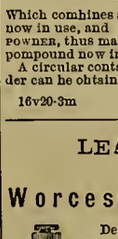
Worcestershire Sauce.



Declared by Connoisseurs to be the only good SAUCE.
Caution Against Fraud.
The success of this most delicious and unrivalled Condiment having caused certain dealers to apply the name of "Worcestershire Sauce" to their own inferior compounds, the public is hereby informed that the only way to secure the genuine is to ASK FOR LEA & PERRINS' SAUCE, and see that their names are upon the wrapper, labels, stopper and bottle.
Some of the foreign markets having been supplied with a spurious Worcestershire sauce, upon the wrapper and labels of which the names of Lea and Perrins have been forged, L. and P. give notice that they have furnished their correspondents with power of attorney to take instant proceedings against manufacturers and vendors of such, or any other imitations by which their right may be infringed.
Ask for LEA & PERRINS' Sauce, and see name on wrapper, label, bottle and stopper.
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Crushers and Samplers of Ores,
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S. W. HOWLAND, the Pioneer Crusher and SAMPLER of Ores and Pulverizer of Mineral and Chemical substances, has returned to San Francisco and resumed business at the above, his original stand. He wishes it to be DISTINCTLY UNDERSTOOD that having several months ago dissolved partnership with Mr. Thurman at the Mission Street Mill, he has now NO CONNECTION WITH THAT ESTABLISHMENT whatever.
The Same Faithful Sampling
Formerly performed by him may be relied on, and such is guaranteed. oc1915p3m

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General Agency, R. J. ROBERTSON, Hamburg, GERMANY.
Whose Representative for the United States,
H. ROBERTSON, 149 Broadway, Nsw York,
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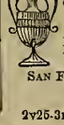

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Varney's Patent Amalgamator.

These Machines Stand Unrivaled.

For rapidity pulverizing and amalgamating ores, they have no equal. No effort has been, or will be spared to have them constructed in the most perfect manner and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.
They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.

This Amalgamator Opsratss as Follows;

The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the apperture and between the grinding surfaces.—Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as before. Thus it is constantly passing a regular flow between the grinding surfaces and into the quicksilver, until the ore is reduced to an impalpable powder, and the metal amalgamated.
Setters made on the same principle excel all others They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.
Mill-men are invited to examine these pans and setters for themselves, at the office, 229 Fremont Street,
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We would call the special attention of Assayers, Chemists, Mining Companies, Milling Companies, Prospectors, etc., to our large and well adapted stock of
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BARRELS,
For the reduction of ores, dry, to an impalpable powder or any given fineness, are made of any capacity—4, 6, 10, 20 or 50 tons per day. The reducing material is quartz from mine working upon coarsely-crushed ore from batteries or other machinery. No ore discharged for amalgamating that does not pass through wire cloth having eight thousand and one hundred holes to every square inch of surface.
The practicability of these barrels are established by the working of hundreds of tons or ore. Several are now building at the Miners' Foundry and can be seen by those interested. For particulars appy to
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These bags, by virtue of a patent lining, prevent ore siftings, and are the most durable bags used.
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Standard sizes of railroad Car Wheels, with special patterns for Mining Cars. These small wheels are made of the best Car Wheel Iron, properly chilled, and can be fitted up with the improved axle and box—introduced by this company, and guaranteed to outlast any other wheels made in this State.
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[Continued from page 377.]

Sioux scrip, that they would bny that, the property in the Spring to be examined hy an expert of their selecting, and if he approvod of the property, they to pay the $1,000,000.

Arnold Wants "Cash on Delivery."

This was agreed to, hut Harpending said that he would have to see Arnold. The next morning he said that Arnold objected unless he had something paid down, eaying, "Suppose I go in the spring, and the men they select say the gronnd is not what I have represented, my secret is known, although the property might he worth more, and he richer than I represented; he would not do it. He (Harpending) might trust these men if he wanted to, hut he (Arnold) would not, and he would not sign any paper unless he had a payment on his share of the interest he was interested in, which was one-sixteenth of the whole, and unless he was paid $100,000 down he wonld leave the city and take the hag of stones, valued at $150,000 with him." Here was a dilemma. At this time I helieved the amounts we had in hand were $650,000 or $750,000. I offered to advance $50,000 if I conld get the hag of stones for security. I telegraphed to Ralston that I was going in for $50,000 and he might join me and take a like amount himself. He telegraphed hack $100,000 saying, take $50,000 each. This was part payment to Arnold on 2,650 sharcs of his stock, leaving $150,000 to be paid on his return in the spring. I paid Arnold this money and deposited the stones with Dnncan, Sherman & Co.

Mr. Lent's Confidence.

At this time I was confident of the safety of my money, for, making allowance for one-half, there was value enough in the property. After this Mr. Harpending went to Europe, Mr. Dodge returned to New York and I retiurued to San Francisco. I was ehortly afterward recalled to New York on private bnsiness, and after etaying there two weeke, eailed for Europe and arrived in London about the 24th of January, 1872. I saw Mr. Harpending a few days after and he told me that Willis and Boyd had eent a man to Arizona to find our property. Mr. Harpending had received a letter from Mr. Roberts saying that he had no doubt hut that I was in the Willis and Boyd operation, and urging Mr. Harpending's return. Knowing my innocence in the matter, I came to the conclueion that Roberts had coined this etory for the purpose of having him come on. Even after these letters, the indifference with which Harpending acted in this business made me feel gloomy, and I wrote to Dodge and Willis that if it were not for the stones I had eeen, and Roberts' lettere to Harpending, I would make up my mind that we had heen eold. I then left England and arrived in New York on the 29th of April.

Selecting the Expert.

The party first tried to get Mr. Benjamin but he was away and conld not he procured; in consequence of this Mr. Seligman would not go in. Mr. Jauin was then selected, who would make a report for a cash fee and a privilege. I offered him, I think, $1,000 and a privilege in 1,000 shares of stock at $40,000. Before I eaw him again Dodge and Harpending offered him $2,500 and the privilege of 1,000 shares at $10, at which I was very much put out. About this time, we learued hy telegraph that Mr. Boyd for myeelf and Dodge, E. M. Fry for Ralston, and Jos. Roberts for his brother, would, by prior arrangements with Arnold, meet at Denver, where they expected to join the party.

Mr. Harpending objected to go into the field with a California party, viz: Boyd, Fry and Roberts. I eaw Arnold and Slack for the firet time at Denver. I also met at Deuver, Fry, Boyd and Roberts.

Glowing Accounts of the Diamond Fields.

I left San Francisco for New York on the 12th of June, 1872, about June 20th, there was a telegram in cypher received hy Mr. Barlow, in New York, signed by Janin, Dodge and Harpeuding, giving a glowing account of what they saw. This dispatch was dated Cheyenne, and said, "they had just struck the road." He told me how Janin had behaved so well, and wanted to telegraph to hie friends to buy etock, etc. He also told me that all that had been told by Harpending about Arnold was false; that

Arnold was a Good Man,

And he did not helieve that he wonld deceive any one. On the 24th of June, 1872, I met Harpending near the office of Lees & Waller. He took me to see Janin who assured me that we had a hrilliant property. We went out and met Dodge, and proceeded to Barlow's office, where Harpending produced the hag of etones. Janin gave a description of the country and his trip, and said it wae necesseary for him to know the value of the stones he had brought to enable him to make his report. We weighed the stones and (not counting the ruhies anything) the result was, at $35 per carat—about $30,000.

Why the Parties Returned so Soon.

Duncan eaye: "Why did you come back so eoon? It appears to me that you were more in a hnrry to get back than to remain and pick np diamonds." Janin said that he had finished his work, which was to prospect the ground, and that General Dodge was taken ill, and tbat Mr. Harpending was anxious to return on account of the expected illness of his wife. Harpending, at thie time, was with us. I had hut little to say to him on acconut of his not taking in the Denver party. I was told that Ruhery and Slack would remain on the ground until our party could get in. After my return to San Francisco and after the formation of the company. I learned for the first time that this was not so intended, and that Dodge and myself, for some purpose nnkuown to us, were deceived.

One Million per Month.

About this time, June 1872, Mr. Lent appears to have snspected a "hear" movement from certain circumstances which he details, Heid, Tiffany's man, valued the stones at $8,000. Janin said that, give him twenty men, and he would produce a million per month. Mr. Janin now suggests that I am mistaken, and that he said, "Give him twenty men, and he will send up the first thirty days after he gets to work one million." I may have been mistaken, and therefore give Mr. Janin's correction. At this meeting Mr. Tiffany reasserted to Mr. Janin the value of the stones at Duncan's was $150,000.

Mr. Harpending's Desire for Control.

On the 26th of June I learned that Mr. Dnncan refused to take the interest agreed upon; that we must have $150,000 to meet our obligations to Arnold and $30,000 more for a working capital. I urged the propriety of hringing the whole thing to San Francisco; that this property we had known of for nearly eighteen months, and Mr. Janin had examined and reported on it; upon that report and their own statements I was convinced that San Francisco was the place for it. I also, in proposing that the business go to San Francisco, made remarks about what I thought of the moneyed men of New York, which are useless for me to state, as they had no effect at the time. Mr. Harpending said he had three-fourths of the property and wonld control it. I was disgusted and bonght my ticket for San Francisco, only waiting for an answer to a telegram from Ralston. That same day Janin agreed to go to the field with Arnold. I told them there was no douht of the valne of the property. Harpending would not listen to me but hoasted of his representing the greater iuterest. Arnold had ue in his power at that time as the discovery claim was in his name and he would give no deed unless he got $150,000.

Mr. Lent's Opinion of the Property.

I will give you an extract from my letter to Mr Willis to show you my opinion of the property:

"To sum up this hnsiness—Arnold and Slack are all right and have been true in every particular. Dodge and Janin hoth hear the strongest testimony of the valne of this discovery. 'There is not the least doubt,' Janin says, 'that $4,000,000 is no price for the property,' and I never knew Janin to take so much interest in anything as in this. He ie anxious to have it floated here, while I am not; his reasons are, that if it wae made known there in San Francisco, every one wonld go. I told him the same results would follow if it was floated here, as eoon as it was known. Janin thinks it worth Crown Point and Belcher combined. Now, Arnold is at Louisville and wants his money, and told Harpending, as soon as yon are ready send for me. I have $25,000 here, and in case of need will draw upon you for $110,000 in gold and take the business into my own hands. Ralston can join me in this last or not, as he pleasee. I told Barlow that if his clients were afraid, if they would put up $750,000 I would put up $250,000, and my $50,000 should lay as security to cover the lose, if they would divide the profits."

Mr. Harpending met us at Lees and Waller's and offered to take $250,000 worth of the stock, if we would give them the privilege of 25,000 shares in ninety days at $50. At the time he made the offer, he, as a friend, advised us not to accept it. I thanked him, and told him "No." Butterworth thought well of the property. I asked him why he did not go in. He replied that he had just received a letter from Charles Brenbam that he had loaned all his spare money for a time at one per cent. When I told him that I would like to take the loans up to $100,000, he made no reply. At this time I thought that the parties we were treating with were trying to get our property in their own hands.

The Scheme to be Taken to San Francisco.

Thie day all were working harmoniously. On this day or the next I received a dispatch saying, "Close all negotiations with New Yorkers and come out." Ahout this time a copy of Janin's report was received in San Francisco. I telegraphed to Willis and Boyd for their private opinion as to taking the property to San Francisco. My telegram was in the following language: "Taking Janin's report as your basis, what is your private opinion about taking the hnsinese to San Francisco?" My reply was favorahle to doing so. The report of Mr. Janin was my basie of action from that time out. About this time I received dispatchee saying that the propety could be placed in San Francisco, and telling us to come right out with it.

Retrospective.

I will retrospect a little. Accompanying Janin's report which I sent to Mr. Willis, I wrote him a letter, dated June 28, 1872. which I told him to show Ralston. Upon the receipt of this letter, Willis or Ralston telegraphed me that Ralston would take the property on the terms of my letter, which were as follows: For Willis, Boyd and myeelf to take the $1,000,000 of stock ourselves in greenbacks; and if we could put it on the market at the same price in gold, we would make money ont of it.

After the receipt of Janin's report, Ralston, Willis and all were interested very mnch to have the property bronght on to San Francisco; and to aid me in bringing it here, Mr. Ralston, in a telegram to ns all (Dodge, Harpending, Roberts and myself) gave a guarantee that he would take the property and pay for it iu five days after our arrival. His assertion was hased on Janin's report.

The Expert's Share.

In July Mr. Janin bad the privilege on 1,000 shares at $47 and 1,000 at $40, and the 1,000 shares on which he paid ten dollars. He remarked to me, 'I did think I would sell 1,000 shares at $40, bnt I will not do it. I will hold for an advance, as I am satisfied that my first six weeks' work will astonish them all; and when you go out, I want you to go after any one who croaks at my report, and I will give them a chance to bet ou my proposition." At this time he offered to het me that in six weeks after he arrived on the gronnd he would bring with him one million of dollars in diamonds.

Mr. Lent then details the manner in which the stock was withdrawn from New York and put upon the San Francisco market.

Arnold's Benevolence.

Arnold lived with Harpending at this time, and appeared to have a strong friendly feeling for his family. I was anxious to have him leave. Mr. Harpending came and told me that in consideration of what Arnold had made out of the business, he (Arnold) wonld give Mr. Harpending 15,000 shares for $300,000 if he could get some money, and Mr. Harpending wanted Mr. Ralston to have an interest, and this was accomplished hy my giving him a check for $75,000 (39,000 of which Harpending horrowed for me from his father) and a draft for $75,000 on Mr. Ralston with a letter advising him what I had done.

Before I left I drew on Mr. Ralston for the expenses of outfitting Janin and Arnold; and on Thursday Harpending, Ruhery and myself left for San Francisco, leaving Dodge with Janin, in New York, aud Arnold goiug to Kentucky to hire twenty negroes. With this force he was to joiu Janin at some point on the road, where they would go on together.

Janin Clings to the Belief that the Property is Valuable.

Before I left New York I had frequent conversations with Janin, and he never faltered for a moment in his estimate of the property. He obtained a promise from me that I would secure to Gashwiler 1,000 shares at $40, saying: "I will write him not to fail to take the stock." This letter was sent by me. He said, "I would telegraph him, but he would go and buy at any price, and I am anxious to secnre 1,000 shares for him at $40." The day before I left, Mr. Barlow informed me that he had $100,000 euhscribed I told him to remit it to Mr. Ralston, which I understand he did the day after my arrival. We left then for San Fraucisco, where we arrived the latter part of July. Upon my arrival I saw Ralston and informed him what I had doue, and of the purchase made hy Mr. Harpending. Mr. Ralston told me that all who had read Janin's report were satisfied and would take their stock. I called upon my friends and nrged them to take the etock, hecause I was fully impressed with the value of the property. In a few hours the 15,000 shares were taken, and Mr. Ralston called Dore, Harpending, Roberts and myself together. He asked us what price we wanted to fix 6,250 shares. Mr. Harpending did not want any of his sold less than $100 per share. The next morning the newepapers came with the expose, and the sale of stock was stopped. We then agreed that we would not sell at any price until we had heard from Janin.

A California Company Formed.

A company was formed, and I was elected its President. Ahout thie time, we heard tbat Janin was on the road bnt being watched, was afraid to go to the field. Mr. Ralston sent for me, and said something must be done. He asked me to give him authority to organize a party to visit the grounds; I consented. After the Roberts party left, there came cahle news saying that our stones had been bought in London. This news I thought was a trick of the trade. Ahont this time I learned that Mr. Harpending held a power of attorney, and had eome $200,000 of Arnolds money to invest. A few days after we had received the news from London, Mr. Harpending informed me that he had placed Arnold's $200,000, in the Bank of California in such a way that he could not get it, if the diamond fields should not turn out as represented. It reassured me that all was right.

Another Party Sent to the Field.

On the——day of——, 1872 letters were received that convinced us that the Roberts party, was lost and and another party, to be headed hy General Colton, assisted hy Janin and General Dodge (who consented to pilot the party in, if Arnold could not be found), was formed. Telegrams were sent to where Arnold might be fonnd. On the next day an answer wae received from Arnold asking, "What do you want?" This wae replied to hy the request that he wonld meet General Dodge at Laramie: and answer promptly came, "I leave to-morrow" The promptness of Arnold to respond removed all doubt, if any then remaiued. General Colton and party passed the Roberts party on their way down.

The Party Recalled.

The Board met and received reports from Roberts who urged ue not make a move until Spring; and contrary to the judgment expressed by the whole Board, the party was recalled. At this time Dodge and Arnold had joined the the Colton party on tbe road.

Arnold Gets his Coin and Leaves.

Arnold came to the city, and demanded from Harpending the return of his money. Harpending informed him that he had invested it, and where he had placed it. Arnold then demanded his power of attorney, and imformed him that General Dodge would hereafter act as his agent. Harpending was doing his best to keep the money. In the end Arnold obtained his money and left for the East. Now we have the Roberts party in town, and the Colton party also returned. On the 10th of November it appears that Clarence King called on Janin, and informed him of the result of his visit to the fields. Mr. Janin introduced Mr. King to members of the Company. Janin aud Colton, accompanied by King, returned to the fields. The first intimation I had of King having been in the field was on Friday, the 22d November; the Company met, and the reports of King, Colton and Janin were received, and referred to a special committee. The result of Mr. King's report is well known.

MARIPOSA MINES.—The entire Mariposa estate is now lying idle with the exception that a dozen men are running a drift in the Josephine or Pine Tree mine.

BORAX.—Heavy machinery is shortly expected from the East for the Saxon American Borax Company, of Hot Springs, Napa county, Cal.

BELTING.—The New York leather belting manufacturers have resolved to raise the price of belting two per cent,

Meetings and Elections.

GOLDEN SUN G. M. Co.—Dec. 8th. Trustees—Thomas Nelson, (Treasurer); Ferdinand Cyprit, (President); Geo. H. Baker, C. J. Holmes, Col. Harry Linden and E. P. Hutchins; Secretary, C. P. Robinson.

The Napa and Solano Agricultural and Mechanical Art Association have elected the following officers: Directors—John B. Frisbie, Edward McGettigan, A. Powell, John E. Williston, Thomas L. Thompson, Henry Connolly, James M. Thompson, John Callendar, William Gouverneur Morris, John B. Carrington, Joseph Jacobs. W. G. Norris was elected President; J. M. Gregory, Secretary, and John B. Frisbie, Treasurer of the Board.

RAYMOND & ELY M. Co.—Mr. Holland H. Day has been appointed Superintendent of the Raymond & Ely mine, in place of Mr. Lightner, who has taken charge of the Hermes. Mr. Day was formerly Superintendent of the Meadow Valley mine.

THE EAGLE M. Co.—Dec. 10. Trustees—A. G Hawes, J. P. Couch, O. W. Fox, G. S. Kennedy and C. W. Rumrill.

KENTUCKY M. Co.—Trustees—D. H. McDonald, J. A. Pritchard, Frank Swift, H. S. Brown and T. J. Shacklo-ford. Frank Swift, Secretary.

THE INDUS G. AND S. M. Co — will hold a meeting on the 6th of January, to take into consideration the propriety of increasing the Capital Stock, from $475,000 in 950 shares of $500 each, to $3,000,000 in 30,000 shares of $100 each.

Leather Market Report.

[Reported for the Press by Dolliver & Co.]

SAN FRANCISCO, Thursday, Dec. 12, 1872.

French skins continue firm. The fire in Boston has given the market an upward tendency, and dealers are holding both Foreign and Domestic skins at full prices.

Oak Leather, ₱ lb	26@29
Santa Cruz Leather, ₱ lb	26@29
Country Leather, ₱ lb	25@28
Stockton Leather, ₱ lb	26@29
Jodot, 8 Kil., per doz	80 00@
Jodot, 11 to 13 Kil., per doz	66 00@ 85 00
Jodot, second choice, 11 to 15 Kil. ₱ doz	56 00@ 70 00
Lemoine, 16 to 18 Kil., ₱ doz	75 00@ 77 50
Levin, 12 and 13 Kil., per doz	68 00@ 70 00
Cornellian, 16 to 19 Kil., per doz	63 00@ 65 00
Cornellian, 12 to 14 Kil., per doz	56 00@ 60 00
Ogerau Calf, ₱ doz	54 00@
Simon, 18 Kil., ₱ doz	60 00
Simon, 20 Kil. ₱ doz	65 00
Simon, 24 Kil. ₱ doz	72 00
Robert Calf, 7 and 8 Kil	35 00@ 40 00
French Kips, ₱ lb	1 00@ 1 30
California Kip, ₱ doz	55 00 to 70 00
French Sheep, all colors, ₱ doz	8 00@ 15 00
Eastern Calf for Backs, ₱ lb	1 15@ 1 25
Sheep Roans for Topping, all colors, ₱ doz	9 00@ 13 00
Sheep Roans for Linings, ₱ doz	5 50@ 10 50
California Russett Sheep Linings	1 75@ 5 50
Kip Jodot Calf Boot Legs, ₱ pair	5 25
Good French Calf Boot Legs, ₱ pair	4 50@ 5 00
French Calf Boot Legs, ₱ pair	4 00
Harness Leather, ₱ lb	30@ 37½
Fair Bridle Leather, ₱ doz	48 00@ 72 00
Skirting Leather, ₱ lb	34@ 37½
Welt Leather, ₱ doz	30 00@ 50 00
Buff Leather, ₱ foot	18@ 21
Wax Side Leather, ₱ foot	20@ 22
Eastern Wax Leather	26

San Francisco Metal Market.

PRICES FOR INVOICE.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, Dec. 12, 1872.

IRON.—			
Scotch Pig Iron, ₱ ton	$50 00	@	55 00
White Pig, ₱ ton	50 00	@	55 00
Refined Bar, bad assortment, ₱ lb	— 04½	@	— 5
Refined Bar, good assortment, ₱ lb	— 05	@	5½
Boiler, No. 1 to 4	— 05¾	@	— 06
Plate, No. 5 to 9	— 06½	@	— 07
Sheet, No. 10 to 13	— 07½	@	— —
Sheet, No. 14 to 29	— 07½	@	— —
Sheet, No. 24 to 27	— 08	@	— —
Horse Shoes	8 00	@	
Nail Rod	10		
Norway Iron	8		
Rolled Iron	5		
Other Irons for Blacksmiths, Miners, etc.	5½	@	6½
COPPER.—			
Sheathing, ₱ lb	— —	@	— 45
Sheathing, Yellow	— 38	@	— 40
Sheathing, Old Yellow	— —	@	— 13
Composition Nails	— 28		— 30
Composition Bolts	— 28		— 30
TIN PLATES.—			
Plates, Charcoal, IX ₱ box	18 00	@	— —
Plates, I C Charcoal	14 00		— —
Roofing Plates	18 50		— —
Banca Tin, Slabs, ₱ lb	— 50		— —
STEEL.—English Cast, ₱ lb	— 16		— 17
Drill	— 16		— 17
Flat Bar	19		— —
Plough Points	16		—17
Russia (for mould boards)	12½		15
QUICKSILVER.—₱ lb	— 85		— 87½
LEAD.—Pig, ₱ lb	— 5¾		— 6
Sheet	— 9		— —
Pipe	— 8¾		— 10
Bar	— 6½		— 7
ZINC.—Sheets, ₱ lb	— 9½		— 10
BORAX.—Refined	— 28		— 30
Borax, crude	— 5		— —

Mining and Other Companies.

Owing to the time necessary to mail the present large edition of the M. & S. Press we are obliged to go to press on Thursday evening—which is the very latest hour we can receive advertisements.

Amazon Silver Mining Company—Location of works, Ely District, Lincoln County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the Twenty-second day of October, 1872, an assessment of Ten Cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary pro tem., at his office No. 409 Sacramento street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the sixth day of January, 1873, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the 22d day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

M. J. McMANUS, Secretary pro tem.

Office, 609 Sacramento street, San Francisco, Cal.

de7-4t

Bunker Hill Quartz Mining Company—

Location of works, Amador, Amador County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 3d day of December, 1872, an assessment of Ten Dollars per share was levied upon the capital stock of said Company, payable immediately to the Secretary, in United States gold coin, at his office, No. 19 First street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Monday, the 6th day of January, 1873, shall be deemed delinquent, and will be duly advertised for sale at public auction and unless payment shall be made before, will be sold on Monday, the 27th day of January, 1873, to pay the delinquent assessment, together with the costs of advertising and expenses of sale.

CHARLES H. KNOX, Secretary pro tem.

Office, 19 First street, San Francisco, California.

Shareholders' Meeting. --- Office of the Eagle Quicksilver Mining Company.

In accordance with a resolution adopted by the Board of Trustees of the Company, at a meeting held on the 7th day of December, 1872, a special meeting of the stockholders of said Company is hereby called, to be held at the office of the Company, rooms 5 and 6, No. 302 Montgomery street, San Francisco, Cal., on Saturday, the 21st day of December, 1872, at the hour of 3 o'clock P. M., to elect a Trustee to fill a vacancy in the Board, and for the transaction of such other business as may lawfully come before the meeting.

WM. H. WATSON, Secretary.

San Francisco, December 13th, 1872.

Golden Rule Mining Company---Location: Poverty or Chili Hill, Tuolumne County, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment (No. 5,) levied on the 2d day of November, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
J H Webster	71	50	$25 00
J H Webster	72	50	25 00
J H Webster	73	50	25 00
F E Webster	37	25	12 50
Mrs M Morse	463	6	3 00
W R Crenna	329	5	2 50
A S Evans	381	1	60
L P Davis	436	6	3 00
H C Walker	466	60	25 00
H C Walker	468	20	10 00
W F King, Trustee	493	10	5 00
J B Russell	479	10	6 00
Mrs A J Eaton	492	10	5 00

And in accordance with law, and an order of the Board of Trustees, made on the 2d day of November, A. D., 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the auction house of Maurice Dore & Co., No. 327 Montgomery St., on Saturday, the fourth day of January, 1873, at the hour of one o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. B. RUSSELL, Secretary.

Office—Room 6, over Donahue & Kelly's Bank, 432 Montgomery street, San Francisco, de14-3t

Great Blue Gravel Range Company—Location of works, Blue Gravel Range, Placer County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 16th day of November, 1872, an assessment of Ten Cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, Room 6 and 6, No. 302 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Wednesday, the 18th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the 7th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale.

By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room 5 and 5, No. 302 Montgomery street, San Francisco, California. no23

Hudson Gold Mining Company—Location of works, Cherokee Mining District, Plumas County, State of California.

Notice is hereby given that at a meeting of the Trustees of said Company, held on the 11th day of November, 1872, an assessment of 7½ cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, No. 411 California street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Monday, the 16th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 6th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of the sale.

JOS. L. KING, Secretary.

Office, 411 California street, San Francisco, California. no16-4t

Indus Gold and Silver Mining Company—Location of works, Virginia City, Storey County Nevada.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the nineteenth day of October, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Barnard, R	79	10	$5 00
Everson, Wallace	89	5	2 50
Everson, Wallace	90	5	2 50
Everson, Wallace	91	6	2 50
Everson, Wallace	92	5	2 50
Everson, Wallace	93	5	2 50
Everson, Wallace	94	5	2 50
Everson, Wallace	95	5	2 50
Everson, Wallace	96	5	2 50
Everson, Wallace	97	10	6 00
Fowler, John	5	5	2 50
Knapp, J B	76	5	2 50
Summers, H	36	5	2 50
Summers, H	38	5	2 50
[In dispute—not issued]		25	12 50

And in accordance with law, and an order of the Board of Trustees, made on the 19th day of October, 1872, so many shares of each parcel of said stock as may be necessary will be sold at public auction, at No. 327 Montgomery street, San Francisco, Cal., on the sixteenth day of December, 1872, at the hour of 10 o'clock A. M., of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

DAVID WILDER, Secretary.

Office, 24 Merchants' Exchange, California street, San Francisco, Cal. no30-3t

Ivanhoe Silver Mining Company.---Location of works: Ely District, Lincoln County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 12th day of December, 1872, an assessment of one dollar per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the company, Room 5 and 6, No. 302 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Thursday, the 19th day of January, 1873, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Thursday, the 9th day of February, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

DANIEL BUCK, Secretary.

Office, 14 Stevenson Building, No. 331 Montgomery street, San Francisco. di4 1m

Kincaid Flat Mining Company.---Location of works: Tuolumne County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 9th day of December, 1872, an assessment of three dollars per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office, 220 Clay street, San Francisco. Any stock upon which said assessment shall remain unpaid on the 15th day of January, 1873, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the 5th day of February, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. H. CORNELL, Secretary.

Office, 220 Clay street, San Francisco. de14-1m

Lemon Mill and Mining Company---Notice to Stockholders.

Notice is hereby given, that a meetiag of the Stockholders of the Lemon Mill and Mining Company will be held at the office of the Secretary, No. 608 Merchant street, San Francisco, Cal., on Monday, the 6th day of January, 1873, at 12 o'clock M. of said day, for the purpose of voting upon a proposition to increase the capital stock of the Company from two million (2,000,000) dollars, divided into twenty thousand (20,000) shares, of the par value of one hundred (100) dollars each (the present stock of the Company), to Three Million (3,000,000) Dollars, divided into thirty thousand (30,000) shares, of the par value of one hundred (100) dollars each.

G. W. CLARK, Trustee,
H. H. SCHAFER, Trustee,
JOHN FAY, Trustee,
H. BARROILHET, Trustee,
CAMILO MARTIN, Trustee,
} Lemon Mill and Mining Co.

San Francisco, Dec. 3d, 1872. de7-4t

Mammoth Blue Gravel Company—Location: Chalk Bluff District, Nevada County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 18th day of November, 1872, an assessment of eight cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the secretary.

Any stock upon which said assessment shall remain unpaid on the 23d day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Monday, the 13th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. W. CLARK, Secretary.

Office, room 37, New Merchants' Exchange, (third floor), California street, San Francisco, Cal. no23

Mina Rica Mining Company---Location of works, Auburn Mining District, Placer County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 19th day of November, 1872, an assessment of Ten cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, No. 320 California street, room No. 5, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the 23d day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Monday, the 13th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

GEO. R. SPINNEY, Secretary.

Office—No. 320 California street, room No. 5, San Francisco, Cal no23

Mocking Bird Mining Company, Location of works, Ely Mining District, Lincoln County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifth day of December 1872, an assessment of ten cents a share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the secretary at the office of the Company Room 21, Hayward's Building, 419 California street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 10th of January 1873, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, January, 31st, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale.

H. C. KIBBE, Secretary.

Office, Room No. 21, Hayward's Building, 419 California street, San Francisco, Cal.

North San Francisco Homestead and Railroad Association—Location of property, City and County of San Francisco, State of California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the Fifth day of November, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount
Bidleman, E G	338	2	$ 6 00
Hagermann, F	358	196	685 00
Hagermann, F	385	6	16 00
Hagermann, F	388	8⅔	26 00
Hart, George	389	394	1182 00
Hendrie, J W	394	547	1641 00
Hendrie, J W	407	350	1050 00
Huerne, Prosper	98	2	5 00
Huerne, Prosper	369	1½	4 00
Hutchinson, H L	380	2	6 00
Klumpke, John G	143	30	90 00
Klumpke, John G	145	20	60 00
Klumpke, John G	286	2	6 00
McDonald, D L	386	5	15 00
McDonald, D L	387	5	15 00
Nelson & Dohle	86	⅓	75
Nelson & Dohle	212	3 5-6	11 60
Nelson & Dohle	222	1	3 00
Oppenheim, F	379	24	72 00
Payne, Warren R	381	2	6 00
Pioche, F L A	365	30	00 00
Pioche, F L A	367	2	6 00
Pioche, F L A	308	1⅓	00
Reed, M G	110	1⅔	4 50
Sharp, Geo. F	400	¾	2 25
Sharp, Geo. F	408	367	1071 00
Smith, James	382	2	5 00
Stone, N B	355	52	156 00
Stone, N B	355	8	24 00
Whittell, Hugh	364	540	1620 00
Whittell, Hugh	405	250	750 00
Whittell, Hugh	406	98	294 00
Whittell, A P	390½	3	9 00

And in accordance with law, and an order of the Board of Trustees, made on the 5th day of November, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Association, No. 314 California street, San Francisco, Cal., on the 23d day of December, 1872, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

A. D. SMITH, Secretary.

Office, 314 California street, San Francisco, Cal.

Norman Gold Mining Company—Location of works, Aqueduct Mining District, Amador County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said company, held on the 4th day of November, 1872, an assessment of five cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary, at the office of the company, Room 5 and 6, No. 302 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Thursday, the 12th day of December 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 4th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

W. H. WATSON, Secretary.

Office, Room 5 and 5, No. 302 Montgomery street, San Francisco, Cal. no16

POSTPONEMENT—"NORMAN GOLD MINING COMPANY."—The day for deeming stock delinquent on the above assessment is hereby postponed until Thursday, the 2d day of January, 1873, and the sale thereof until Thursday, the 23th day of January 1873, at the same place and hour. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

San Francisco, December 12, 1872.

Old Providence Mill and Mining Company, Location of works, Hayden Hill Mining District, Lassen County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said company, held on the 7th day of November, 1872, an assessment of twenty-five cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary, at the office of the company, No. 415 Montgomery street, San Francisco. Any stock upon which said assessment shall remain unpaid on the 14th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 6th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

FRANK SWIFT, Secretary.

Office, 415 Montgomery street, San Francisco, Cal.

Piermont Milling and Mining Company—Location of works, Piermont Mining District, White Pine County, Nevada.

NOTICE is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 21st day of November, A. D., 1872, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary at the office of said Company. Any stock upon which said assessment shall remain unpaid on Monday, the 30th day of December, A. D., 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the 24th day of January, A. D., 1873, at the office of said Company, at the hour of 2 P. M., to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. W. CLARK, Secretary.

Office, 418 California street, San Francisco. n28-4t

Quail Hill Mining and Water Company---Location of works, Calaveras County, California.

Notice is hereby given that at a meeting of the Board of Trustees of said Company, held on the 4th day of December, 1872, an assessment of two dollars per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, No. 438 California street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 14th day of January, 1873, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the 4th day of February, 1873, to pay the delinquent assessment, together with the costs of advertising and expenses of sale. By order of the Board of Trustees.

T. F. CRONISE, Secretary

Office, 438 California street, np stairs, San Francisco, California. de14

San Francisco Co-operative Land and Building Association.

Notice is hereby given, that the following specified shares of stock in said Association have been, by resolution duly adopted by the Board of Directors, declared forfeited for non-payment of instalments due and delinquent thereon, respectively as specified, to wit:

Names.	No. Shares.	Amount.
John Bray	4	$32 00
Donald Bruce	12	96 00
O T Baldwin	10	60 00
Z Birdsall	10	70 00
George F Coffin	10	80 00
A O Diggins	1	11 00
D C Field	10	80 00
William Huebner	2	20 00
T F Hudson	5	65 00
James Heron	25	175 00
Thomas S. Hager	5	45 00
Charles S Healey	10	90 00
C C Keene	4	40 00
L Kaplan	6	30 00
M Levy	2	20 00
E O Morton	10	60 00
J F McDonald	5	60 00
J B McIntyre	2	22 00
P Plank, Jr	3	36 00
F A Ronleau	10	110 00
L F Rowell	10	70 00
J L Smith	25	175 00
W H Woodward	5	45 00
Charles W Banks	6	25 00
H Kenitzer	5	30 00
Chas A Story	6	26 00
Jos. Silva	2	10 00
W H Wright	10	50 00

The above designated shares will be sold at auction, to the highest and best bidder, for cash, at the office of the Secretary, No. 306 Montgomery street, San Francisco, on Saturday, the 4th day of January, A. D. 1873, at 12 o'clock, noon, unless the sums due thereon, as above specified, together with fines due thereon, and all expenses and charges of sale, are previously paid. By order of the Board of Directors.

H. B. CONGDON, Secretary.

San Francisco, December 13, 1872. 4t

San Francisco Co-operative Printing Company, 411 Clay and 412 Commercial streets, San Francisco, Cal.

There are delinquent upon the following described stock, on account of assessment (No. 6) levied on the 6th day of November, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
James, R A	52	1	$5 00
James, R A	53	1	5 00
Moss & Co	91	1	5 00
Moss & Co	92	1	6 00
Moss & Co	93	1	5 00
Moss & Co	94	1	6 00

And in accordance with law, and an order of the Board of Trustees, made on the 6th day of November, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by the Secretary of the Company, at the office, 412 Commercial street, on Tuesday, the 31st day of December, 1872, at 12 o'clock M. of that day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale. B. H. DALY, Secretary.

Office, 411 Clay and 412 Commercial streets, San Francisco, Cal. ds14-2t

State of Maine Mill and Mining Company. Location of works, Amador County, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment (No. 1) levied on the 17th day of October, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
S L Marks	12	240	12
S L Marks	21	500	25
L N Tower	23	100	5
H B Congdon, Trustee	40	500	25
Platte Burr, Trustee	41	100	50
L N Tower	59	500	25
O E Hutchins	60	400	20

And in accordance with law, and an order of the Board of Trustees, made on the 17th day of October, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Secretary, No. 306 Montgomery street, San Francisco, Cal., on Monday, the 16th day of December, 1872, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

H. B. CONGDON, Secretary

Office, 306 Montgomery street, San Francisco, Cal.

Office of the San Francisco Co-operative Printing Company, 412 Commercial street, San Francisco, Cal., December 4, 1872.

In accordance with a resolution of the Board of Trustees of the San Francisco Co-operative Printing Co., held this day, a special meeting of the Stockholders of said Company is hereby called, the same to be held at the office of the Company, on Wednesday January 8th, 1873, at 12 o'clock M., to take into consideration the propriety of increasing the capital stock of said Company from ten thousand dollars, divided into one hundred shares of one hundred dollars each, the present capital stock, to forty thousand dollars, divided into two hundred shares of two hundred dollars each.

PETER COOK,
JOHN KANE,
R. A. JAMES,
A. P. WARREN,
B. H. DALY,
Trustees

de4-4t

U. S. Grant Mining Company---Location of works, Carlisle, Nevada County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 19th day of November, 1872, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at his office, 226 Clay street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the 30th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 20th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

ENOS TAYLOR, Secretary.

Office, 226 Clay street, San Francisco, Cal. no23

Virginia Consolidated Mining Company---Location of mines: Kearsage Mining District, Inyo County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 11th day of December, 1872, an assessment of two cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, 318 California street San Francisco. Any stock upon which said assessment shall remain unpaid on the 20th day of January, 1873, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 10th day of February, 1873 to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. B. WINGARD, Secretary.

Office, No. 318 California street, San Francisco, Room No 13, third floor. de14-1m

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RAWHIDE
BELTING & LACING
ROPES & CHORDS
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The attention of the Medical profession is respectfully called to the following preparation of this new remedial agent. Eucalyptus and its preparations have been found useful in obstinate cases of intermittent and Marsh Fevers, often auplpantiag the use of Quinine. The paroxysms of Asthma and Catarrh are greatly controlled, and in various Kidney diseases and Catarrh of the Bladder it seems to act like a specific.

FLUID EXTRACT EUCALYPTUS.

This extract represents in a concentrated form the medicinal effects of the leaves of Eucalyptus Globulu

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This compound presents the properties of the leaves in a palatable form and elegant appearance. Dose—One tablespoonful, to be repeated as often as the case demands.

Cigarettes of Eucalyptus Globulus, useful in Asthma, Difficulty of Breathing, Incipient Pleurisy, etc.

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Machinists and Foundries.

ESTABLISHED 1851.

PACIFIC IRON WORKS,

First and Fremont streets,

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MARINE AND STATIONARY,

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18v20-3m GODDARD & CO.

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MACHINE WORKS,

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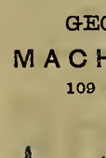

These Works have lately been increased, by additional Tools, and we are now able to turn out any kind of work, equal to and cheaper than any establishment in the State, that is to say:—

STEAM ENGINES,

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Improved Safety Store Hoists,

Fitted with Cutting's Patent Cams, unequaled for safety, convenience and cheapness. This Hoist can be built for about half the price of any other in use. To be seen at HAWLEY & CO.'S.

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4v23tf

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And all kinds of Mining Machinery.

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Every Variety of Shafting,

Embracing ALL SIZES of

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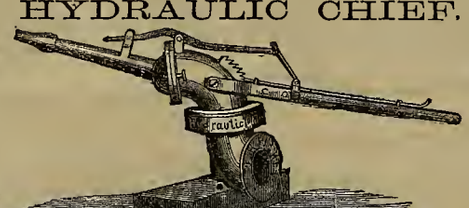

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The only reliable party in the Hydraulic business who protects his patrons.

9v23-tf Address F. H. FISHER, Nevada, Cal.

HYDRAULIC MINERS, TAKE NOTICE—I hereby caution Miners and Manufacturers against making, buying, selling or using a Hydraulic Machine or Joint known as the Little Giant, manufactured and sold by R. R. & J. Craig and Richard Hoskin, as the same is an infringement upon the invention of the machine known as FISHER'S HYDRAULIC CHIEF, secured by Letters Patent, No. 110,222, dated Dec. 20, 1870. All parties participating in such infringements will be rigorously prosecuted. Nevada, Jan. 13th. F. H. FISHER.

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4v24-1y5lamr

NOTICE.

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WM. H. BIRCH, Superintendent.

N. D. ARNOT, Manager.

12v25-tf

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LIGHT AND HEAVY CASTINGS,

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Machinery and Castings of all kinds.

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IRON CASTINGS of all descriptions at short notice

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Particular attention paid to making superior Shoes and Dies. Among the special castings of this Foundry are the well known CALLAHAN GRATE BAR, of superior merit for burning screenings—all size Bars. STRATTON'S JACK SCREWS, all sizes. Superior, compact and effective Horse Powers, Pumps, Agricultural Castings, Ingot Moulds, Assaying and Refining Retorts and Kettles, and a great variety of other and special castings.

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Steiger & Boland are the sole Manufacturers of the Improved Hepburn Roller Pan. The patterns having all the Improvements to those Pans, are at the Occidental Foundry, enabling the Establishment to deliver all pans and parts thereof with uniformity, finished in the best style, and at the lowest possible price. Pan Castings furnished the trade, with liberal facilities for erection, &c. All persons are cautioned against making, selling or using these Pans, except through the authorized agents and manufacturers, viz., Steiger & Boland, of the Occidental Foundry, S. F.

22v25-3m WM. H. HEPBURN.

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INCORPORATED.....APRIL 30, 1868.
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Manufacturers of Steam Engines, Quartz and Flour Mill Machinery, Steam Boilers (Marine, Locomotive and Stationary), Marine Engines (High and Low Pressure). All kinds of light and heavy Castings at lowest prices. Cams and Tappets, with chilled faces, guaranteed 40 per cent. more durable than ordinary iron.

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JOSEPH MOORE.. Vice-President and Superintendent
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24v17-qy

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16v25-tf

Notice is hereby given, that the copartnership heretofore existing between A. J. Severance, Charles W. Randall and J. Gus. Burt, under the firm name of "Severance, Holt & Co.," is this day dissolved by mutual consent. A. J. Severance, having purchased all the interest of his late partners, will continue the business of manufacturing and selling Diamond Drills as before, under the style of A. J. Severance & Co.

Dated San Francisco, Nov. 24, 1871.

Office, 315 California street. A. J. SEVERANCE,
CHAS. H. RANDALL,
22-v23-tf J. GUS. BURT.

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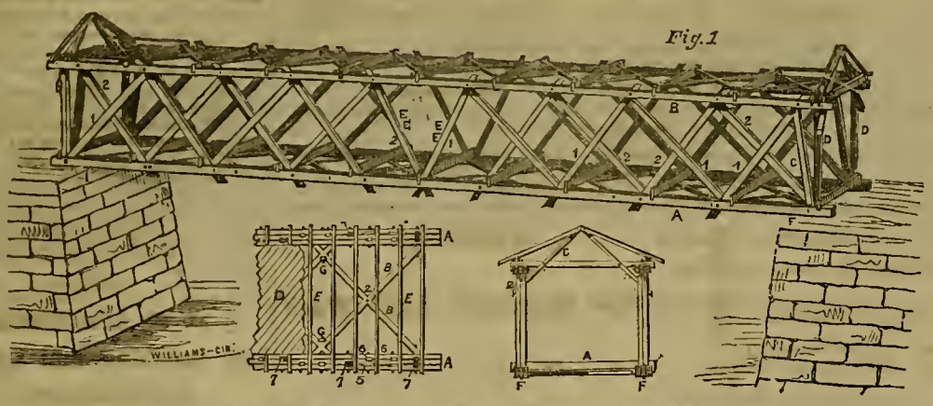
N. W. corner Natoma and Fremont streets, S. F. Entrance on Natoma street. 6v23-3m

PACIFIC BRIDGE COMPANY,

Fig. 1



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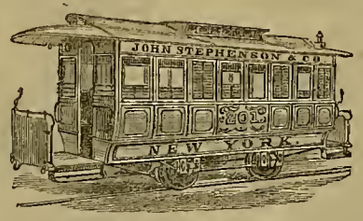

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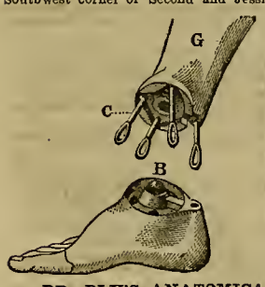

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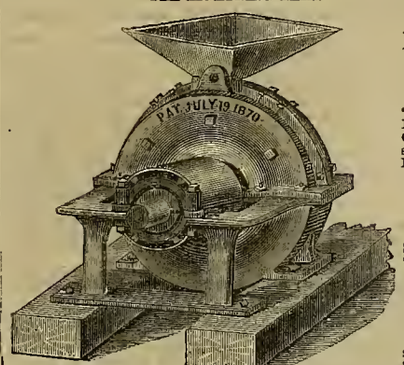

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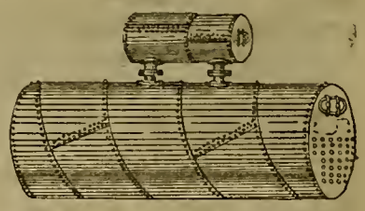

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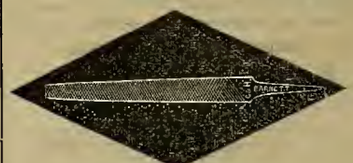

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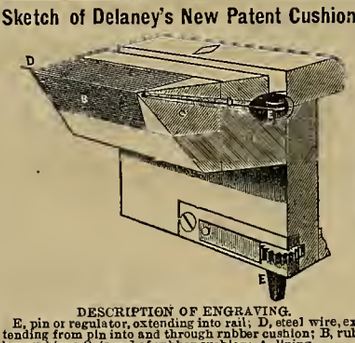

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FOR A PORTION OF THE

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OFFICE OF BOARD OF CITY HALL COMMISSIONERS,
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SEALED PROPOSALS FOR FURNISHING CERtain material for a portion of the New City Hall Building and Hall of Records and for the construction thereof, will be received at the office of the Board of City Hall Commissioners, corner of McAllister and Leavenworth streets, until 12 o'clock M. of FRIDAY, the 27th day of December, A. D. 1872, except for Iron Works, and for that, until 12 o'clock M. of FRIDAY, the 24th day of Janusry, A. D. 1873, viz:

10,000,000 Brick;
5,000 Barrels Lime;
5,000 Barrels Cement;
Stone for Facing of Basement Story and Building the same in the Walls, ete;
Rolled Iron Joists;
Iron Girders and Colnmns;
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All according to the Printed Specifications, Schedule. etc., and Plans and Drawings.
The Printed Specifications and Printed Forms of Proposals csn be had on application to the Secretary, snd the Plans and Drawings can be seen, and all further information—as to the details of the work, etc.—can be obtainod from the Architect, at the office of the Board.
The Bids must be endorsed for the Material proposed to he furnished or Work done, and addressed to the Secretary of the Board.
No Bids will be entortained unless made on the specified "Printed Forms of Proposal," and accompanied by a certified check, or bond with two good and sufficient surelies, in a sum equal to 10 per cent. of the total sum of the tender, to be returned on the due entering into the contract of the psrty to whom it may be swarded, or to be forfeited, if the party fail to enter into the eald contract.
Each bidder for Brick will state what qnantity he will furnish within one year, and at what times he will deliver them. Samples must accompany each bid.
The Board reserve the right to reject any or all bids.
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Sunday, December 1st, 1872.
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LEAVE SAN FRANCISCO.

7.00 A. M. (Daily). Atlantic Express Train (via Oakland) for Sacramento, Marysville, Redding, and Portland, O., Colfax, Reno, Ogden and Omaha

7.15 A. M. (Daily). Csl. P. R. R. Steamer (from Broadway Wharf)—Connecting at Vallejo with Trains for Calistoga, Knight's Landing and Sacramento; making close connection at Napa with stages for Sonoma.

2.00 P. M. (Snndays excepted). S. F. & N. P. R. R. Steamer (from Broadway Wharf), connecting at Donahne with Trains for Cloverdale. Making close connection at Lakeville with etages for Sonoma.

2.00 P. M. (Sundays excepted). Stockton Steamer (from Broadway Wharf), tonching at Vallejo, Benicia, and Landings on the San Joaquin river.

3.00 P. M. (Daily). San Jose Passenger Train (via Oakland), stopping at all way Stations.

4.00 P. M. (Snndays excepted). Passengor Train (via Oakland) for Lathrop, Merced, Visalia, Tipton, and Los Angeles, Stockton and Sacramento.

4.00 P. M. (Snndays exoopted). Csl. P. R. R. Steamer (from Broadway Wharf) connecting at Vallejo with Trains for Calistoga, Knight's Landing and Sscramouto.

4.00 P. M. (Sundays excepted). Sacramento Steamor (from Broadway Wharf), tonching at Benicia, and Landings on the Sacramento river.

5.15 P. M. (Daily). Overland Emigrant Train (via Oakland)—Through Freight and Accommodation.

OAKLAND BRANCH.—LEAVE SAN FRANCISCO, 7 00 8 10, 9 20, 10 10 and 11 20 a. m., 12 40, 1 50, 3 00, 4 00, 5 15, 6 30, 8 9.20 and *11 30 p. m. (9 20, 11 20 and 3 00 to Oakland only).
LEAVE BROOKLYN (for San Francisco), *5 30, 6 40, 7 50, 9 and 11 00 a. m., 1 30, 2 40, 4 55, 6 10, 7 55 and 10 10 p. m.
LEAVE OAKLAND, *5 40, 6 30, 8 00, 9 10, 10 00, and 11 10 a. m., 12 00, 1 40, 2 50, 3 50, 5 05, 6 20, 8.05 and 10 20 p. m.
ALAMEDA BRANCH.—LEAVE SAN FRANCISCO, 7 20, 9 00 and 11 15 a. m., 1 30, 4 00, 5 30, and 7 00 p. m. (7 20, 11 15 and 5 30 to Frnit Vale only).
LEAVE HAYWARDS (for San Francisoo), *3 45, 7 00 and 10 45 a. m., and 3 30 p. m.
LEAVE FRUIT VALE, *4 40, 7 35, 9 00 and 11 20 a. m., 1 30 4 05 and 5 30 p. m. *Except Sundays.

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Christmas.

Americans recognize but few national holidays. Certain sects of Christians, however, have numerous holidays, but they are generally devoted exclusively to religious and devotional exercises. But Christmas as a holiday is an exception, and though, as with our Thanksgiving day, religious exercises make a part of the programme of observances, more particularly with the Roman, Greek and English church sects of christians, in which praise is offered to God for his infinite goodness and mercy, in giving to the world the Saviour, whose nativity or birth they celebrate on that day; yet custom has, from the earliest times, made it a day over all other church holidays, as one devoted to reunions, merry makings, joyous givings, peace offerings and good cheer, in which the old and the young participate.

Yet, though the veteran Christian on this day may have his thoughts at intervals turned to the contemplation of the Infinite, and the Author of the Great Redemption—our observation leads us to believe, that with the masses of the so-called Christians, the larger share of thought is bestowed on gifts, wines, turkeys and good dinners; and that, particularly with the young, Santa Claus is the hero and divinity of Christmas, for

"When time comes round, a Christmas-box they bear,
And one day makes them rich for all the year."

And it would seem that merrymaking and feasting are equally legitimate, having their precedent established and recorded far back among the Christian centuries, when it was said:

"At Christmas play, and make good cheer,
For Christmas comes but once a year."

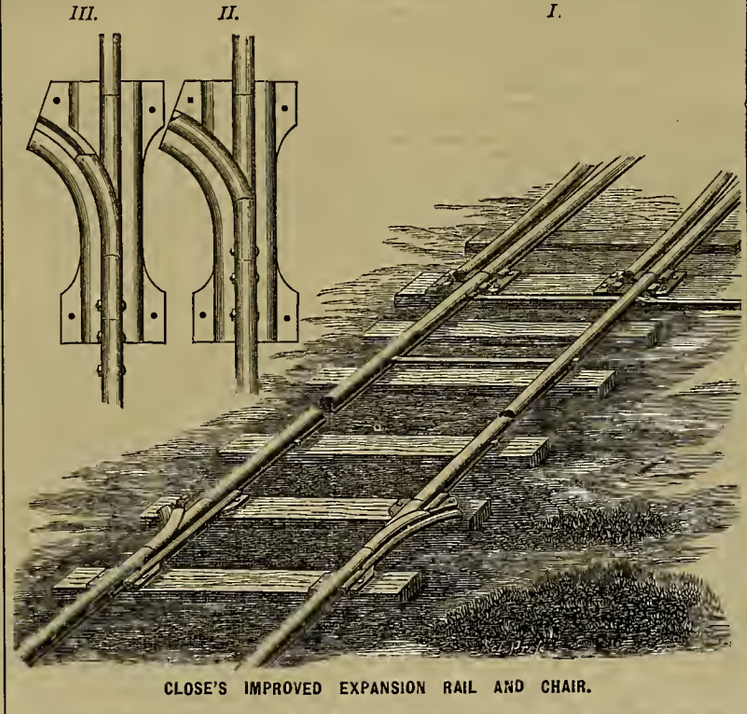
And now as the day will be upon us before another issue of the PRESS, we wish our patrons and readers, all, a Merry Christmas.

OUR MINING SUMMARY.—The Nevada *Transcript* finds fault with us for giving a "slim review of the mines of this State and paying a great deal of attention to mining interests abroad." Our weekly mining summary is compiled and condensed from reports published in the papers representing certain localities, and we always endeavor to give as full a notice as possible. A number of the interior papers in mining districts have a weekly summary of mining news, but some of the local papers pay much more attention to political and general topics than to local affairs. We always copy any news of interest in the California papers as well as others, but find more difficulty in making up our summary of California than of all the other States and Territories put together. The only reason is the scarcity of items in the local papers. If they do not pay enough attention to their immediate interests to give the mining news of their respective localities, we are unable to get it. Full credit is always given for any items used, and perhaps it would be difficult for the *Transcript* to look over our files, for some time back, without finding almost every mining item it has published, and all that were of general interest. The Nevada papers publish very full weekly summaries, so there is never a dearth of news from that State, but, as a general thing, the California papers are negligent in this respect, and we find it difficult to procure much mining news. Let our interior cotemporaries pay a little more attention to this matter than they have been doing, and they will oblige the general public, and the miners themselves, as well as us. We desire to represent the mines of California fully in their fairest light, and endeavor so to do; but beyond occasional correspondence, and that of our regular traveling correspondence, we have to rely on the interior press for our news.

Improved Expansion Rail and Chair.

One of the most serious difficulties to be met with in the maintainance of railroads, is that caused by the alternate expansion and contraction of the rails from heat and cold, and the "crawling" or moving in one direction of the track, either on a grade, or by reason of the moving of trains constantly in one direction, as in the case of double lines of track.

Many ingenious arrangements have been devised for the purpose of overcoming these difficulties. Among the objections to previous inventions may be mentioned the necessity for constant attention and adjustment; open spaces left at the ends of the rails making a weak joint; and such an arrangement of the joint as to prevent a full bearing of the wheel upon the rail. This latter fault is a grave one, and causes the ends of the rails to be so battered and broken, as to become worthless in a short time.



CLOSE'S IMPROVED EXPANSION RAIL AND CHAIR.

Our engraving to-day presents views of an expansion chair, invented and patented by Mr. William Close, of Sacramento, which meets all the requirements of a perfect expansion joint. It is automatic in its action; always presents a full surface of the rail to the wheels, whatever may be its position, and may be applied, not only to switches, but to the track on long bridges, or at any point affected by the causes mentioned above.

These chairs have been thoroughly tested on the Central Pacific Railroad at Sacramento, and on the Virginia and Truckee Railroad, demonstrating the fact that in addition to accomplishing their object so far as counteracting the action of heat and cold upon the track, is concerned, they are durable and safe to run over at any rate of speed.

Fig. 1—Is a view in perspective showing the application of the Expansion Chairs to a switch, the "throw rails" being represented as broken in the middle to shorten them sufficiently for the size of the cut.

Fig. 2—Shows a plan of the Chair with the joint closed, and Fig. 3, shows the joint opened.

The principle, as will be seen, is that of making a curved section of the rail which moves in a groove, curving outward from the line of the track, so that the latter is a tangent to the curve.

The curved section meets the straight part of the rail having a short straight section jointed between the two, so as to allow sufficient motion.

When in place, at a switch, any expansion or contraction will be taken up by forcing the curved section out, or drawing it in, and the switch rail is thus relieved from the pressure which would otherwise cause it to bind, and necessitate the cutting off of a piece of the rail in one case, or would leave a large open space at the head Chair.

On bridges or other places where required, aside from switches, the single Chairs can be used or the capacity can be doubled by a curve, in each direction on the same Chair.

From 6 to 9 inches of expansion can be taken up by a single Chair.

Any further information can be obtained by addressing the inventor, or Mr. J. R. Wilkinson, Sacramento, Cal.

UTAH ITEMS.—They have been having some storms in the mountains back of Salt Lake this week, but the weather in that city is still pleasant. Transportation is said to be wholly insufficient for the greatly increased amount of ore in the cañons. Work on the Brigham cañon and Little Cottonwood railroads is progressing rapidly, and the cars are expected to be running before Spring. Very favorable accounts are coming from the mining districts, and there has never been known before in Utah, such activity and promise of the mining interest.

NARROW GAUGE.—A council of citizens is called at Corinne, to build a road from the Utah Northern Narrow Gauge line to that point.

The Coming Course of Lectures.

The Quarterly Meeting of the Mechanics' Institute was held on the 14th inst., and the President's report read. The Regents of the State University have made arrangements with the Trustees of the Mechanics' Institute for a course of Saturday Evening Lectures on the plan similar to that of last year, and the President's report announced the following appointments:

Two lectures to be delivered by President Gilman, on January 4th and 11th—first, on "Polytechnic Schools at Home and Abroad," and second, on "The Physical Geography of the United States in relation to its History." Five to be delivered by Professor John Le Conte, on January 18th and 25th, on "The Distances and Activities of the Stars;" February 1st, on "What We Breathe;" February 8th, on "What We Drink;" February 15th, on "What We Eat." Two by Professor Joseph LeConte, on February 22d and March 1st, on the "Ancient Glaciers of the Sierras;" one by Professor Kellogg, on March 8th, on "Homer and the True Homeric Poems;" one by Professor Rising, on March 15th, on the "Physical and Chemical Properties of Water;" and one by Professor Swinton, on March 22d—subject to be announced.

As we have stated before, a fee of one dollar will be charged for the entire course, subject to the rules heretofore in use. The topics are well chosen and will be interesting to all. We hope to hear of a good attendance at these lectures, as the gentlemen selected are fully able to handle the subjects in a popular and comprehensive manner, while at the same time they will be sufficiently scientific to please those who are interested in technical details.

THE DIAMOND FRAUD.—Dispatches have been received in this city, stating that Arnold, of "salted" diamond fields fame, and whose property in Kentucky was recently attached by Wm. M. Lent, on account of the recent diamond swindle, has published a long defense in the Louisville *Courier-Journal*, denying the charges and saying that he never sold a dollars worth of property to Lent, or had a contract with, or received money from Lent at any time. He alleges that the discovery was honestly made, and the transactions in regard to it were all between himself, Slack, Harpending and G. D. Roberts, and were all fair, and after a full investigation by all parties. He further alleges in his statement that the charges against him are made by a powerful and unscrupulous ring, guilty of many swindling mining transactions.

It is also stated that Wm. Wilson, a prominent lawyer, is on the way to this State to bring a libel suit in behalf of Arnold, against the parties interested with charges of swindling against him. Arnold makes some very foolish assertions about having discovered enormously valuable mines in Kentucky, which he values at hundreds of millions of dollars.

AMERICAN FLAT TUNNEL.—This tunnel, on the Virginia and Truckee Railroad, which was destroyed by fire on the 17th of October, is again in order. The connection was made on the night of the 16th inst., and trains can now run from Reno to Virginia without detention. The tunnel is 585 feet long, and has been lined with zinc to protect it against fire. The interruption of traffic caused by the accident to the tunnel has had a serious effect on the Washoe mines, causing a scarcity of wood, supplies, etc., and every effort has been made to repair it as quickly as possible.

Metallic Staples of the Pacific Coast.

What was the phantom that haunted the minds of the human race through many ages? The belief that there existed a land, hidden from the gaze of the majority of the sons of men, where illimitable riches prevailed, where there were no poor, where the houses and temples were of gold and silver, where arms and armor and the commonest utensils were formed of incomparably the most precious of metals. The causes of some of the most remarkable revolutions of the world may be traced to this universal belief and to the all-absorbing passions to which it gave rise. The earliest expedition of the most famous people of Europe, that which gave rise to their commerce and subsequent splendor, was the search for the El Dorado—the fabled golden fleece of antiquity; the same idea inspired the minds of the northern hordes that trampled the Roman Empire to the dust; it led the Mongols from the depths of Asia to the conquest of the earth; led Columbus to the new world, Cortez and Pizarro to the conquests of the Indies and Peru, De Soto to the discovery of the Mississippi, and gave world-wide fame to the chivalrous and adventurous Sir Walter Raleigh, who spent the best years of hie life in the unavailing search for the sams El Dorado—the city of the Gilded One. And considering the wonderful development of the last twenty years by the waters of the Pacific, it is, we think, too much to assume that the universal belief of ages was founded entirely on a myth. There may at least a doubt remain as to whether it was not founded on the actual knowledge and existance of the races who lived five thousand years ago. The discovery of the existence of the ante-historical race of the mound builders may make us at least cautious in determining as to whether our mines were not known and worked untold centuries before the advent of the red man to this continent. Familiarity breeds contempt, and lack of information too, and how many are there among us who can thoroughly realize to themselves the value of the

Amazing Quantities of Gold and Silver

Extracted during the last twenty-seven years from our placer quartz mines and lodes of silver. That amount cannot be ascertained to such a critical nicety as to satisfy the over scrupulous statistician, but counting the value of bullion exports, comparing them with the receipts as far as they have been published, and making due allowance for gold taken from the State by hand in the form of dust, nuggets and by those who wished to dispose of it at better rates elsewhere, or to amaze their wondering friends, wives or sweethearts East or in Europe by the eastern shore of the Atlantic Sea, we find that this coast, principally California, has produced gold and silver worth the almost incredible sum of one thousand two hundred and nineteen millions of dollars. It is not easy to realize the significance of these figures. They represent the entire real and personal wealth of the nation, for in the course of trade every one of these dollars is made to represent twenty times as much real estate or personal property. The annual yield of our mines has never fallen below fifty millions of dollars, and has most frequently surpassed it—in the year 1853 being estimated at a value of seventy millions of dollars. Of the whole value, at least four-fifths have been gold, and the remaining one-fifth silver, obtained in small quantity in California, but mainly in Nevada, and principally from

The Wonderful Mines of Comstock,

Whose yield in twelve years have added to the argentiferous wealth of the world the almost incredible amount of one hundred and fifty million ounces, representing about the same number of dollars. Discovered in 1860–61 and yielding in the latter year bullion to the value of six million dollars, it reached a yield of twelve million dollars in 1863, and sixteen millions in 1867. Enough gold and silver have been raised in the Pacific States since 1847 to give two thousand dollars to every man, woman and child in the State, and six thousand dollars to every male adult. With such an abundance of wealth, our people have been remarkably liberal; they have not kept their treasures by them, but have sent them to every part of the earth in exchange for luxuries formerly accessible only to kings and princes. By much the greater part of our bullion has been exported. We have got rid of in this way up to the present time

One Thousand and Thirteen Millions of Dollars.

In the first two years of our existence we sent abroad in this way sixty-six millions; in 1851 and 1852, over ninety millions; and since then amounts equaling in value from seventeen to fifty-five millions seven hundred thousand yearly,—the latter, the largest export, having taking place in 1864. Of the total, the East has taken the largest share,—over one-half, not less in round numbers than six hundred millions of dollars having been sent thither since 1850. One hundred and ninety million dollars has been poured into the bank-vaults and coffers of Great Britain during the same interval. China—that reservoir of the precious metals, into which, as the waters of great rivers pour into some giant lake without outlet—has taken over seventy-seven million since 1855. Of the balance, we have sent about nine millions to Panama, nearly one million dollars to the Philippines, seven hundred and twenty thousand to Mexico, one million seven hundred thousand to Central America, about a million and a half to the Sandwich Islands and to Chile, and the balance to Australia, Peru, Calcutta, the Society Islands, Havana, British Columbia and various other countries. California and Nevada have thus been the golden and silver sources whence

Rivers of Wealth

Have poured over nations—over continents, and these sources, be it remembered, have been ones that never have failed or materially lessened for a quarter of a century. Of this great outward flow, of these Plutonic streams, a considerable proportion, particularly of late years, has consisted of

Coin,

Particularly of gold coin, for the greater part of the silver has been exported in the form of bullion. About one-fourth of all the gold discovered on the coast has been coined in San Francisco, and a much larger proportion in the other Mints of the United States. The value of gold coin issued from this Mint up to the beginning of this present year has amounted to $312,681,713.04, and that issued from all the Mints of the United States, made from gold mined on the Pacific slope, has amounted to upwards of seven hundred millions of dollars—seven-eighths of all the gold coined in the United States since the declaration of independence. And of all the silver coined in the United States since 1841, equalling in value $16,210,585.32, the Pacific States and Territories have supplied one-half nearly, of which $6,974,925 have been issued from the Branch Mint in this city. Of all the gold coined in this city the largest quantity was issued in the shape of money in 1856, when $29,209,218.24 was coined, this being nearly three times the value of the amount first coined here in 1854, which was $10,842,281.23. This latter doubled the following year, and, as we have seen, nearly trebled the second year after; but it has never attained anything like these dimensions since, save last year, when it exceeded $25,000,000 in value. During all the other years it has wavered in value between about fourteen and nineteen millions of dollars. The greatest quantity of silver coined here was in 1868, when $822,000 worth was converted into money. And the extent to which gold of California production enters into that minted in the Union is shown conclusively by the fact that out of all the gold coined in the United States Mint at Philadelphi, amounting in value to over two hundred and fifty-seven million dollars, not less than two hundred and thirty-one million dollars worth was minted from California. It is

An Interesting Question,

That which aims to know what has become of all the bullion, etc., hence exported. More than six hundred million dollars worth has been sent to New York since 1848, and considerably less than half of that has been coined. Even allowing for a very large surplus for use in the arts, etc., a great portion of the balance is unaccounted for. It is shipped to England—one of the great store-houses of the wealth of the nations—shipped, too, as well as hundreds of millions of dollars worth of coined gold made mainly from California gold, sent across the Atlantic to pay for the innumerable articles of luxury and necessity needed by the population of the Union, so largely increased in numbers and wealth. In fact, by much the greater part of all the bullion that we export ultimately finds its way to England, so that in reality it is for England, her wants and necessities, and later for France and Germany, which absorb California gold through England, that we have been piercing into the bowels of the earth for more than a quarter of a century. The use of it made in this city in the

Arts and Manufactures

Are, considering our population, great, not less than 16,000 ounces of gold, and 67,000 ounces of silver being used every year by our gold and silver smiths. Riches and leisure have brought refined tastes, and our wealthy merchants and professional men fully employ the time and test the artistic skill of our workers in the precious metals. And finer specimens of jewelry, gold and silver ware cannot be found in any part of the world than are found in our city. The beauty in particular of our silver ware, the chasteness and elegance of the designs, and the labor and skill that must be expended in their elaboration, are truly subjects for wonder. The value of these various articles, some sets of which are themselves worth more than $1,000, is every year equal in round numbers to $500,000, and notwithstanding that the golden days of the olden time have in a great measure passed away, our manufactures of gold and silver wars are increasing in extent and importance year by year.

We have Made the World Rich

By the immensity of treasure which we have poured into the circulating channels of trade and commerce. It is estimated that the amount of gold and silver coin necessary to conduct the commerce of Great Britain is equal to not less than $410,000,000. But we have sent three times that amount abroad into the world since the opening of our mines, at least one-half of which has found its way directly or indirectly to Great Britain. The amount of gold and silver coin in the world has probably a value in the neighborhood of $2,000,000,000. More than $700,000,000 of this coined in the United States have been added to the general circulation since our mines began in 1847, and there is no doubt that one-half of it, and more, has been coined from California and Australian gold, and Nevada silver, since 1847. The wonder of all who have thought about the subject has been, that the price of gold has not depreciated in consequence of the immense additional supplies thrown on the markets of the world, or, which is the same thing, that

Prices Generally have not Risen.

This, however, is a mistake, for prices have risen. It is of course, assumed that the advance in prices which has taken place all over the world during the last thirty years is the effect of increased demand and an increased rate of wages. If, however, there is an increased demand the facilities for supplying the demand have increased in an equal or greater ratio, and the increase of wages is only a legitimate consequence of the advance in prices. The latter have undoubtedly advanced, and in some instances enormously, and the cause is no doubt due to the immense quantity of the precious metals poured into the markets of the world, depreciating their value and enhancing the value of everything that they purchase. This depreciation of gold and silver, however, has not been at all in proportion to that which might have been expected; but this is quite easily accounted for,

The Wants of Commerce and the Increase of Population

Have caused a demand out of all proportion to that of former days. The immense multiplication of man's powers by the many mechanical inventions that have been made of late years have of course also thus raised the value of the aggregate industrial wealth, and thus required an enlarged supply of the circulating medium. In fact, but for the vast development of the credit system, and but for the use of greenbacks in the United States, there can be no doubt that gold and silver would have increased very much in value, and that prices generally would have very perceptibly declined. The increase of population also has a tendency to bring about this result. The population of Europe increases at the rate of about one per cent. per annum; that is, it about doubles every fifty years, and of course without any disturbing causes intervening, the demand for gold and silver would increase with the increase in population. But in fifty years, unless a paper currency is largely substituted all over the world, it is certain there will be needed four times as much coin as now, and that of course unless this need is supplied prices must fall enormously.

The Future

Of this coast, as a bullion-producing region, will, we believe, be as distinguished as the past. We have as yet only begun to discover the wealth that is hidden in the recesses of that mighty mountain range which, beginning at the Straits of Magellan, terminates only with the Arctic Ocean. Improved methods of mining and extraction will develop in the mining regions in California and Nevada and the Territory of Utah, and unfold a wealth which the present generation never dreamed of.—*Chronicle.*

Tuolumne's Gold.

Could the figures be correctly given as to the amount of treasure Tuolumne has poured forth from out her rugged bosom, and sent out to enrich the world, it would astonish the most extravagant in calculation. Even a rough estimate—for such could only be given were it attempted—would be sufficient to open the eyes in wonderment of those living at a distance and not acquainted with her resources. The amount shipped by buyers of gold-dust in the various towns and camps since the days of '49 to the present time, has been counted by millions—that carried away by private hands of various nationalities, in specimens and dust, cannot be even guessed at. Mr. Kenfield, of Wells, Fargo & Co., Sonora, says that he has shipped since his connection with the firm as agent in this town—a period of nearly sixteen years,—at least *seventy-five tons of gold*, or as much as eight of our largest freight teams could comfortably haul—which would amount to, at least, thirty millions of dollars. We do not wish to be understood the entire amount to be gold-dust—but a large part of the shipment, at least two-thirds, has been the product of our mines and resources in and around Sonora. Who can compute the untold wealth that has never been brought to light, and of which we pass over in our daily walks and ramblings? The bulk of her treasure lies buried in her soil, awaiting capital and perseverance to bring it forth.—*Sonora Independent.*

Plumbago. — An exchange, republishes an article from the Kansas City *Journal of Commerce*, which announces the discovery of a plumbago vein in Kansas, and asserts that it is the first plumbago discovered in the West. Now Tuolumne County in this State is pretty far West, and plumbago in large quantities has been known to exist there for several years; in fact the veins have been worked to a considerable extent, furnishing sufficient to supply the demand for foundry facings to the foundries in the State; not a small amount by any means. Lately J. W. Rover of this city, discovered a plumbago vein near Columbia, samples of which have been tested here and in the East, and it has been pronounced the best article yet found in the United States. Mr. Rover is now engaged in developing the vein which increases in size and quality as it is prospected.—*San Joaquin Republican.*

The Comstock Lode.

Upon paying a visit to San Francisco, says the Virginia *Chronicle*, nothing so completely surprised the denizen of Washoe as the manifest feeling of distrust and uncertainty in the minds of stock operators in relation to the future prosperity and development of the Comstock lode. Here everybody is hopeful. No matter how much the Bulls and Bears may hollow and growl at the Bay, the citizens of Storey county and the mineral bearing regions round about keep on the even tenor of their ways, fully assured that our great mines were never before half so promising in prospective development and ultimate richness. For many weary years our mine owners and laborers had to contend against almost insurmountable physical obstacles in order to get a start in practical and profitable mining. At first, the machinery was crude and ill adapted to the purposes of ore reduction. The roads over the Sierras were at times almost impassable. Amalgamators and superintendents in many instances were inexperienced persons, incapable of managing their several departments. Worse than all, our people were for years constantly vexed and grievously imposed upon by unscrupulous and pretentious charlatans who claimed to be scientists and mining experts. This gang of unconscionable fellows not only led the miners astray in their endeavors to seek the true mineral deposits, thereby causing many years of useless labor and great waste of precious time, but unmercifully fleeced San Francisco and Virginia out of vast sums of ready cash. It is pleasant to know that these perplexing hindrances to our prosperity have all been removed. We have now a railroad running from San Francisco to our very dump piles. Our mills are supplied with machinery such as experience and mechanical ingenuity suggested as being requisite for speedy and profitable work. Hard work, persistent pluck and common sense have at last shown the true position of the rich ore deposits, and the occupation of the scientific (?) quack is gone. The vast expansiveness of many of our deep mines augurs well for the future of the whole great mineral belt—in fact, it may be fairly asserted that all of the work which has been done on the Comstock during the past decade was merely prospecting the mine. The incomparable richness of the original croppings, which at one period everybody supposed would "peter out," still manifests its golden presence at hundreds of feet from the surface, and the great argentiferous ledge has widened from a mere trace of broken quartz to a bed of glittering treasure many yards in breadth, apparently inexhaustible and unfathomable. For a time it was feared by mining men that the increasing heat at great depths would ultimately render work impossible, but at present, by judicious and skillful ventilating appliances, the work goes steadily on, and by the time this mode of ventilation becomes impracticable, the Sutro Tunnel will be ready to breathe through cross sections in every portion of the mines. As stated above, for a long period one of the principal obstacles in the way of development of the Comstock, was the perplexing uncertainty as to the true position and dip of the great ledge. For years many believed that the vein dipped westwardly in the foot of Mount Davidson, and the result of this mistake was the wasteful expenditure of many millions of dollars in drifting through the barren, hard rocks of that obdurate old mountain.

At length, by dint of hard knocks and perseverance, miners discovered the inestimable fact that the main ledge of the Comstock dips towards the east with an average inclination of from 40 to 50 degrees; that it is a true fissure vein of unknown extent running through the earth in direction nearly north and south. The result of this discovery was the removal of several of our principal hoisting works many hundreds of feet eastwardly, and it is now considered only a question of time when the rest will have to follow suit.

New Project.—Engineer Patten, of this city, has a project in view, which, if fully carried out will be the best thing that has happened to this section of country since the first discovery of gold. It is well known that the whole section of country about Smiths Flat, Prospect Flat and White Rock, is composed chiefly, of gold bearing gravel, much of which will not pay to work with present appliances. The project of Mr. Patten is feasible and simple, it seems to us, and must strike any one so who is at all familiar with the country, upon examination of drawings which he has made; it is simply to build a tunnel from the bed rock at Smiths Flat directly south to Usher Creek, takes it under Prospect Flat, of sufficient size and with adequate fall to carry off all the water and debris of the various mines, and deposit the same in Usher Creek. With the aid of such a tunnel—with branches—and a sufficient supply of water, all the gravel in the whole region could be worked for one-half what it now costs, and perhaps for much less. The distance of the proposed main tunnel is 3,000 feet, and Mr. Patten estimates that it can be contracted for $30,000. A small sum, surely, for the great advantage obtained by it. It would seem that there would be no trouble in procuring capital to take hold of such an enterprise, for it would certainly be a big investment, and he permanent for at least fifty years. Should this project be carried out, it will do more toward hastening *the* ditch than anything else we know of.—*Placerville Republican.*

MECHANICAL PROGRESS.

Proposed Novelty in Fireproof Buildings.

The *Scientific American* recently suggested that some plan should be devised for constructing iron buildings with hollow walls and so connected that in case of fire the walls might be instantly filled with water from the hydrants, thereby making them perfectly fireproof. The presence of the water would prevent any undue heating or warping of the iron, the same as is accomplished in the case of the steam boiler. The problem was to construct a building that would be absolutely fireproof.

The *Manufacturer and Builder*, since the Boston fire, has had an interview with an ingenious mechanic who has been at work upon this problem ever since the Chicago fire, and who has finally perfected a plan for which a patent is now pending, and which consists of two light iron plate walls, either rolled or cast, and formed with columns of a double T T or I letter I, or any other practicable shape, rabbeted on the edges, and made water-tight by caulking and by fire and water proof cement. The sills, joists and plates are constructed in the same manner, the hollow chambers, formed by the iron plates and column, communicating with each other, and the building held together firmly by horizontal and perpendicular concealed nutted rods. The building can be ornamented in any style to suit the taste of the owner. The novelty of the idea consists in connecting the chambers thus formed, through the sills, with the water mains of the city. When in danger of fire the water is turned on, and the pressure at once forces it into these chambers from sills to plates, and throws it in jets, from different places, upon the roof, completely flooding it, and rendering the building absolutely fireproof, even in the most intense heat.

A building constructed on this plan would require little or no insurance, would save much valuable ground that is now used for thick walls, and can be made at the mills, the parts adjusted and numbered, and shipped and put up with the same facility that bridges are now.

The cost of such a fireproof building will not exceed that of a granite, brick or iron one of a similar style of finish. The paper above quoted says that a company is to be formed for the manufacture and erection of buildings on this plan.

Tensile Strength of American and English Iron and Steel.

A series of experiments was recently made at the Camden and Amboy Railroad shops, Hoboken, N. J., by Mr. F. B. Stevens, in presence of a number of well known engineers and Prof. Thurston and his pupils, from the Stevens Institute of Technology.

The samples tested were from lots sent into market by various manufactnrers, and may be considered to represent, in most cases, an average quality of the several grades.

Thirty-three experiments were made upon iron taken from the exploded steam boiler on the ferry boat "Westfield." The following are the results:

Average breaking weight, lbs. per sq. in	41,653
Highest " " "	50,182
Lowest " " "	29,082
Latter less than former, *per centum*	42

Sixteen experiments were made upon high grade American boiler plate (Sligo), and resulted as follows:

Average breaking weight, lbs. per sq. in	54,123
Highest " " "	57,012
Lowest " " "	51,813
Variation in *per centum* of highest	9·1

Fifteen experiments were made upon best grades of American flange irons:

Average breaking weight, lbs. per sq. in	42,144
Highest " " "	53,277
Lowest " " "	(?) 33,003
Variation in *per centum* of highest	(?) 38

Six experiments were made upon English Bessemer steel:

Average breaking weight, lbs. per sq. in	83,621
Highest " " "	86,580
Lowest " " "	74,509
Variations in *per centum* of highest	14

Five experiments were made upon the best English boiler plate (Lowmoor):

Average breaking weight, lbs. per sq. in	58,984
Highest " " "	64,000
Lowest " " "	55,300
Variations *per centum* of highest	14

Two experiments on iron taken from the exploded steam boiler of the "Red Jacket," resulted thus:

Average breaking weight, lbs. per sq. in	49.000
Highest " " "	56,000
Lowest " " "	42,000
Variations in *per centum* of highest	25

The testing machine used was constructed by Messrs. Richle Bros., of Philadelphia.

Referring to previous tests of iron from the Westfield's boiler it will be noticed that these experiments reveal a greater variation in strength than was there found, while exhibiting about the same average strength, and thus tend to confirm the conjecture expressed by Prof. Thurston in connection with the report of the first series of tests: that a weakening effect may be produced by the wrenching and twisting accompanying explosions. Mr. F. B. Stevens, and other engineers of experience, express the same opinion.—*Journal Franklin Institute.*

BARRON'S STEEL PROCESS—SEVERE TESTS.—Barron's process for the manufacture of steel tools—or rather for the conversion of iron tools into steel—is now in successful operation in Lonisville, Ky., where it has attracted much attention, and has met with very encouraging success. Tools which are to be prepared by this process are first made of cast iron, after which they are introduced into a revolving drum, where the roughness and adhering sand from the moulds are worn off by attrition. The smooth irons are then packed in layers in iron boxes, where they are closely imbedded in clay, and subjected to the action of oxide of iron and certain chemicals, by which the iron is decarburized. There seems to be a secret connected with this part of the process. In these boxes the iron tools are subjected to annealing heat, which is maintained for from three to six days. They are subsequently put in a retort capable of containing about a ton of the tools, into which the vapor of gasoline and other carbonaceous materials are passed. In a few minutes the iron is transformed into steel, when they are ready to be tempered, and ground and polished for the market. The explanations of this process which we have seen are not as clear as they might be, but of the quality of the steel thus produced there is very little question. Professor J. S. Newberry, of the School of Mines, Columbia College, New York, referring to this subject, says: "With tailor's shears cast in shape, made malleable, and then converted by the Barron process, I have cut Florence silk so nicely as to prove the edge perfect; then, with the same shears, have cut up sheets of tin and untempered steel; returning to the silk have found the edge wholly unimpaired, and this after a repetition of more than twenty times." By whatever process steel of this description is made, its exceeding value must create for it a wide demand, and soon render the method by which it is made widely celebrated. —*American Exchange and Review.*

COHESION OF MANUFACTURED IRON.—The Ironton *Register* gives the following statistics regarding the tensile strength of manufactured irons:

The tensile strain of bar iron is given variously from 40,000 to 90,000 lbs. to the square inch. The latter is a very exceptional figure. The main tensile strain of American bar is reported by Professor Johnson at 55,900 lbs., while English bar holds at 53,900. Hewitt's Report of the Paris Exposition chronicles a list of tests with Swedish bar, which ranged from 40,000 to 45,000. Franklinite iron, which runs up sometimes to 70,000 lbs. to the square inch. The Lehigh and Scranton irons hold at from 47,000 to 53,000, but the Juniata, noted for its chains and boiler plate, stands the test at 65,000 to 69,000. In the Pittsburgh irons, the tensile strength ranges from 50,000 to 53,000. The Mahoning Valley, St. Louis, Indiana, Michigan, and other irons, stand at 50,000 to 55,000—very few going down to the first figures

IMPROVED CONSTRUCTION OF TOOLS FOR TURNING METALS AT INCREASED SPEED.—This tool has one or more holes drilled through it up to its cutting edge, through which a jet of water is delivered underneath the shaving that is being cut, and upon the cutting edge of the tool, for keeping it cool in working. By this means the tool is much more effectually cooled than by the ordinary water jet dropping upon the upper surface of the shaving, in which case little or no water reaches the point of the tool itself. The result of cooling the tool by delivering the water jet direct upon the cutting edge is that the surface speed of the tool can be increased four times in heavy cuts, and light cuts can be taken at as much as eight times the speed that is usually practicable with ordinary tools, without any risk of the temper of the cutting edge being destroyed by over-heating.

STEEL RAILS.—At the recent half yearly meeting of the Grand Trunk Railroad company, in London, the President said that 3,500 to 4,000 rails on the line break every winter! But he found comfort in the fact that, in about 110 miles of steel track, only eight or ten rails have been broken. It was feared when Bessemer rails were first introduced that their resistance to wear would be counterbalanced by unusual liability to break, and that they would be especially dangerous in severe climates, the impression being apparently that, having something of the hardness of cast iron, they had also something of its brittleness. This experience of the Grand Trunk Railway, however, indicates that they are especially fitted for such climates.

OUR IRON YIELD.—The yield of the 50 furnaces now erecting will add 500,000 tons of pig iron to the present annual production of the United States, and it is estimated that the productive capacity of all our furnaces will be 3,000,000 tons per annum within two years.

CAR AXLE PATENTS.—It is stated that 104 patents have been granted in this country upon car axles and wheels having the idea in view, of making car wheels to run independently as in turning a curve.

THE STEAM WHISTLE.—Was invented about the year 1835, and was at first applied as a low-water detector.

SCIENTIFIC PROGRESS.

Extraordinary Meteoric Display—What has Become of Biela's Comet?

On Sunday evening, Nov. 24th, a remarkable meteoric display was witnessed from the Observatory at Washington, also at New Haven, Conn. It appears that between 7¼ and 12¼ o'clock, upwards of 250 shooting stars were seen radiating from a point near Gamma Andromeda—the precise point at which astronomers were then looking for the expected return of Biela's comet.

In 1846 that body was seen to divide into two comets, slowly increasing their distance from each other as they move off into space. At their next return in 1852, they were a million and a quarter miles apart. Since that time neither portion of the comet has been seen, though their third passage of the node should have taken place about six weeks ago. Astronomers have for some years been suspecting that the comet had entirely gone to pieces, and that it would not again be seen. Sunday evening were seen, as above stated, about 250 fragments of the comet. A large number of observers would probably have been able to count 700 or 800 in the time named. The process of breaking up has evidently been going on a long time. Mr. Herrick saw in 1838, December 6, quite a number of fragments, though he did not then suspect that they had any connection with this or any other comet.

Both B. F. Sands, Superintendent of the Washington Observatory, and Prof. H. A. Newton, Astronomer at Yale College, believe that these meteorites are veritable fragments of Biela's comet, and have no connection whatever, with the ordinary November meteors or any other meteoric display which heretofore have been observed.

The Molecular Phenomena of Evaporation.

"Why is not all the water in a steam boiler converted into steam at once? Might it not be possible for such an event to occur under certain circumstances?" The *Scientific American* answers the above question as follows: The labors of scientific men, in the field of experimental investigation, have shown, that heat and mechanical energy can both be measured by similar effects, can be converted, the one into the other, and that they have definite and well known quantitative relations to each other. One pound of water requires an amount of heat to be communicated to it, for each degree Fahrenheit that its temperature is raised, which is equivalent in energy to the mechanical action required to raise 772 pounds one foot high. In other words, as usually expressed, a thermal unit has a mechanical equivalent of 772 foot pounds. The combustion of a pound of coal liberates an amount of heat which, although variable, may be taken, with good fuel, as equal to about 13,000 thermal units.

The evaporation of a pound of water from, say 60° Fahrenheit and at 75 pounds pressure, requires the expenditure of 260 units of heat to raise it to the temperature of 320° Fahrenheit, which is its boiling point; and then, before it can be compelled to expand into steam, of 75 pounds pressure, an amount of work must be done which demands the expenditure of 891 additional thermal units, equivalent to the enormous quantity in mechanical work of 697,852 foot pounds, enough to raise over three tuns to the hight of 100 feet. We then have a pound of steam at a pressure, as indicated by the steam gage, of 75 pounds per square inch and occupying a volume measuring a trifle over five cubic feet. The evaporation of steam of 150 pounds pressure would require about one per centum more heat than has just been estimated, and a pound of it would occupy about three cubic feet. A moment's calculation will show that a pound of our fuel is capable of developing heat enough to evaporate about 11 pounds of water from 60° Fahrenheit, but, in practice, a considerable proportion is invariably wasted, and an evaporation of 8 pounds into dry steam is an unusually good result.

If, then, a pound of fuel is burned under an ordinary steam boiler, not more than about 8 pounds of water can be vaporized, for the simple reason that the fuel only supplies just heat enough to evaporate that amount; and if the fuel occupies one minute in combustion, the boiler can only deliver eight pounds of steam per minute. If the supply of heat is cut off, the evaporation of the water ceases at once; if the heat is supplied rapidly, steam is made rapidly, and is always at a rate precisely proportioned to the rate at which heat is applied. We can conceive of no circumstances under which the fuel can supply sufficent heat to evaporate all the water in a steam boiler in any very short space of time."

The Future of Science.

The following extract is from Sir Charles Lyell's recently published volume on the "Principles of Geology: We are sometimes tempted to ask whether the time will ever arrive when science shall have obtained such an ascendency in the education of the millions that it will be possible to welcome new truths instead of always looking upon them with fear and disquiet, and to hail every important victory gained over error, instead of resisting the new discovery long after the evidence in its favor is conclusive. The motion of our planet around the sun, the shape of the earth, the existence of the antipodes, the vast antiquity of the globe, the distinct assemblages of species of animals and plants by which it was successively inhabited, and, lastly, the antiquity and barbarism of primeval man—all these generalizations, when first announced, have been a source of anxiety and unhappiness.

The future now opening before us begins already to reveal new doctrines, if possible, more than ever out of harmony with cherished associations of thought. It is therefore desirable that, when we contrast ourselves with the rude and superstitious savages who preceded us, to remember, as cultivators of science, that the comparatively high places which we have reached in the scale of being have been gained, step by step, by a conscientious study of natural phenomena, and by fearlessly teaching the doctrines to which they point. It is by faithfully weighing evidence without regard to preconceived notions, by earnestly and patiently searching for what is true—not what we wish to be true, that we have attained that dignity which we may in vain hope to claim, through the rank of an ideal parentage.

ATMOSPHERIC PHENOMENA OF THE BOSTON FIRE.—The Signal Service Observer, at Boston, gives the following interesting facts connected with the late disastrous fire of Boston:

The induced currents of wind to take the place of the heated air rising from the fire flowed inward toward it through adjoining streets with great velocity, so much surpassing on the lee side that of the prevailing wind that the fire itself was driven to windward. He reckons the velocity of this indraught on the lee side at 30 to 35 miles per hour, making the fire somewhat like that of a blast furnace. The heated air, gases, smoke, and steam in rising took, as might have anticipated, a spiral movement. A reversed parallel to this tendency of fluids under the influence of gravity to assume the spiral motion when the central portion is withdrawing and the deficit is supplied from the sides, is seen when the plug at the bottom of a basin of water is removed and the basin is kept full from near its edge. An accomplished German mathematician has reconstructed the entire nebular hypothesis on this principle of the tendency of gravitating fluids to form spiral vortices. It was asserted that at the great fire of San Francisco a building was seen to leave its foundations, bending over and falling into the flames as if drawn in by suction. With such facts as the present before us, that statement seems less improbable. The circumstance that the Boston observer's thermometer rose five degrees at a distance of 2000 feet from the fire and directly to windward, gives some notion of the intensity of the heat. One of the dispatches from this fire mentioned a circumstance similar to what was averred to have frequently occurred at Chicago—that flames broke out ahead of the fire in buildings it had not yet reached.

NEW METEOROLOGICAL THEORY.—Mr. F. Capen, according to the Harrisburg (Pa.) *Mercury*, who is a member of the American Meteorological Society, and who has devoted many years to studying the weather, believes he has found the key to the whole meteorological system of the globe. He is now in Hartford, and the *Times* of that city tells us that so confident is he of the verification already obtained of the principles which he has finally adopted, that he has accepted from General Myers, Chief of the Signal Bureau at Washington, a proposition to submit this theory to an extraordinary test. He desires Government aid in the prosecution of his work of investigation; and to test the reality of what he believes he has already discovered, he accepts a proposition to foretell the weather seven days in advance, and he offers to continue this seven-day test for a time long enough to satisfy the Government of the truth of his principle. His claim may seem preposterous to scientific men generally, but meteorology is making rapid strides, and if the "clouds that lower on our house" may be foretold by seven hours, why not by seven days?

SENSITIVE STREAMS. — Professor Edwin J. Houston, while spending a summer's vacation in Pike County, Pennsylvania, discovered the sensitiveness of water to sound waves. Among the many beautiful waterfalls of that section, he found one scantily supplied with water, which dripped in small streams from the ends of the moss covering the rocks of the precipice —the air being still, and the stream free from ventral segments. And it was found that on sounding a shrill falsetto note the stream would instantly respond, and change the gronping of the drops and the position of the ventral segments. A heavy rain, however, flooded the stream, and prevented further investigation.

Stock Sales for Week Ending Dec. 19—S. F. Stock & Ex. Board.

NAMES OF COMPANIES.	Fee't.	Shs. in ft.	FRIDAY. Shs	Prices.	SATURDAY. Shs	Prices.	MONDAY. Shs	Prices.	TUESDAY. Shs	Prices.	WEDNESD'Y Shs	Prices.	THURSDAY. Shs	Prices.	Tot'l Sh's Sold.	Deelin	Advnc
Adams Hill	*				75	50			100	50c					175		
Alpha		300	20	55	5	47	110	⅓@⅜	1510	⅓@⅜	5	48	30	44 @45	1527	½	
Alpt		800	27½	22½ 4½	150	4 @ 4¾	110	⅓@⅜			51	4	100	4	639		½
American Flag		2800	11⅝	220 6¾@ 6¾	130	6¾	115	6¾@ 7	230	6⅞@ 7⅛	110	8¾@ 7	115	7 @ 7⅛	920	⅜	
Amador Tuns													50	5	50		
Arkansas									250	3¾	150	3¼@ 3½	25	3	425		
Arizona & Utah		1000	1⅝	50 1¾@ 1¾	30	1¾									80		
Belcher		1010	40	370 99 @ 102	67	100 @101	215	100 @ 103	370	101 @ 105	615	100 @ 105	205	96 @ 100	1842		2
Baltimore Con*				200 1⅞@ 2	575	1⅞@ 2	190	2 @ 2⅛	200	2¼			390	2 @ 2⅛	1555	⅜	
Bowery	§	1000	30														
Bacon		65	61½														
Buckeye			15	2¾			50	2¾			50	3	70	2¾@ 2⅞	285	¼	
Best & Belcher		224	100	30 5½					20	5¼			100	5¾	150	⅛	
Bellevue		8000	2½														
Belmont					25	1¾	500	5	730	1⅞@ 5	300	1⅞@ 5	100	1⅞	1555		
Chollar	*	4000	10	210 50 @51½	25	51 @55	155	45 @55	980	57 @61	622	53 @60	310	55½@58½	2072	7	
Caledonia		5000	4	370 24½@26	358	24½@26	250	26 @28	435	28½@29¾	624	27 @27½	170	25 @26	2194	10	
Cons. Virginia	*	1160	220⅜	210 43½@45	140	45 @47	108	45 @47	315	47½@50	435	46 @50	165	45½@47	1373	2	
Confidence	*	130	192	130 10	525	10½@11⅝	109	11 @11¾	310	11 @11⅝			100	11	1165	1	
Crown Point	*	600	166⅝	215 99 @101½	140	101@103½	465	101 @ 103	345	102 @108	235	102 @108	155	@ 102	1555	⅛	
Central		700	357														
Calaveras		3200	6¾						25	1	100	75c	200	50	325		
Condor	§																
Columbus					25	1¾			275	1¼	1060	1⅛	165	75c @1	1525		
Chas. man		700	40		425	1¼			200	4½			350	4¾@ 4⅞	805		¼
Chief of the Hill		1000	30	75 4¼@ 4¾													
Chief East Ex	§								40	7½	20	7½	115	7¾@ 8	200	¼	
Cederburg		1200	20	5 7½													
Con. Gold Hill Q		1350	37														
Daney		2000	12	108 75c			50	62½@	110	75c			20	75c	500	75c	1238		
Eureka Cons		1000	30	650 16 @16¾			260	16¾@16¾	655	16¾@17			895	16¾@18	1150	16 @16¾	4020		¼
Eureka		1630	½	30 12½					20	12½@14¾							70		
Exchequer		400	20				145	15 @16	50	16			20	15 @16	70	15 @15½	285		
Eclipse		70	857	10 10			75	10					20	10½	125	9 @10	230		
Empire Mill		75	16	1225 7 @ 8			100	8 @ 10	10	7¾	120	8¾@ 9¾	390	8 @ 8¾	350	7⅝@ 7¾	5280		¼
Excelsior	§	4500	2⅝														
Gould & Curry		1200	4	26 180 @ 183	17	180@182½	25	180@182½	30	180 @195	20	185 @191	5	182½	123		½
Golden Chariot		750	1⅛				30	10	90	10 @11					120		
Globe	*	1600	12½						20	1½	400	1½@ 1¾			420		
Hale & Norcross	*	400	4	85 67½@69	95	73 @80	160	70 @72¾	95	73 @80	435	81 @91	240	81 @85	1175	16	
Huhn & Hunt	§	3600	8½	40 2¼			180	2⅜	100	2¼	430	3¼@ 3½	225	3½	1613	1¼	
Hermes				20 14					125	12½@13½	335	10½@11	200	11¼	680		2½
Ida Elmore		1300	17½	81 9 @10¼			100	10	270	11 @12	510	12	180	11 @12½	1465	2¼	
Imperial		1800	648⅜	2233 83½ @ 9½			1135	9½@10	605	9½	165	9½@10	170	8¾@ 9⅞	800	9¼	¼
Ingomar	§	1000	40	250 1½@ 1⅝			100	1¾							350	1½@ 1⅝	1150	¾	
Independent		1800	14														
Ivanhoe	§	600	5	300 59c			100	56c					125	25c @40c	237	25c	762		¼
Julia	*	2000	15	35 4½@ 4¾			65	4½@ 4¾	90	4½	80	4½	270	4½	540		
Justice		3000	7				65	6½@ 7			170	6½@ 6¾	100	6 @ 7¼	400		
Kentuck	*	85	21						15	140			15	165 @ 170	10	160	40		
Kentucky	§		20														
Knickerbocker		1200	20	180 4½@ 4¾	130	4⅝	30	4¾	140	5½@ 5¾	195	5 @ 5¼	100	4¾	775		¾
Mammoth		1800	20	10 50c					330	60c	20	50c	200	50c	1250		
Meade's Valley	§		12½	1735 18½@19½			1360	18¾@19½	1579	18½@19	725	18¾@19½	400	18 @19	6580		¼
Mahogany		721	137½				155	8½@ 9¾	25	9					180		
Mocking Bird		1200	25														
McMahon																	
Monitor Belmont																	
Newark	§	800	40	290 3			200	3	85	2½@ 2¾	250	2¾@ 3	23	3 @ 3¼	240	2¾@ 3	1250		
Ophir		1400	12	22 35 @37½			317	39 @43	193	40 @42	190	41 @44	30	44 @45½	180	39½@41	1150	¾	¾
O. H. Treasure	§	800	26⅔	2¾ 4									23	4¾	150	4 @ 4¾	200		
Overman	*	12-0	10½	190 62½@65			200	66 @91⅝	310	66 @72	350	71 @78	165	67 @76	275	65 @70	1390	5	
Occidental		1000	12½								300	9					309		
Pioche	§	1000	20	140 8½@ 9			305	9¼	365	9¼@10¼	285	9⅝@10¼	10	10¼	176	10½@10⅝	1280	1¾	
Pioche West	§																		
Pioche Phœnix					1000	5½@ 5⅝	263	6	1530	5⅜@ 6	825	5⅞@ 6	630	5⅞@ 6¼	740	6 @ 6¼	5960		⅝
Page & Panaca	§	2400	16⅞	1563 2⅜@ 2¼			50	2⅜	200	2¾	290	2¾	150	2⅞	250	2 @ 2⅛	2305		⅛
Pea Vine	§	1000	30				200	70 @75	200	70c					200	65c	1200		
Phœnix				470 2½			100	2½	85	2¾@ 2⅞	500	2½@ 2⅝	150	2¾	350	2 @ 2⅝	1655	½	
Raymond & Ely	§	4000	7¼	490 84 @85½			925	76 @80	360	77 @79	450	79 @81	360	80½@84	380	82 @84½	2855		1
Savage		800	20	392 58 @65			203	57 @58½	590	67 @75	754	68 @85	120	80 @85	395	76 @80	3217	15	
Seg. Belcher		160	40	2½ 70							10	70					72		
Sierra Nevada	*	3000	7¼				20	14½			10	14¼	30	14½	120	13¾@14	240		
Senator				100 1											80	1	180		
Succor	*	7600	3																
Silver Hill				60 7			655	8 @ 8½	455	8 @ 8¾	3	7⅞@ 8	70	7½			1270	½	
Silver Peak				1300 1½@ 1⅝	700	1½	350	1½@1⅝	50	1½	300	1⅝@ 1¾	16	1½			2716		½
South Chariot	§	660	30½						100	1¾	10	1½					110		
Trench		20	250																
Tecumuach																			
Waah. & Creole	§	200	150						55	2¾@ 2⅞					60	3	115		
Woodville	§	1400	20	115 4¾@ 4¾	20	4¾			20	4¾					220	4¾@ 5	435	½	
War Eagle		1000	10																
Utah	§	1000	20																
Yellow Jacket	*	1200	20	212 80 @ 83	145	80 @83	260	81 @83	210	86 @87½	330	81 @86	110	85 @86	1207	3	
Ynle Gravel	†	400	25																

NOTE.—†—California. *—Washoe. ‡White Pine. §—Ely District. ¶Eureka District. ‖—Idaho. ¦—Nearly.?—Over.

S. F. Stock and Exchange Board.

THUBSDAY, Dec. 19th, 1872.

The Stock Market this week hae manifested an agreeable upward tendency, after having been in a depressed condition for eome time past. Prices show a material advance over those of last week, and more descriptions are dealt in. This muet be very comforting to the brokere, as hut a light hnsiness hae been done for eome time past, while the tendency now indicates a still further advance.

The election of the Trustees of the Empire Mill and Mining Co., the resnlt of whioh will be found in another column, ie of intereet eince an entirely new Board was appointed. Thie is said to he the successful result of a combination, formed by R. N. Graves, Seth Cook, Flood & O'Brien and Archibald Boland, to wrest the control of the mine from the Union Mill and Mining Company. It ia also said that the Gould & Curry has chauged hands, and that Flood & O'Brien will have the management of it, with Robert Gravee as Superintendent. This takes two of the leading mines in Waehoe out of the hands of the old managers. As the Empire Mill mine is considered the key of Gold Hill the prohable future policy of the new Board is of eome interest.

The St. Patrick G.M. Co. have called a meeting on the 21st of Janusry to take into consideration a proposition to increase the capital etock from $500,000 to $2,000,000 in 20,000 shares.

The Kentuck Company will meet Jan. 2d, to eee ahout increasing their capital etock from $400,000 to $3,000,000 in 30,000 shares.

The Gould & Cnrry meeting to he held next Monday ie to concider a proposition to increaee the stock from $2,400,000 to $9,600,000 in 96,000 ehares.

On Friday the market was much bstter and stronger with a freer demand, than on the day previous. Belcher was $2 higher; Crown Point $2; Cons. Virginia, $1; Caledonia, $3; Hale & Norcroes, $2; Ophir, $3; Imperial 50 cents; Jacket, $4; Savage, $1; Hermes, $2; Raymond & Ely declined $4.

Saturday the market etill gained strength and sales were numerous at good prices. Belcher rose $1; Crown Point, $2; Cons. Virginia, $2; Chollar, $3; Confidence, $1; Imperial, $1; Empire Mill, $1; Hale & Norcross, $2; Ophir, $4; Overman, $4. Raymond & Ely was $8 lower.

On Monday Washoe stocks in particular took a rise and pricee were better than on previoue day.

Tuesday the market was steady and active. Belcher rose $1; Crown Point $4; Chollar, $1; Gould & Curry, $10; Ophir, $4; Overman, $5; Savage, $10; Jacket, $4; Raymond & Ely $1.

On Wednesday, pricee showed a still further improvement in the morning hut at the afternoon Board, quotations evinced a decline. Belcher was $2 lower; Crown Point, $3; Chollar, $6; Cons. Virginia, $4; Hale & Norcross, $6; Gonld & Curry, $6; Overman, $8; Savage, $11; Jacket, $3.

To-day the market was not very active and prices fell off a little from those of previous day.

Below will be found news from the prominent minee later than that in onr "Miniug Summary."

RAYMOND & ELY.—On the 12th $32,564 was shipped hy the Superintendent; on the 15th, $32,532 to latter of which add previous ehipments for the month $124,283, which makee a total of $156,831.85 equal to $10,455.40 per day.

SAVAGE.—For week ending Dec. 14th, 1,154 tons of ore were taken out, assaying $30.69 per ton; 1,049 tone were sent to mill.

BELCHER.—About 340 tons of ore are being extracted per day.

EUREKA.—The last weekly clean np was 1,409 onnces of amalgam from 6 day's rnn.

PHŒNIX.—On the 10th, ten tons of bullion wae shipped, asssying in gold and silver $338.90 per ton.

CHIEF OF THE HILL.—On the 16th $3,680 wae received from this mine. Total receipts for Novemher were $13,463.59.

PIOCHE PHŒNIX.—A letter of the 16th says that the ore will run from $300 to $400, and will require no sorting; the ledge is fully 6 feet wide.

CALIFORNIA NAVY CLOTH.—The Navy Department a few days ago awarded to a California woolen mills company the contract for 6,000 blue cloth pantaloons and 50,000 yards of blue flannel for navy use, a very gratifying occurrence, which is rendered decidedly remarkable by the facte that the goods mentioned are required to he delivered in New York city without charge for traneportation, and that the contract was obtained againet numerous Eastern competitors of the highest standing and largest facilities.

OUR MINING SHAREHOLDERS' DIRECTORY.

[COLLATED WEEKLY FROM ALL NOTICES ADVERTISED IN S. F. JOURNALS.]

ASSESSMENTS.

Name of Co.	Location.	Secretary.	S.F.Office.	Assm't.	Levied.	Deling't.	Sale.
Alamo G. & S. M. Co.	Washoe.	G. W. R. King.	411 Cal. St.	25	Nov. 2	Dec. 5	Dec. 26
AMAZON S. M. CO.	Ely District.	M. J. McManus.	609 Sacramento St.	10	Oct. 22	Jan. 6	Jan. 22*
Arizona & Utah.	Washoe.	Joseph Maguire.	415 Cal. St.	1 00	Dec. 7	Jan. 10	Jan. 30
Arkansaa M. Co.	Ely District.	J. H. Applegate.	723 Montg'ry St.	50	Nov. 6	Dec. 18	Jan. 10
Buckeye M. Co.	Washoe.	Chas. H. Fish.	419 California St.	2 00	Oct. 28	Dec. 2	Dec. 23
Baltimore Con. M. Co.	Washoe.	D. T. Bagley.	401 California St.	50	Nov. 12	Dec. 18	Jan. 11
BUNKER HILL Q. M. CO.	Cal	Charles H. Knox, pro tem.	19 Firat St.	10 00	Dec. 3	Jan. 8	Jan 27*
Calaveras G. M. Co.	Cal.	T. B. Wingard.	318 California St.	25	Nov. 14	Dec. 18	Jan. 7
Caledonia S. M. Co.	Washoe.	W. Wegener.	414 California St.	3 00	Nov. 9	Dec. 13	Jan. 3
Chapman M. & M. Co.		F. Swift.	415 Montgomery St.	25	Dec. 12	Jan. 20	Feb. 12
Con. Virginia M. Co.	Washoe.	D. T. Bagley.	401 California St.	3 00	Dec. 18	Jan. 20	Feb. 13
Esta Buena Con. S. M. Co.	Nevada.	A. Noel.	419 California St.	25	Dec. 16	Jan. 22	Feb. 12
"420" M. Co.	Washoe.	H. D. Howard.	423 Montg'ry St.	1 00	Nov. 23	Dec. 27	Jan. 14
Gen. Lee S. M. Co.	White Pine.	C. F. Schultze.	426 Montg'ry St.	1 00	Nov. 25	Dec. 30	Jan. 27
GOLDEN RULE M.Co.	Tuolumne Co.	J. B. Russell.	432 Montg'ry St.	50	Nov. 2	Dec. 3	Jan. 4 *
Granite Tunnel M. Co.	Cal.	W. G. Holmes.	443 California St.	6	Nov. 21	Dec. 24	Jan. 6
GREAT BLUE G. R. CO.	Cal.	Wm. H. Watson.	302 Montg'ry St.	10	Nov. 16	Dec. 18	Jan. 7*
Green Valley Blue G. Co.	Cal.	A. D. Carpenter.	Merchants' Ex.	25	Dec. 12	Jan. 11	Feb. 3
Hale & Norcross S. M. Co.	Wsaloe.	J. F. Lichtner.	438 California St.	5 00	Dec. 12	Jan. 15	Feb. 5
Harper S. M. Co.	Ely District.	J. R. Wilde.	306 Montg'ry St.	10	Nov. 23	Dec. 25	Jan. 13
HUDSON G. M. CO.	Cal.	J. L. King.	411 California St.	7½	Nov. 11	Dec. 16	Jan. 6
Hermes M. Co.	Ely Dist.	B. B. Minor.	411½ California St.	1 00	Nov. 7	Dec. 13	Jan. 6
Huhn & Hunt S. M. Co.	Ely Dist.	L. Kaplan.	Merchants' Ex.	1 00	Dec. 12	Dec. 18	Jan. 8
Ida Elmore M. Co.	Idaho	Wm. Willis.	419 Cali ornia St.	2 50	Oct. 25	Nov. 30	Dec. 21
INDUS G. & S. M. Co.	Virginia City, Nev.	David Wilder.	24 Merch't's Ex.	50	Oct. 19	Nov. 23	Dec. 16*
IVANHOE S. M. CO.	Ely District.	Daniel Buck.	331 Montgomery St.	1 00	Dec. 12	Jan. 19	Feb. 9*
Jewett G. & S. M. Co.	Washoe.	J. M. Bluffington.	Merchants' Ex.	5	Dec. 13	Jan. 17	Feb. 3
Monte Cristo Q. M. Co.	San Luis Obispo.	G. Staacke.	305 Sansome St.	2 00	Dec. 4	Jan. 13	Feb. 4
Julia G. & S. M. Co.	Washoe.	A. Noel.	419 California St.	2 50	Nov. 6	Dec. 10	Dec. 28
Justice M. Co.	Washoe.	R. Wegener.	414 California St.	1 00	Dec. 11	Jan. 14	Feb. 4
Kentuck M. Co.	Washoe.	F. Swift.	415 Montgomery St.	10 00	Dec. 12	Jan. 15	Feb. 5
Kentucky G. & S. M. Co.	Ely District.	J. P. Cavallier.	508 California St.	50	Dec. 7	Jan. 11	Feb. 1
Lady Emma M Co.		A. D. Carpenter.	Merchants' Ex.	25	Dec. 12	Jan. 11	Feb. 3
Lander Con. M. Co.	Eureka, Nev.	J. Lincoln.	332 Montgomery St.	10	Nov. 14	Dec. 16	Jan. 8
Lane & Kurtz Cariboo M.Co.	British Col.	B. B. Minor.	411½ Cal. St.	5 00	Nov. 3	Jan. 4	Jan. 25
McMahon S. M. Co.	Schell Creek.	G. R. Spinney.	320 California St.	25	Nov. 25	Dec. 28	Jan. 20
MAMMOTH BLUE G. CO.	Cal.	J. M. Bluffington.	Merchants' Ex.	5	Nov. 18	Dec. 18	Jan. 13*
Mammoth S. M Co.	White Pine.	J. L. King.	411 California St.	10	Nov. 12	Dec. 18	Jan. 8
Marlon S. M. Co.	Ely District.	L. Kaplan.	Merchants' Ex.	25	Dec. 9	Jan. 15	Feb. 5
Minnesota G. & S. M. Co.	Idaho.	Wm. Willis.	419 Cal. St.	50	Nov. 21	Dec. 28	Jan. 18
MINA RICA M. Co.	Placer Co., Cal.	G. R. Spinney.	320 California St.	30	Nov. 19	Dec. 23	Jan. 13*
MOCKING BIRD M. CO.	Nevada.	H. C. Kibbe.	419 Cal. St.	10	Dec. 5	Jan. 10	Jan. 31*
New York Con. M. Co.	Washoe.	H. C. Kibbe.	419 Cal. St.	25	Nov. 6	Dec. 12	Dec. 30
NORMAN G. M. Co.	Amador Co	W. H. Watson.	302 Montgomery St.	5	Nov. 11	Dec. 12	Jan. 4*
National M. Co.	Nye Co., Nev.	B. B. Minor	411½ California St.	50	Nov. 7	Dec. 13	Jan. 6
OLD PROVIDENCE M. Co.	Lassen.	Frank Swift.	415 Montgomery St.	25	Nov. 7	Dec. 14	Jan. 6*
Orient M. Co.	Ely District.	J. Maguire.	411 California St.	24	Nov. 26	Jan. 3	Jan. 27
Pacific Coal M. Co.,	Contra Costa Co.	A. Lachman.	First and Market.	10 00	Sept. 25	Nov. 13	Nov. 30
Petticoat M. Co.	Cal.	J. F. Lichtner.	438 California St.	50	Dec. 18	Jan. 20	Feb. 12
Pioche West Ex. M. Co.	Ely Dist.	T. W. Colburn.	419 California St.	25	Dec. 18	Jan. 27	Feb. 24
Pioche S. M. Co.	Ely District.	C. E. Elliott.	419 Cali. St.	1 00	Nov. 6	Dec. 12	Dec. 30
Phœnix S. M. Co.	Eureka District.	J. Maguire.	419 California St.	50	Nov. 8	Dec. 16	Jan. 6
Pacific Borax Co.	Nevada.	E. Leuba.	507 Montg'ry St.	35	Nov. 12	Dec. 12	Dec. 27
PIERMONT M. & M. CO.	Nev.	J. W. Clark.	418 California St.	50	Nov. 21	Dec. 30	Jan. 24
Placer G. M. Co.	Placer Co., Cal.	G. W. R. King.	411 California St.	50	Dec. 3	Jan. 6	Jan. 27
Placer G. M. & C. Co.	California.	G. W. R. King.	411 Cal. St.	25	Nov. 11	Dec. 14	Jan. 4
Pocahontas G. M. Co.	El Dorado Co.	D. A. Jennings.	401 California St.	50	Dec. 3	Jan. 4	Jan. 28
QUAIL HILL M. & W. CO.	Cal.	T. F. Cronise.	438 California St.	10 00	Dec. 4	Jan. 14	Feb. 4*
Red Jacket G. & S. M. Co.	Washoe.	H. C. Howard.	332 Montgomery St.	10	Dec 6	Jan. 10	Jan. 25
Rising Star.	Eureka Dist., Cal.	J. M. Buffington.	Merchants' Ex.	15	Nov. 22	Dec. 27	Jan. 13
Rising Star M. Co.	Idaho.	Wm. Willis.	419 California St.	1 00	Oct. 28	Dec. 3	Dec. 23
Sanderson G. M. Co.	Cal.	W. Stuart.	418 California St.	12½	Nov. 25	Dec. 27	Jan. 17
Savage M. Co.	Washoe.	E. B. Holmes.	401 Cal. St.	$10 00	Nov. 14	Dec. 17	Jan. 4
Schell Creek M. Co.	Schell Creek, Nev.	F. W. Van Winkle.	301 Cal. St.	10	Nov. 1	Dec. 3	Dec. 23
Senator S. M. Co.	Washoe.	Henry Revelle.	Stevenson Building.	50	Oct. 29	Dec. 2	Dec. 21
Silver Peak M. Co.	Ely District.	H. C. Kibbe.	419 California St.	50	Dec. 6	Jan. 11	Jan. 31
Sonth Chariot M. Co.	Idaho.	J. L. King.	411 California St.	50	Nov. 27	Jan. 6	Jan. 27
SPRING MOUNTAIN T. CO.	Nev.	J. M. Buffington.	Merchants' Ex.	20	Dec. 17	Jan 25*	Feb. 17*
St. Patrick M. Co.	Placer Co., Cal.	D. A. Jennings.	401 Cal. St.	2 00	Oct. 31	Dec. 3	Dec. 24
Star Consolidated M. Co.	Eureka Dist.	G. R. Spinney.	320 Montgomery St.	25	Nov. 1	Dec. 6	Dec. 27
Sierra Nevada M. Co.	Washoe.	W. H. Watson.	302 Montgomery St.	1 00	Nov. 26	Jan. 6	Jan. 27
Summit M. Co.	Amador Co., Cal.	Geo. Davidson.	731 Montgomery St.	25	Dec. 17	Jan. 20	Feb. 7
Tecumseh G. S. & C. M. Co.	Cal.	F. J. Herrmann.	418 Kearny St.	25	Nov. 18	Dec. 27	Jan. 17
Tehama Con. M. Co.	Schell Creek.	W. W. Stetson.	414 California St.	60	Nov. 27	Dec. 28	Jan. 18
Union Gravel M. Co.	Cal.	T. Derby.	320 Sansome St.	1 50	Dec. 7	Jan. 25	Feb. 15
U. S. GRANT M. CO.	Cal.	Enos Taylor.	226 Clay St.	50	Nov. 19	Dec. 30	Jan. 20
Utah S. M. Co.	Washoe.	W. E. Dean.	419 California St.	1 00	Nov. 7	Dec. 12	Jan 4
VIRGINIA CON. M. CO.	Cal.	T. B. Wingard.	318 California St.	2	Dec. 11	Jan. 20	Feb. 10*
Washington & Creole M. Co.	Ely Dist.	F. J. Cleary.	Merchants' Ex.	50	Dec. 21	Dec. 26	Jan. 17
Wellington M. & S. Co.	Utah.	R. Wegener.	414 California St.	10	Nov. 12	Dec. 18	Jan. 7
War Eagle M. Co.	Idaho.	C. F. Balcolm.	426 Montg'ry St.	2 00	Nov. 4	Dec. 10	Jan. 6
Ward Beecher Con. M. & M. Co.	Nev.	D. A. Jennings.	401 California St.	1 00	Nov. 21	Dec. 28	Jan. 22
YULE GRAVEL M. CO.	Cal.	Wm. H. Watson.	301 Montgomery St.	20	Dec. 18	Jan. 18	Feb. 10*

MEETINGS.

Name of Co.	Location.	Secretary.	Office in S.F.	Meeting.	Date.
Amador M. Co.		Wm. MacKintosh.	402 Montgomery St.	Special	Dec. 31
Cameron G. M. Co.		F. L. Kreeder.	515 California St.	Annual	Dec. 26
Con. Virginia M. Co.	Washoe.	D. T. Bagley.	401 California St.	Annual	Jan. 9
Eagle Quicksilver M. Co.		Wm. H. Watson.	302 Montgomery St.	Special	Feb. 21
Gonld & Curry M. Co.	Washoe.	A. K. Durbrow.	Merchants' Ex.	Annual	Dec. 23
Gould & Curry S. M. Co.	Washoe.	Called by Trustees.	Merchants' Ex.	Special	Dec. 23
Indus G. M. Co.		Called by Trustees.	Merchants' Exchange.	Special	Jan. 6
Kentuck M. Co.	Washoe.	Called by Trustees.	415 Montgomery St.	Special	Jan. 2
Lemon M. & M. Co.			608 Merchant St.	Special	Jan. 6
Loo M. Co.	Washoe.	C. J. Eaton.	Express Building.	Annual	Dec. 28
Red Mountain M. Co.		A. W. Clark.	418 California St.	Annual	Dec. 21
Sanderson G. M. Co.	Cal.	Wm. Stuart.	418 California St.	Annual	Dec. 26
Standard M. & M. Co.		F. L. Kreeder.	515 California St.	Annual	Dec. 24
St. Patrick G. M. Co	Cal.	Called by Trustees.	401 California St.	Special	Jan 21
Ward Beecher S. M. Co.	Nevada.	C. F. Balcolm.	426 Montgomery St.	Annual	Jan. 13

LATEST DIVIDENDS—(Within Last Three Months.)

Name of Co.	Location.	Secretary.	Office in S. F.	Amount.	Payable.
Belcher M. Co.	Washoe.	H. C. Kibbe.	419 California St.	$3.00.	Sept. 10
Cameron Diamond Coal Co.	California.	F. B. Cromwell.	Cr. Harrison and Spear.	½ per cent,	Nov. 1
Cederburg G. M. Co.	California.	D. M. Bokee.	420 Montgomery St.	50c.	Nov. 30
Eastport Coos Bay Coal.	Oregon.	I. L. Pool.	Merchants' Ex.	$5 00	Dec. 10
Eureka G. M. Co.	Crasa Valley.	R. Wegener.	414 California St.	$1 00	Dec. 10
Mahogany G. & S. M. Co.	Idaho.	T. J. Evans.	402 Montg'ry St.	$1 50	Aug. 7
Meadow Valley M. Co.	Ely District.	T. W. Colburn.	409 California St.	1 00	Dec. 16
Raymond & Ely M. Co.	Ely Dist., Nev.	A. J. Moulder.	419 California St.	$5 00	Dec. 10
Pioche S. M. Co.	Ely Diat., Nev.	C. E. Elliot.	419 California St.	$1 00	Aug. 10
Providence G. & S. M. Co.		J. M. Buffington.	Merchants Exchange.	$1 00	Nov. 12

——* Advertised in this journal.

SOUTH AMERICAN MINES.—An *Alta* correspondent writing from Lima gives the following item in relation to the minee: The Mejillonee Mining District is proving to he rich beyond all expectation, and the fabulous amount of silver which has been and ie heing discovered there hae euddenly rendered the locality of great importance. The yield of ore and the richness thereof are heyond all expectation, and the mines are heing worked in the face of the moet terrible difficulties, want of water heing the most serious. As moet of the mines helong to Chilenos, aud by far the larger proportion of the workmen are likewiee from Chili, while the government (snch as it is) ie Bolivian, you can readily imagine what a prolific field there is for trouble, and how little likely it is that peace can reign while both countriee claim the territory.

LAKE SUPERIOR MINES.—The Marqnette *Mining Journal* says that there are qnite a nnmber of important new mining movements on foot some of which involve sales amounting to several hundred thousands of dollars, but none of them are far enough advanced to admit of announcement. They all cotemplate the uee of Eastern capital for the immediate development of mining resources.

MINING SUMMARY.

THE following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

California.

CALAVERAS COUNTY.

NEW MINE.—Calaveras *Chronicle*, Dec. 12: Mr. Englehright ie prospecting some quartz on the Mokelumne Hill road, which promisee to he valuahle. The vein ie 3 ft. wide, and abounde in sulphurets.

WEST POINT DIST.—Calaverss *Chronicle*, Dec. 14: The Blazing Star is turuing out very handsome ore, and recent explorations have determined that an extensive body of valuable ore exists south of the main shaft, below water level. The Seminole Co. are repairing their over-ehot water wheel, and the mine will be cleared of water eoon. Explorations in the Lone Star have developed an unlimited supply of fair milling ore.

BLUE MOUNTAIN DIST.—The Heckendorn cleaned up a run of 48 houre and to judge from the bulk of the amalgam, the ore must he yielding very handeomely.

A RICH DISCOVERY.—Calaverae *Citizen*, Dec. 14: Laet week John Andereon discovered a em

MONTEREY COUNTY.

Quicksilver. — Castroville *Argus*, Dec. 7: 60,000 lbs. of quicksilver were shipped from the New Idria Mines to Hollister, during Nov.

PLACER COUNTY.

Green Mine.—Placer *Argus*, Dec. 12: The ledge will average two ft. in width throughout. They are running the mill on a fair average of the ore, which is a high grade. The Co. are preparing to sink the shaft to the depth of 300 ft.

PLUMAS COUNTY.

Struck It.—Quincy *National*, Dec. 7: Bidwell & Co. have completed their tunnel in the Greenville, and find the ledge richer than ever.

Betterton.—Mr. Betterton has recently resumed operations, and the ledge looks splendidly.

PLUMAS COUNTY.

Maxwell & Co.—This Co. have commenced operations on an enterprise, which bids fair to be very profitable. The Co. have claimed the water of Spanish Creek, and their ditch leaves the river at the falls, about a mile above the mouth of Blackhawk. The ditch is of a capacity of about 4,000 inches. The first point which the Co. intend to work, is known as Brown's point. Good prospects have been obtained at this place, and it is thought that a large amount of paying ground will be worked here. The ditch will be extended down the river as fast as possible, as it is known that several high bars under the line of their survey will pay well for working.

SISKIYOU COUNTY.

Hombco.—Yreka, *Union*: Bender has bought out Rabbit's interest, and Pugh the interest of Neill in Lawson Gulch.

Parker, and others of Little Humbug intend to open and prospect claims on the Klamath.

Foug & Co., are erecting a hydraulic.

The Klamath river and bars are claimed for 15 miles, counting each side of Delaney's recent rich strike.

The Eliza Co. is running a tunnel for the purpose of obtaining a further supply of water.

Nevada.

ELY DISTRICT.

Bullion.—Pioche *Record* Dec. 8: The shipment for the week amounts to $73,560.58.

Silver Peak.—The ledge improves as sinking progresses. The Supt. leaves for S. F. tomorrow to make arrangements for getting hoisting works for the Silver Peak and stamps for the Condor mill. The shaft is 150 ft. in depth and 150 tons of rich ore has been placed on dump. Eight men are constantly at work sinking an incline, and Friday afternoon a ledge over 6 ft. in width presented itself. Ore was placed in the forge and large globules of silver came to the surface. The rock is very rich.

Pacific Tunnel.—The work is being pushed rapidly. The shaft in the first ledge is down about 40 ft., and the ledge is looking very well. The whole work employs about 18 men.

Jolly Traveler.—The shaft has now gained a depth of 120 ft., different strata of ore have shown themselves throughout the mine while sinking. It is proposed to sink to the depth of 200 ft. and drift to the ledge.

Pioche Phenix.—New shaft down 160 ft. and well timbered. Hoisting work will be completed in 6 days after all the machinery arrives. The ore in the old works have improved very much the past week. The ledge is 5 ft. wide, the greater portion of which will average $250 per ton. Hoisting 8 tons per day.

Prairie Queen.—Showing a ledge at the top 3 ft. wide, and following almost to its depth, now 50 ft.

Mazeppa.—The mine is down 180 ft. It is proposed to make the first station at the above depth. Raising of ore will be commenced soon.

Mahon.—Indications in the shaft are more encouraging than they were a week ago. The ledge shows improvement.

Amador Tunnel.—The tunnel has been driven in 375 ft. and 60 tons of ore are on dump. Drifting is constantly going ahead. The ore being raised comes from the winze 80 ft. below the tunnel. A fine ledge has been developed and it is the intention to drift on the ledge and raise the ore to the surface.

Grey and Bishop.—Two hundred ft. has been sunk, some fine ore has shown itself and the prospects are decidedly flattering. Three shifts are kept constantly at work—12 men in all.

Newark.—Work in all portions of this mine is being pushed ahead.

Sunbeam is 210 ft. in depth; the Supt. proposes to make this depth the first station. Ore has been shipped lately to the Magnet mill at the rate of 8 tons per day. The last bar returned, proved itself to be $166.46 gold and $1,904.48 silver, making a total of $2,071.24.

Ocean Bell.—The owners have concluded to start the work again. They have sunk a shaft 160 ft. Sinking will continue until 200 ft. is reached, when drifting will be commenced.

Excelsior.—Shaft has reached 175 ft. The ore is entirely free and the east winze brings forth the best ore; 10 tons are being raised per day.

Chief East Ex.—Drifting east on the 90-ft. level. The ledge has improved very materially during the past week.

Caroline.—Shaft down 100 ft. and commence timbering to-day. A contract has been let to sink and timber 50 ft. more. At the bottom seams of quartz appear. From the pitch of the ledge in the old works they expect to strike it in the new shift by the time 50 ft. is sunk.

Chapman.—Twenty tons of first-class ore is being raised daily and shipped to the American Flag mill for reduction. The mill will commence crushing about the 15th, when upwards of 300 tons will be at the mill. Arrangements have been completed for the erection of hoisting works.

Chief of the Hill.—During Sept. there was shipped $10,102.84; Oct., $11,337.94: Nov., $13,462.40, making a total of $34,903.18.

Montana.—The contractors have reached a depth of 72 ft. Ore in small quantities has been opened up and a few days more will show a fully defined ledge of rich ore.

Pioche Champion.—The Supt. has succeeded in getting it to the depth of 185 ft. He is working 3 shifts and keeps constantly sinking.

Empire.—The Empire, Ophir Hill, is looking well. We mentioned some months ago a big strike into rich ore. The Empire has a strong ledge in the 8th level, and the rock is good for $20 a ton.

Rich Strike in the Pioche Phœnix.—Yesterday a very important strike was made in the Pioche Phœnix mine. It was struck in a vein running parallel to the Lightner shaft. Assays were made yesterday of the ore taken from this new strike, and it showed a yield of $3,500 to the ton.

HUMBOLDT.

Relief Dist.—Unionville *Silver State*, Dec. 7: The Batavia & Pacific Co.'s mill is running steadily. Last week the Co. shipped 112 lbs. of bullion, valued at $1,800, the result of one week's run with 5 stamps.

Dun Glen.—The Empire is worked through a tunnel which intersects the ledge 200 ft. from the surface. A drift has been run on the ledge from the point of intersection. The ledge in this drift is 2½ ft. wide. It contains rich ore, the entire ledge averaging $135 per ton.

On the Gem at the eastern end of the lower level the ledge is displaced by a cross course, and one half of the working force is engaged in drifting to find the ledge east of the fault. Two men are engaged in extracting ore, and one shift is drifting west of the old works. Three or four tons of second-class ore worth $150 per ton, and a few hundred pounds of first-class ore worth $1,200 per ton, are on dump ready for shipping.

On the Tallulah mine 4 miners are employed. Five tons of first-class ore are on dump.

Trinity.—Reese River *Reveille*, Nov. 30: The richest ledge of silver and galena ore known to exist in this country was struck in the Trinity, Galena, yesterday.

Kegs Sugar, 3,048; Bags Sugar, 1,124; Bbls. Molasses, 428; bbls Tallow, 270; bbls Beef, 33; Hides, Green and Dry, 688; Goat Skins, 4,672;

REESE RIVER.

Reveille, Dec. 7: The Monitor mill has been running steadily with satisfactory results.

El Dorado mill is going up fast.

Monitor Co.—Have run their tunnel No. 2, 500 ft., cut the vein, drifted northerly through some good ore 70 ft; have about 50 ft. farther to drift to cut the main ore chimney. Have raised from lower tunnel a chute and connected with upper works; also drifted south on lower level 20 ft., and sinking a winze. Taking out very fine ore from upper levels. Working 50 men.

Belmont Co.—The new pump keeps the water down and the lower levels are being run each way with flattering prospects. Working 30 men.

El Dorado South Con. Co.—Large quantities of ore up in the old workings of the El Dorado are ready for stoping. The new 340-ft. level, both north and south, is in good ore. In this level, a winze is being sunk in good ore, to intercept the 400 ft. level which is being pushed through to that point.

Work in the Arizona goes ahead. Some fine chloride has been found south of the Miller incline.

El Dorado North Co.—The contractors have the vertical shaft down 75 ft; progressing about 2 ft. per each shift.

Combination Co.—Lessees are taking out very rich ore from the Transylvania. Working 20 men.

Josephine Con. Co.—Capt. Stewart thinks he has a big thing in the Josephine, and he is going down with his shaft earnestly.

WASHOE.

Piotou, Gold Hill *News*, Dec. 14: Shaft 160 feet deep. The drift north from it for the ledge is in 50ft. The ledge is 7ft. or more in width, and assaying well, being silver ore, with about the same proportion of gold as that of the Belcher.

Mint.—This mine promises to be one of considerable importances before long. It is situated in the ravine below the Tunnel toll-road, and about half a mile from the Savage. The ledge is very clearly defined, about 7ft. wide, and composed of promising quartz, which assays very well. A shaft is now 57ft. deep.

Caledonian.—The body of water tapped by the south drift on the 140-foot level of the new works, is drained so as to no longer interfere with operations in the mine. The north drift on the 400-foot level is cleaned out and repaired to within a few feet of the point reached before the men were driven out by the water.

Consolidated Virginia.—The new hoisting works are about finished. The incline is down 68ft. below the 500-foot level in good sinking ground.

Hale & Norcross.—No developement of importance has been made in this mine during the past week.

Globe.—The main west drift is still driven steadily ahead, though had air at times interferes with work. The ore body in the raise is still looking finely and promises fine developments.

Chollar-Potosi.—Daily yields 130 tons of ore, the average assay value of which is $31 per ton. The ore breasts are still holding out and looking moderately fair. The new patent air compresser is in place ready to start up.

Julia.—Owing to the breakage of the machinery yesterday all work in the mine is suspended for the present.

Gould & Curry.—The main incline is down 80ft. below the 1600-foot level, making fair progress. The main east drift, at the tenth station is in 400ft. The main east drift at the eleventh station is in 120ft. with strong indications of cutting the wall of the ledge soon.

Savage.—There is no change of consequence in the daily yield or the quality of the ore extracted since our last report.

Woodville.—The works were again started up last Wednesday. The ore breasts are looking and yielding well as usual.

Belcher.—Daily yield 350 tons. Drift north from the east drift at the 850-ft. level in 323 ft. Main incline down 159 ft. below the 1,100-ft. The station for the 1,200-ft. level will be commenced soon. Winze 200 ft. south of the Crown Point line, to connect with the 1,100 and 1,200-ft. levels, down 32 ft. in fine ore. The hoisting machinery is working well

Overman.—The new machinery is so nearly completed that the work of freeing the shaft from water will be commenced in two or three days at farthest.

Crown Point.—The 1,300-ft. level opens out richer and richer the more it is worked, the cross-cut from the east winze being in over 70 ft. in fine ore, with no sign of east wall. Preparations are being made to take out ore from this level. The other parts of the mine are looking and yielding well.

Silver Hill.—On the first level the north and south drifts are being continued in the ore vein, both drifts in pay ore. The new pump is in place and the sinking of the shaft is again resumed.

Occidental.—The lower tunnel is being continued in the ore vein. The quartz through which it is passing, is of very low grade. The stream of water lately encountered in this tunnel continues to flow.

Sierra Nevada.—Daily yield from 40 to 50 tons of milling ore.

Insurance.—The shaft is all in ore of good character. The ore is looking much better than heretofore, filled with black sulphurets, and assays well.

Utah.—No work has been done in the new shaft the past week, as wood cannot be procured to run the machinery.

Imperial-Empire.— No change of material interest to note.

Baltimore Cons.—Shaft down 364 ft., making a progress of 16 ft, during the week. Drift in 138 ft., having made 20 ft. progress. Both shaft and drift still in hard blasting ground.

Senator.—This mine which was stopped for a week for want of a supply of wood was again started up to-day.

Yellow Jacket.—Nothing new to report since our last.

Knickerbocker.—Main west drift in 410 ft., with the face in hard working porphyry.

Jacob Little.—Work progressing as usual.

Arizona.

Prescott *Miner*, Nov. 30: The Vulture Co. will soon conduct water to the mine, or construct a railroad from mine to mill. They also design adding as many more stamps and other appliances to their mill as will enable them to crush and work 100 or 150 tons of raw ore every 24 hours.

P. W. Smith, who owns ground on the Vulture, has his mill almost ready for crushing.

At Weaver, the ore of the Marcus Co. is paying well.

Work will be resumed at Big Bug, and other camps near Prescott soon.

Colorado.

Boulder Co.—Operations are generally very successful and are steadily increasing in importance. The Red Cloud, Gold Hill, a gold bearing vein, produced in 4 months $100,000. The last month, its yield footed up $90,000.

Pelican, Central City *Herald* 4th: The owners have driven five levels at different elevations in upon the vein. The average width of the crevice is about 6ft. and the pay vein of the richest material goes from a foot upward. One shaft sunk from the lower level, has developed a width of crevice, during past the week, of 9ft, at a depth of 50ft. This lower level has been driven a length of 650ft. and some 1,800ft. of levels have been opened out altogether. Another tunnel is driven in at an elevation of 75ft. above the lower, and has a length of 600ft.

On the Zillah lode, there is one level opened and about 100 fathoms of ore have been stoped out.

Work will be commenced this week on another tunnel and level at a lower point on the Pelican than any of the present workings.

From May 1871 to Nov. 1st, 1872, over $580,000 has been taken out and this while the work of developing simply has been going on.

During Nov. 1872, the total receipts for ore treated and sold was $65,000.

Leavitt.—We saw a beautiful retort this morning valued at $12,000. The yield of 1,200 tons of smelting ore has been raised from the shafts during the same time and lie on dump ready for shipment.

Idaho.

Silver City *Avalanche:* Ida Ellmore.—New and extensive bodies of ore are being found in several of the old levels running ahead north. The main shaft will be down for the 9th level in a few days, and the indications are very favorable for striking a large body of ore in this level.

Golden Chariot.—The 5th and 6th levels south are rapidly improving as they pass the line of the gulch on the surface; 10 stamps of the Ellmore mill are steadily running on their ore.

Red Jacket.—Fine looking ore is being taken from the stopes above the adit-level. Drifts have been commenced in the let level, running both north and south of the main shaft, showing high grade ore in both. We were yesterday shown a large mass of ore from the deepest portion of the mine, in which free gold could be seen sticking all over it.

Mahogany.—The 6th level south drift is in 170 ft., showing good ore. The 7th level winze is down 33 ft. in fine ore. The ore bouse is full of ore.

South Chariot.—The indications are that they are coming upon a good body of ore in the 3d and 6th levels, both of which are in fair milling ore. Preparations are being made to start up the Co.'s mill on ore from this mine.

Minnesota.—The 4th level drift has cut a rich chimney of ore going north. The vein is from 20 to 24 inches in width, of ore that will pay $50 per ton. The stopes from the south winze look excellently, and yield 10 tons per day, which is being worked at the Cosmos mill. The shaft is about completed for the 5th level, and the indications are that this level will open out into a big mine.

Empire.—Is turning out a large amount of ore, on which the Owyhee Co.'s 20-stamp mill is running. The ore-house has again been enlarged. The shaft is down 60 ft. for the 4th level, and the 3d level drifts are in 50 ft. each way from the shaft.

Idaho.—We yesterday saw 2 gold bricks, at Findley and Co.'s bank, which together weighed about $16,000 worth. They were taken from the amalgamators after a run of 6 days. The 6 days of the week before gave over $12,000 or 28,000 for 12 days run.

Utah.

Beaver Lake Dist.—Utah *Mining Journal*, Dec. 12: The San Francisco has several prospect shafts sunk to the depth of from 5 to 25 ft. In the shaft there appears to be a good showing of mineral. On the several dumps of this mine there is from 25 to 30 tons of ore which will average $250 to $300 to the ton. The character of the ore is galena, chloride, carbonate, black sulphurets and hornsilver mixed.

Big Mountain Lode.—The shaft is down about 10 ft.

Fairview Mine.—Prospect shaft is down 18 ft. and shows a large deposit of mineral. Ore will assay $80 per ton.

Great Western Mine.—The prospect shaft is down about 8 ft. and the vein appears to be from 8 to 10 inches thick.

Emma.—Those who have been there say that the props in the Emma are not sufficient and that it is likely to cave in again when the ground dampens in spring. Another strike of carbonate ore has been made.

Bingham Canon.—Salt Lake *Tribune*, Dec. 7: Smelting works of the Utah Co. consist of two vertical Blast Furnaces, using steam as a motive power. The mines are 5 in number, the Belebazzar, Dartmouth, Red Warrior, Utah and Portland. The veins of ore contained run in almost unbroken parallels with each other and in each close proximity that one shaft with intersecting tunnels will be sufficient for the proper working of the mines. A new deposit of ore has been opened in the Dartmouth within a few days, which looks very promising. The furnaces are capable of producing seven tons bullion per day, and are in successful operation. The charcoal used as fuel is obtained chiefly from Truckee, California, and the iron ore for flux from Wyoming Territory. The completion of the Railroad from Sandy Station, U. S. R. R., to these works will add materially to the economy of the reduction of ores, The management is vested in J. R. Murphy, Esq., and Philip Eagle, Esq., Resident Secretary.

Ascending Porcupine Gulch bearing southwesterly to the divide between Bingham and Butterfield canons, a rolling table land is reached. Here we find the Sheridan Hill. The development consists of a shaft 150 ft. in depth and a horizontal tunnel 180 ft. in length, showing a vein of carbonate ore about 12 ft. in width. The Silver Hill a short distance south consists of a large body of ore of good quality.

Salt Lake Mines.—*Tribune*, Dec. 7: The Delaware, is opening well. The vein is about 6 ft. of quartz, averaging from $10 to $200 per ton. The Elkhorn is about 20 ft. wide, and assays from $10 to $3,000 per ton. There is also some of the best horn silver and blue sulphurets in this mine that there is in the camp.

The Utah Southern Railroad.— This important enterprise, which we have several times mentioned in these columns as ultimately designed to be extended to San Diego, is being prosecuted with a great deal of energy. Forty miles have already been finished, from Salt Lake to Leiby, and cars are now running between the two points. In addition to this, several branch roads, aggregating thirty miles in length, have been constructed, connecting the main trunk with the most important mining districts. It is believed that when 100 miles of this Utah Southern Railroad is completed, the entire trade of South-eastern Nevada will be diverted *via* Salt Lake City. The charter terminus of the road is at the head of Navigation on the Colorado river. The building of the link from that point to San Bernardino will speedily follow, and then Salt Lake will have a through-road to the Pacific at the Bay of San Diego.—*San Bernardino Guardian*

Visit to the Crown Point Mine.

Saturday afternoon, white toiling up the steep acclivity leading to the Divide. on onr return from a brief visit to Gold Hill, we were seized with a strong desire to visit one of the principal mines of the Comstock lode, never having done so before. Accordingly we retraced our steps and after working our way through a labyrinth of timhers consisting of trestle hridges, car-tracks and dumps, we eventually reached the

Unpretentious Looking Office

Of the foreman of the Crown Point mine. The office is a small sized building with a dingy appearance, not unlike that of the old Erie depot of New York City. With whatever eloquence we were master of we solicited of Mr. Kellogg, the foreman, permission to visit the mine, assuring him that we did not come as an emissary of capitalists, and that we would not carry off any rock. Mr. Kellogg kindly consented to gratify our curiosity and led us to a dressing-room where we were told to exchange our store clothes for a pair of overalls, a flannel shirt and a dilapidated felt hat. In a few minutes we emerged from the cloak-room looking for all the world like

Honest Miner's.

For several minutes we stood by the shaft and watched with some misgivings the cages reeking with moisture as they came up with their load of ore or descended with their complement of men.

Changing Shifts.

An animated scene can always he witnessed at the time of changing shifts. Hundreds of men are collected around the shaft at that time, each one eagar to be the first to mount the cage as soon as it comes to the surface. Ordinary size cages, when densely packed, will hold about eight men. Considerable time is necessarily occupied in making these changes. When our turn came to go down we were placed in charge of a guide who was considerable amused hy the tenacity with which we clung with hoth hands to a supporting rod over our heads. During our descent he amused himself by singing snatches from Cornish songs, manifesting the greatest nouchalance, even to the extent of carrying his hands in his pockets. We, too, were soon disarmed of fear, and began to enjoy our ride in the "elevator" immensely. We could only judge of the number of stations passed hy flickering lights, which were visible only for a moment. At 1,000 feet beneath the snrface our cage came to a stand-still and we were told to disemhark. The time occupied in making the descent was between two or three minutes. After following our guide for some distance through a circuitous passage, in which we had the misfortune to bump our head repeatedly against the timhers overhead, we were eventually turned over to

Pluto,

In the person of G. D. Peters, underground foreman. To the kindness of this gentleman we were indebted for onr first opportnnity of witnessing mining operations underground. That the Crown Point mine contains an immense body of rich ore, was apparent even to our uneducated vision. A wide mineral belt extends downward from the 900 to the 1300-foot level, and perhaps further, with ore enough in sight to last for two or three years to come. Directly south of the Crown Point lies the Belcher, with more silver hid away in its recesses than ever the Inoas were reputed to possess. From the 1,000-foot level upward, in company with the foremau, we visited gallery after gallery, where hundreds of miners on either side were busily engaged in liherating ore with pick and drill. As regards climate, all of the zones seem to he represented in the mine. Upon our remarking to a half-naked miner at work on the 1,000-foot level that it is rather warm, he replied that it was comparatively cool in that locality. From the fact that we did not experience any difficulty in hreathing, we infer that the mine is well ventilated.

Timbering.

We understand that it is the practice in workiug out mines to commence at the hottom of the ore deposits and work upwards. The ore which is taken out on one floor is sent down to the next floor in a chute, from which it finds it way to the main shaft in cars. From 1300, 1200 1100 foot-levels, however, the ore is sent up to the 1000-foot level on a "giraffe," which runs on the incline. Drifting and timhering are inseparahle associated with each other. The timber commonly used in the mines are a foot square and about 7 feet in length. Fourteen sections or floors would he required to reach from one level to another. We were astonished to witness the enormous pressure to which the timhers in the lower levels are snhjected. Until filled in with waste rock, we were informed that as a general thing they do not stand plumb over three days. Several of the cross pieces we noticed were snapped off like a pipe stem. In many places a wooden cap a foot in thickness would be compressed to one-third of its original size, its fibres acquiring the consistency of lignum vitæ. The

Miners Hammering Away.

At the magnificent breasts of ore on either side of the main tunnel seemed to be a rollicking, industrious set of fellows. On their part we discovered no attempt at shirking. At every stopping place, in onr travels, we were asked to take a drink—of ice water with which the workmen are plentifully supplied. While stopping to chat with some of the men, a blast was exploded, as we supposed in close proximity to us, which caused us to take an immense leap into the air much to the delectation of the sappers and miners. While passing along a small tunnel we encountered an ore car from the Belcher, and learned that the Belcher people are allowed to pass their ore to the surface through the Crown Point territory. A little further on, in a comfortable stable, we noticed one of the Belcher mules, looking as fat, sleek haired and vicious as if working above ground. We judge that his eyesight is not seriously impaired from his long stay underground, for the reason that the tunnel in which he works is generally kept illuminated.

Reminscences.

Our good-natured guide, while taking us through the mine, entertained us with his historical reminiscences, every set of timhers seeming to be associated with eithor plesant or sorrowful recollections. "Right here, is the place where ore was struck," saidhe. (We didn't know exactly where we were at that particular time.) "If a person on the outside could have known about it he could have made a handsome fortune in no time." In another part of the tunnel he showed us where poor Hawkins got hurt, the other day by the letting off of a blast as he was passing along the tunnel. Our guide informed us that if the timbers of the tunnel could he exposed to sight in their present position they would present the appearance of the trestle-work of an immeuse bridge rnuning in a northerly and southerly direction. We parted company reluctantly with our pilot at the shaft and ascended to terra firma without further adventure, having had a very enjoyahle excursion.—*Virginia Enterprise.*

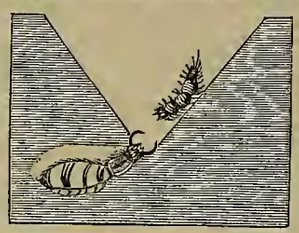
California Shad.

Those interested in the subject of fish culture will be pleased to know that the effort to stock our rivers with shad has attained the gratifying heginning of success. In June, 1871, the State Commissioner placed in the Upper Sacramento a large number of shad, procured of Seth Green, of New York. It was well known that these fish would migrate to the sea in the autumn, and also known that when old enough to spawn would return to fresh water, but it was not known as to whether they would return prior to that time, or whether the migratory instiuct was founded solely on the uecessities of spawuing. The fish were placed iu the river with but slight expectation of seeing any result of the effort for three years at least, at which age they first spawn. Australia planted her waters seven consecutive years before a single shad was caught therein, but the effort in California was destiaed to bear early fruit. Seth Green, who under the direction of the commission imported the fish offered a reward of $50 for the first shad caught ia the river. It now appears that the reward hss heen earned, though not yet claimed. Last summer two Indians caught in their traps two fish of a species wholly new to them. They were caught in the upper Sacramento, about four miles from its confluence with Pitt river. The Indians, not a little surprised at the capture of the finny strangers, and having never met their kind before, took them to Mr. Elmore, who resides on the river at that point. Mr. Elmore, suspecting the truth, took them to his neigher Hovey, who having resided on shad streams at the East, was competent to expert the case, and who at once pronounced them genuine shad. The Commissioners regard the story of this capture as wholly reliable, and feel safe in declaring the effort to stock the river with this valuable species of the finny tribe as successful. Apropos of this it may he stated that the Commissioners have recently placed ten thousand trout in the South Yuba, near the headwaters of that stream; also, a number of speckled trout ia the uorth fork of the American. Somebody claiming to be authority in the matter, has declared that an acre of water is equal to an acre of land in producing food to sustain humau life. If this he true, fish-culture is worthy the attentiou it is receiving.—*Sacramento Record.*

The Ant Lion.

In a late number of the *American Naturalist,* Mr. J. H. Emerton describes at length the peculiar habits and structure of the Ant Lion *(Myrmeleo immaculatus).* It appears that this ravenous little insect is endowed by nature with superior intelligence, and displays great skill and cunning in the entrapping and securing of its prey. Having determined npon a suitahle site, generally a clear sandy space under the shade of some shruh or boulder, it hegins the construction of a miniature pitfall by first thrusting its long jaws and fist head underneath the grains of sand, and then by a sudden upward jerk tossing them several inches heyond the edge of the pit. This operation is repeated until a funnel-shaped hole is excavated, as shown in the cut, the sides of which are as steep as the shifting nature of the sand will allow.

When completed, the ingenions little builder conceals his body at the hottom leaving only the extended jaws exposed. Here he awaits patiently until the unconscious victim, generally some smaller insect, approaches the edge of the ambuscade, wheu the disturbance of the saud above warns the watcher below, and he begins to toss up the earth from beneath, causing the sand on the shelving sides to slide



THE ANT LION.

down toward the centre, bearing with it the prey to within reach of the extended jaws. The lower sides of these are provided with tubular ohannels, that serve as ducts to convey tbe blood of the victim to the mouth of the captor.

Should the insect escape the first attack, and attempt with all haste to clamher up the sides of the pitfall, the ant lion immediately throws up a shower of sand and brings its victim dowu again. After sucking the body dry, the carcass is tossed beyond the limits of the pit, which is at once repaired, and made ready for the approach of avisitor. second

Ramie and Jute.

In the Report of the Commissioner of Agriculture for 1872, just received, we find au interesting allusion to the value and growth of two of the more recently introduced textile plants, Ramie and Jute, and speaking of them as likely to prove of importance, particularly to the Southern States; and as we have the climate of those States and some advantages they have not, for the growing of the plants alluded to, we extract from the Repor as follows:

Ramie and jute, fihrous plants which promise great value, have recently been introduced into the United States, and to some extent have been distributed hy the Department in the Southern States, the climate of which is alone adapted to their successful production. Of the former, little progress has been made in its use, because machinery has not been invented by which its fiber may be separated; bnt its value, in view of its fineness, strength, and beauty, will yet command an exercise of ingeuuity which will make its culture a profitahle industry.

Tho latter has already taken its place in the manufactnre of carpets and other fabrics as a snbstitnte for cotton, wool, flax, and hair. Each of these, I may safely predict, is destined to occupy an important place in the products and manufactures of this country; and it is not the least important cousideration that they may serve largely to diversify the crops of our Southern States, a subject which has commanded much of my attention, hecause of my conviction of the many beuefits which will result therefrom.

Where to Advertise.—A weekly family paper has great advantages for advertisers over a daily. It is generally on the table ready to be perused hy one and another for a week, and often several weeks at a time. Each copy is also read by a greater number of persons, often being loaned from family to family. Besides, the uumber of advertisements heing limited and generally of an interesting character, the chauces of each one being read are much greater than in a daily. A weekly also reaches all classes in all sections, who can scarcely be reached in any other way, as they do not take any other papers. These facts will be evident to any one who reflects upon the snhject.

Remarkable Expedition.

English Savans to Circumnavigate the Globe.

The expedition about to be dispatched by the British Admiralty to undertake a scientific circumnavigation of the globe is described at great length by *Nature.* The vessel set apsrt for this is the oorvette *Challenger,* of 2,306 tons, under the command of G. S. Nares, R. N., well-known as the author of a valuable work on sesmanship, who has seen a great deal of active service. formerly in Arctic exploration, and latterly in the Suez survey, which he now leaves to head this expedition. On the scientfic staffare, Prof. Wyville Thompson, F. R. S., as director; J. Y. Buchanan, of Edinburgh University, chemist; H. N. Moseley, of Oxford, naturalist; Dr. Von Willemoes Suhm, of Mnnich, naturalist; John Murray, of Ediuburgh University, natnralist. The three naturalists take charge respectiyely of the invertehrata, vertebrata, and botany. Prof. Thompson assumes the charge of the general zoological work. A photographer is also assigned to duty. The whole expedition is under the immediate direction of the Hydrographic Department of the Admiralty, and the ship is fitted out with a msgnificent collection of scientific apparatus.

The *Challenger* will sail from Portsmouth for Gihraltar, the first haul of the dredge heing made in the Bay of Biscay, if the weather should chance to be favorable. From Gihraltar she will proceed to Msdeira, thence to St. Thomas, the Bahamas, Bermuda, the Azores; from thence to Bahia, touching at Fernando Norohna; then across to the Cape of Good Hope, and after a stay in that neighborhood, southward to the Crozetts and Marion Islands and Kerguelens Land. A run southward will then he made as far as possible to the ice, and the course thence be made to Sydney, New Zealand, the Campbell and Auckland groups. Torres Straits, New Guinea, and New Ireland will then be visited. A long cruise of perhaps a year will then be made among the Pacific Islands; thence the expedition, passing betweeu Borneo and Celebes, and visiting Luzon and its neighborhood, will proceed to Japan, where a stay of two or three months is expected. Thence uorthward to Kamschatka, whence a run will be made northward through Behring's Straits, and then through the Aleutian Islands, southward to Vancouver's Island, and so through the deep Eastern region of the Pacific by Easter Island, and possibly by the Galapagos Archipelago, to the Horn, and thence home. The voyage is expected to take about three and a half years.

It is difficult (says *Nature*) to overestimate the immense benifit which science must derive from an expedition such as this. Apart from the results of intense interest which may be expected from the deep-sea work, the principal object of the expedtion, and which must go far to elucidate a snbject ou which our knowledge is at present of the most imperfect description, abundant opportunity will offer for the accurate investigation of the animal and vegetable life of many highly interesting and yet imperfectly known, or totally unexplored, regious. The investigation of the floras of such islands as Fernando Norohna and the Marion and Crozett gronp, cannot fail to yield most instructive results; and it is needless to speak of the intense interest which centres in New Guinea.

A White Pine Project.

The White Pine *News* says that the mining operations on Treasnre Hill, so far as they have been carried, have been sufficient to yield large retnrns from two or three mines; very satisfactory results for a time from some mines which have since cost all the profits and assessments in addition to prosecute the work of prospecting; and to exhibit to-day in the Ward Beecher, the North Aurora, and the Beecher Consolidated, and perhaps in the Anchor, splendid bodies of finest ores. A jar in the mining and milling interests comes down with us to a close approach of the severe winter in the front, and these splendid mines must stand almost nnworked till spring, for the lack of room to stack up additional hundreds of tons of fine ore. With what these mining operations have demonstrated, they have not settled the system or build of the mines on the Hill. Some persons, interested in the District, are discussing the project of a tunnel, to start in on the Hamilton and Shermantown grade, to run under Bromide Flat and through the Hill to the opposite caāon. This would settle the system of the mines, and at the same time douhtless hit upon deposits not cropping on the surface; and also afford a means of getting out ores to the mills at a greatly reduced expense, particularly in winter time. We trust the project will be put into shape; and see no reason why a moderate sum in Government bonds —say half a million—might not be obtained as a loan in aid of the work.

Manufacturing Enterprise.—The Napa *Register* says: "D. A. Manuel and Sawyer have pnrchased, on the east side of the river, opposite the Third street bridge, four acres of land upon which to erect an immense foundry and machiae shop. They have also entered into arrangements with Messrs. Mygatt & Hubbard, and Treadwell & Co., of San Francisco for the manufacture of gang plows and other farming implements upon a grand scale. We rejoice in this as a home enterprise, and feel assured of its success."

Useful Information.

Phosphorescence Produced by Decomposition.

Many kinds of fish, which can make no claim to luminosity when in life, become brilliantly phosphorescent after death. Mackerels and herrings especially, when their dead bodies are exposed for a short time to the air, becomes luminons in the dark, and have often appalled some rustic youngster by their strange phosphoric glitter as they hang outside a cottage door. Stretch forth your hand and touch them, and you will find your fingers covered with a greasy substance, and luminons, as if rubbed with phosphorus. If the greasy substance be separated from the dead fish, and placed on a plate of glass, it continues to shine in the dark. But, as in all other cases of phosphorescence, there is no heat—only light. When these dead fish are placed in sea-water, in a few days time they render it luminous—evidently from the luminuous grease permeating the surrounding liquid; moreover, the water shines everywhere with equal lustre, and suffers no diminution of its luminosity by being passed through a sieve. Water which has thus been rendered luminous loses its transparency, looks milky, and acquires a disagreeable odor; and its phosphorescence may last for four or five days. Dead animal matter of all kinds occasionally becomes phosphorescent. Peep some winter's night, into the larder, and perchance you will see—as Dr. Boyle once saw—a neck of veal gleaming all over with spots of light. You may fancy, as most people do, that this phoephorescence is a sign of decomposition, and that both the veal and the gleaming herring or mackerel ought to be thrown away. But this is a mistake; for it is a remarkable fact that this luminosity from dead animal matter always shows itself before decay begins, and either ceases at once or rapidly diminishes as soon as chemical decompositiou sets it. We may add that not a vestige of infusoria or other animalcule is to be found in this luminous matter when examined under the microscope.—*Belgravia.*

The New French Metre.—It might astonish unreflecting persons says the London *Telegraph*, to know of the prolonged and anxious precautions that have been taken in the preparation of the French Metre, which is to be the future standard of international measurement. After long discussion, and debates which turned on the millionth part of a millmetre, the learned men charged that this inquiry by the Academy of Science have reported in favor of the implement actually existing in the archives of Paris. Copies of this standard are to be delicately made, and furnished to the countries which accept it as a common canon. The length of the original is to be taken at the freezing point; the material of the authenticated copies will be composed of mixed platinum and iridium, and they will be constructed out of one and the same ingot. They will be heated for many days at a prodigious temperature, so as to be proof, as far as possible, against subsequent molecular action. Each metre will be stored up in company with extremely sensitive thermometers, specially manufactured and tested; and the divisions on each rod will be marked with micro-machinery constructed for that particular purpose. This might seem needless care, and, no doubt, the millionth part of the thousandth of a metre is no great matter to lose or gain, seeing that neither buyer nor seller could possibly be aware of it. But in reality, great issues depend upon the utmost attainable accuracy in establishing such a standard; innumerable operations of human life are founded upon it; and such anxious precautions are therefore the very veracity of mechanics, the intellectual conscience of commerce and mensuration.

A Cat's Dream.—Animals, especially the dog, cat, and parrot, often indulge in the luxury of dreams. A correspondent of *Land and Water* tells the following anecdote of a cat: "She was very still, and appeared to be fast asleep, when suddenly she sprang into the middle of the room, where she fixed her feet on a limited spot on the floor, to which also her nose was applied, as if closely grasping something she held in her claws. This continued for a short time, when the nose was gently raised, and the visible attention was directed to the feet, which still continued their grasp; but after a time one of them was gradually removed, and then the other, at which puss appeared greatly at a loss to imagine whether the imaginary object could have gone, so as to escape her grasp. She looked in various directions along the floor, with a foolish face of confusion; and then again her attention was directed to the spot on which the feet were first closely pressed, as if to examine closely whether the presumed escape had been by sinking through the floor; and this seemed unsatisfactory, the disappointed animal, now widely awake, returned slowly from the spot; but she returned more than once to re-examine the place, as if she found it impossible to comprehend how an object she had so plainly seen and grasped should have sunk into nothing. Many minutes elapsed before the cat appeared to be reconciled to the conviction that what had been a dream was not in truth a reality."

There is True Economy in Good Roads.

There is no economy in saving in "the spigot and losing at the bung." There is no economy in parsimony in road making and paying treble or quadruple to wagon makers, blacksmiths and harness makers. Uneven road beds, gulleys and boulders tax a man more heavily in purse, and are more vexatious to spirit than his part of the cost, constructing and maintaining a road "level and smooth as a barn floor." Men don't get rich, or are a long time getting rich, just because they don't begin right. What is the use of toiling to save crops, if a share of the profits is lost in getting them to market? A man starts to his nearest town with a ton of hay from which he expects to realize $10 to $15. He runs into a gully, tips over, and a half a day is lost to himself and team in getting straightened up; or he loses a tire, breaks some part of his wagon, or casts a shoe, because of a boulder or something else that shouldn't be there—out comes his purse for repairs, and away goes an hour or more of his time!

But the cost and loss of his time is not all—he gets fretted, worried in spirit, and becomes exceedingly unamiable, boorish and bearish. And this last is no first-rate evidence of his civilization—traced back to his imperfect road bed. A poor road in a populous community costs enough, incidentally, (and accidentally), in the course of twelve months, to macadamize its whole length, and to give something almost as durable as the "everlasting hills."

Our old system of road working needs alteration. It does not meet the wants of the people to-day. It is too antiquated and too imperfect to be recognized in harmony with the spirit of the age. It needs thorough revision. What scholar and philanthropist can devise a system that will combine thoroughness of structure, completeness of detail, and no waste of the people's money? Such a man will be the benefactor of the rural districts, and as justly entitled to reverential memory as any inventor of the age.

The Origin of Thunder-Storms.

Professor Palmieri's experiments at his observatory half way up Mount Vesuvins really throw great light on the philosophy of our thunder-storms. Having watched the changes of atmospheric electricity there for nearly a quarter of a century, he believes he has detected their obedience to certain definite laws. One of the facts he has established is, that the electricity of any station is always positive if there be no shower of rain, hail or snow falling within a distance of fifty miles, and provided there be no projection of ashes from the crater of the mountain. If a shower be falling within this radius, the following law holds good: At the place there is a strong developement of positive, electricity, round this there is a zone of negative, and beyond this again positive electricity. Should negative electricity be observed during the shower, it will be found to be induced by a more powerful one of positive electricity further away. All this had been ascertained by means of telegraphic communication with both neighboring and distant regions. There is no usual development of electricity except where and when the moisture of the air is being condensed. In a cloud from which no rain is falling there is no greater electrical activity than elsewhere. But the moment aqueous vapor begins to condense into drops, positive electricity is thereby created, and the greater in quantity the greater the precipitation by changes of temperature. When, therefore, this condensation is extremely rapid, a superabundance of electricity accumulates, which must find its way to the negative zone, perhaps, or to the earth below, by lightening discharges—in other words, thunder-storms are produced.

The Centre of Population.—By an interesting calculation, Professor Hilgard of the Coast Survey, shows that the centre of population of the United States, which is constantly moving westward, was, in 1840, at the Cumberland Mountains, in Virginia, in 1850 it moved westwardly sixty-seven miles, to the south of Parkersburg, still in Virginia; in 1860 it got as far west, about eighty-two miles, as a place south of Chillicothe, O., not far distant from the boundry of Virginia and Kentucky: in 1870 it moved only forty-five miles, and is now at Wilmington, Clinton county, O. The Professor deduces from his very curious calculations, that in the year 1900 the centre of population will be near Bloomington, Ind., about forty-five miles southwest of Indinapolis.

To Clean Cider Casks.—A good plan to cleanse musty or foul caks, is to put in a quantity of unslaked lime, and then pour in boiling water until the same is slaked. Put in the bung and shake until the water and lime have come in contact with every part of the barrel. Let it stand six or eight hours, empty and smell the cask, and if not clean, repeat the operation, and after having again emptied out the lime, burn a strip of cloth dipped in melted brimstone in cask, fastening it by the bung, and a cask must be foul indeed that cannot be purified by this process.

Good Health.

Spent Balls.

A spent ball striking with a dull thud like a stone thrown by a strong-armed man, often causes more pain to the man struck, and more commotion in the ranks, than a bullet that tore through a man's leg or arm. A spent ball always "slips up" on you. It always came when you least expected it, from an unlooked-for direction, and struck a part of the body not expecting to be hit. So it always produced a stunning effect. In some regiments spent balls were universally called "stunners," and very many men had painful and uncomfortable experience with them. Some day, the men lounging in the line of battle, protected by a hill, and listening to the volleys on the right, would be disturbed by the contortions of a man who had been asleep.

A spent ball had struck his foot, and without breaking the shoe-leather had made him crazy with pain. Another would be hit in the region of the stomach, and labor under the impression that his entrails had been torn out. Another struck on the hand, would yell out like an Indian, whereas had a bullet gone through his body he would have shut his lips and uttered not a groan. The boys had a theory that these spent balls came from the awkward squad of the enemy, and that the air up a little distance was full of them. The spent balls were no respecters of persons. They demoralize men in shoulder-straps as well as men in blouses. At Chickamauga General Whitaker, storming forward at the head of his brigade, was struck in the abdomen. Deathly sick and faint, he called to Gen. Granger.

"General, I am hit in a bad place; who'll take command of my boys?"

Granger replied, "I'll do it myself," and sorrowfully sent his favorite brigadier to the rear. Whitaker, riding along rearward, concluded to see the the extent of his wound. Unbuttoned his coat, found no blood. Underclothing was not stained or punctured. There was no wound in the flesh. Realizing that he had been hit with a spent ball, Whitaker wheeled his horse, and in a towering rage galloped back to the scene of battle. Dashing up to the commander of the reserve, he roared: "I'm not wounded worth a curse. I'll run this brigade myself;" and he did.

Tobacco as a Medicine.

A letter has recently appeared in the *Manchester Examiner* from a smoker who "has read with interest the various letters that have appeared in that journal on the tobacco question." This gentlemen, it seems, never knew a day's health until he took to smoking. Up to the age of twenty he never smoked, but he was always sickly, and during the winter months was much troubled with affections of the chest." Fortunately for him, at that age, on the recommendation, he alleges, of no less an authority than Prof. Huxley, he "began the use of mild tobacco;" and from that day forward he has enjoyed good health. He is no longer troubled with his cough in winter, nor, although he is of delicate constitution, has his memory or sight been in any way impaired. A short time ago he foolishly gave up the habit of smoking, for the sake of experiment, and denied himself the use of tobacco for two or three weeks. The consequences were most serious. All his old symptoms returned, and his cough became again so exceedingly violent that it nearly turned to bronchitis. On resuming his pipe, the affection immediately subsided. He accordingly now smokes from a sense of duty, "medicinally, and as a preventive." This painful story is calculated to throw additional difficulties in the path of the anti-tobacconists.

The Beard Healthy.—There are more inducements for wearing the beard than the mere improvement of a man's personal appearance, and the cultivation of an aid to the everyday diplomacy of life. The hair of the mustache does not only absorb the moisture and miasma of the fogs, but it strains the air from dust, and the soot of our great, smoky cities. It acts, also, in the most scientific manner, by taking the heat from the warm breath as it leaves the chest, and supplying it to the cool air taken in. It is not only a respirator, but with a beard entire we are supplied with a comforter as well, and these are never left at home, like the umbrella, and all such appliances, when they are wanted. Moffat and Livingstone, the explorers, and many other travelers, say that at night no wrapper can equal the beard. A remarkable fact is, too, that the beard, like the hair of the head, protects against the heat of the sun, as the thatch does the ice-house; but, more than this, it becomes moist with perspiration, and then, by evaporation, cools the skin. A man who accepts this protection of nature may face the rudest storm and the hardest winter. He may go from the hottest room into the coldest air without dread, and we verily believe he might sleep in a morass with impunity; at least, his chance of escaping the terrible fever would be better than his beardless companions'.

Ether vs. Chloroform.

If the force of statistics be of any value, ether, beyond question, is the agent which presents the most powerful claims, and must obtain our confidence as the safest anæsthetic. The reports of the Medical Society of Virginia during this season are conclusive. By combining American and British statistics the result is found to be as follows:

Agent employed.	Deaths.	Inhalations.
Ether	4 to 82,815	or 1 in 23,204
Chloroform	53 to 152,160	or 1 in 2,883
Mixture of chloroform and ether	2 to 11,176,	or 1 in 5,588
Bichloride of Methylene	2 to 10,000,	or 1 in 5,000

It is thus proved statistically that chloroform is eight times as dangerous as ether, twice as dangerous as a mixture of chloroform and ether, and, as far as experience goes, it is more dangerous than bichloride of methylene; in fact, chloroform is the most dangerous of all the anæsthetic agents in use. If statistics are of any value, these should be startling and impressive ones. The report of the London Chloroform Committee states as the result of careful investigation, that "ether is less dangerous than chloroform;" and that "with every care, and the most exact dilution of the chloroform vapor, the state of insensibility may pass in a few moments into one of imminent death;" and the latest surgical work from America advocates ether as the most suitable anæsthetic.—*British Medical Journal.*

Coloring the Eye.—Dr. R. J. Levis, of the Pennsylvania Hospital, has devised a means of coloring opacities in the cornea of the eye. He says: "The disfigurement of the glaring white opaque spaces of the cornea can be cured by indelibly tinting, so that if central, they shall show the blackness of the natural pupil, or if peripheral in location, the color of the underlying iris may be most deceptively imitated. Should even the entire cornea be opaque, a very natural imitation of the appearance of the whole circle of the iris and the pupil can be accomplished." The instrument used is a bundle of from three to six very fine sewing needles inserted into a handle. For coloring matter, ordinary water pigments are used, rubbed to a pasty consistence and mixed with a little glycerine. For the black of the pupil, Indian ink is employed. The surface of the opaque spot being wiped clear from moisture, the paint is applied thickly over it with a small pencil. The needle points are made to penetrate repeatedly and rapidly in varying directions, until much of the opaque surface is gone over with the pigment. Two or more repetitions of the process are required. The operation is said to be painless, and as the coloring matter is regularly tatooed into the tissues, it cannot be washed out by tears.

Buttermilk.—Hygienists assert that buttermilk is an excellent aid to digestion, and acts as an admirable substitute for fruit in Winter. They also advise it as a preventive of sickness in Spring. If invalids who suffer from indigestion would drink it at meal times, they would find it invaluable.

Persons who have not been in the habit of drinking buttermilk consider it disagreeable because it is slightly acid, in consequence of the presence of lactic acid. There is not much nourishment in buttermilk, but the presence of the lactic acid assists the digestion of any food taken with it. The Welsh peasants almost live upon oat cake and buttermilk. Invalids suffering from indigestion will do well to drink buttermilk at meal time.

Too Much Shade Unhealthy.—Mr. Greeley, a short time before his wife's death, said to a friend that the bronchial disease with which she was then severely afflicted, and which finally caused her death, was contracted by living in the "old house" upon his Chappaqua farm. That house stood in a forest grove which so overshadowed it that the sun was almost shut out. He said he tried to persuade his wife to let him cut away some of the trees, but she could not bear to see a single tree cut down. In time, however, the fatal disease got such a hold on her constitution that Mr. Greeley put up a new house on a sunny portion of the farm, where the family lived during the latter years of their residence there.

Medical Value of Asparagus.—A medical correspondent of an English journal says that the advantages of asparagus are not sufficiently estimated by those who suffer with rheumatism and gout. Slight cases of rheumatism are cured in a few days by feeding on this delicious esculent; and more chronic cases are much relieved, especially if the patient avoids all acids whether in food or beverage. The Jerusalem artichoke has also a similar effect in relieving rheumatism. The heads may be eaten in the usual way, but tea made from the leaves of the stalk, and drank three or four times a day, is a certain remedy, though not equally agreeable.

Wash for Sunburn.—Take two drachms of borax, one drachm of Roman alum, one drachm of camphor, half an oz. of sugar candy, one pound ox gall; mix and stir well for ten minutes or so, and repeat this stirring three or four times a day for a fortnight, till it appears clear and transparent. Strain through blotting-paper, and bottle up for use. It is said that strawberries rubbed over the face at night will remove freckles and sunburn.

MINING AND SCIENTIFIC PRESS

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San Francisco:

Saturday Morning, Dec 21, 1872.

Legal Tender Rates.—S. F., Thurs., Dec. 19—Buying, 88¾; Selling, 90.

Table of Contents.

GENERAL EDITORIALS.—Christmas; The Coming Course of Lectures; The Diamond Fraud, 385. The Coming Expositions, 392. ILLUSTRATIONS—Close's Improved Expansion Rail and Chair, 385. The Ant Lion, 390. An Ant's Nest, 393.

MECHANICAL PROGRESS.—Proposed Novelty in Fireproof Buildings: Tensile Strength of American and English Iron and Steel; Barron's Steel Process; Cohesion of Manufactured Iron; Improved Construction of Tools for Turning Metals at Increased Speed; Steel Rails, 387.

SCIENTIFIC PROGRESS.—Extraordinary Meteoric Display—What has Become of Biela's Comet; The Molecular Phenomena of Evaporation; The Future of Science; Atmospheric Phenomene of the Boston Fire: New Meteorological Theory; Sensitive Streems, 387.

MINING STOCK MARKET.—Table of Daily Sales and Prices and Comparative Prices for the Week; Notices of Assessments; Meetings and Dividends; Review of Stock Market for the Week, 388.

MINING SUMMARY from various counties in California, Nevada, Arizona, Colorado, Idaho, Montana, and Utah, 388. Market Reports, 398.

USEFUL INFORMATION.—Phosphorescence Produced by Deposition; The New French Metre; A Cat's Dream; There is True Economy in Good Roads; The Origin of Thunder-Storms; The Centre of Population; To Clean Cider Casks, 391.

GOOD HEALTH.—Spent Balls; Tobacco as a Medicine; The Beard Healthy; Ether vs. Chloroform; Coloring the Eye; Buttermilk; To Much Shade Unhealthy; Medical Value of Asparagus; Wash for Sunburn, 391.

DOMESTIC ECONOMY.—Oatmeal Breakfast Cake; The Philosophy of Washing Flannels; To Boil Corned Beef; Observations on Preserves, the Boiling of Sugar; Cream Tapioca Pudding, 395.

MISCELLANEOUS.—Metallic Staples of the Pacific Coast; Tuolumne's Gold; Plumbago; The Comstock Lode; New Project, 388. Visit to the Crown Point Mine; California Shad; Ramie and Jute; Where to advertise; Remarkable Expedition; A White Pine Project, 390. New Volcanic Theory Anticipated, 392. Academy of Sciences, 393. Iron Work of Sacramento; Mining in Nevada County; Kern County Mineral Vein System; Oregon Mines, 394. Patents and Inventions; New Incorporations; Meetings and Elections, 398.

SEND IN YOUR SUBSCRIPTIONS.—By renewing subscriptions promptly, our subscribers will confer a grateful favor upon the publishers of this journal. It will save our mailing clerk, in many instances, the trouble of distributing and resetting your name and address. It will perhaps save us the time of an agent and his traveling expenses in politely soliciting your renewal. Suppose every department in the paper does not interest you, we publish a great variety, and does not the balance pay you? We really believe that our first-class publications have benefited the Pacific Coast community to that degree that every well-to-do person has been benefitted more than four dollars by their progressive and industrial influence, and that there is no danger of any one making a mistake or giving us more than value received by sending in their subscription. We shall continue to put the money sent us into improvements for the benefit of readers—and not into selfish and rusty pockets.

TO INDUCE SUBSCRIPTIONS, we will (as long as this notice appears) send from one to twelve copies of such back numbers as we may have on hand, of this journal, to one or more addresses, furnished us by *any* old or new subscriber who sends sufficient stamps to pay postage on the same.

FRUITS OF THE SEASON.—On this the 19th day of December, we will, though not to tantalize our Eastern readers, but just to show them how we are getting on with our winter, remark, that most of our fruit stands for the sale of fruits, etc., are what are known as *open stands*, simply a shop or store without doors or windows in front. That these stands are just loaded with apples, pears, and a half dozen of our best varieties of grapes, whilst oranges, limes, bananas, and pine apples are as plentiful as can be reasonably wished, all at low prices; whilst strawberries and green peas can also be found, but begin to possess somewhat the odor of silver.

LABOR.—Workmen and mechanics are very scarce in this city at present, and in the matter of building in particular are much wanted. There is a prospect of lively times in every department of industry and good wages are offered.

RAYMOND & ELY SUIT.—In the 12th District Court this week, the suit of McDermott against the Raymond & Ely Mining Company, was dismissed.

The Coming Expositions.

Extensive preparations are being made for several expositions, some of them to take place three or four years from now, and the commissioners of the respective exhibitions are judiciously taking time by the forelock so as to perfect all necessary preliminary arrangements. The importance of these exhibitions of the arts and industries of the world to our merchants, mechanics, inventors and manufacturers can scarcely be overestimated, and we do hope that California will be properly represented every where. The great

Centennial International Exhibition

Of 1876 is naturally of most interest to Americans. This exhibition, originating under the auspices of the National Legislature, controlled by a national commission and designed as it is to "commemorate the first century of our existence, by an exhibition of the natural resources of the country and their development, and of our progress in those arts which benefit mankind in comparison with those of older nations," should be made the greatest success possible. It is designed to bring together, within a building covering 50 acres, not only the varied productions of our mines and of the soil, but types of all the intellectual triumphs of our citizens, specimens of everything that America can furnish, whether from the brains or the hands of her children, and thus make evident to the world the advancement of which a self governed people is capable.

Commissioners from each State and Territory have been appointed to conduct the affair, and Joseph R. Hawley is President, and Lewis W. Smith is temporary Secretary. The California Commissioners are Messrs John Dunbar Craig and John Middleton; from Arizona, Richard C. McCormick and James L. Cooper; from Idaho, Thomas Donaldson and James S Reynolds; from Montana, William H. Clagett and Patrick A. Largey; from Nevada, Wm. Wirt McCoy; from Oregon, James W. Virtue and Andrew J. Dufur; from Utah, John H. Wickizer and Oscar G. Sawyer; and from Washington Territory, Elwood Evans and Alexander S. Abernethy. The commissioners have issued a circular asking the coöperation of the people of the whole country to make the Centennial celebration such a success as the patriotism and pride of every American demands. The commissioner has received no Government aid, such as England extended to her World's Fair, and France to her Universal Exposition, yet the labor and responsibility upon it is as great as in either of those undertakings. It is estimated that $10,000,000 will be required, and this sum Congress has provided shall be raised by stock subscription, and that the people shall have the opportunity of subscribing in proportion to the population of their respective States and Territories. Each one must contribute its share of the expenses and receive its share of the profits. The commission earnestly urges the formation in each State and Territory of a Centennial organization, which shall in time see that the County Associations are formed, so that when the nations are gathered together in 1876, each commonwealth can view with pride the contributions she has made to the National glory.

The Vienna Exposition of 1873,

Which we have heretofore briefly noticed is expected to be one of the largest and most comprehensive ever held. The Park in which the buildings are being erected has an area of over 900 acres, and the entire buildings and grounds will include an extent nearly six times larger than that occupied by the Exhibition at Paris in 1867. The Department devoted to the United States, in the main building, is favorably situated, being the one nearest the City, and directly in the path of those who may visit the building on foot or by the street cars. The United States Commissioner General, Thomas B. Van Buren, has issued a circular urging Americans to be well represented at this Fair, and will give any information in his power to those desiring it. His address is 51 Chambers street, New York. Mr. Guido Kustel, well known on the Coast as a mining expert, goes from this State, under the auspices of the Mechanics' Institute, and will be glad to do anything in his power to further the interests of the Pacific Coast.

A meeting of parties interested in the Exposition was held last Monday in this city, at which the following resolution was adopted:

Resolved, That all questions connected with the matter of the representation of California at the Exposition be referred to a special committee, to report at an early date.

The following gentlemen were appointed as the special committee: Professor D. C. Gilman, Washington Bartlett, Geo. Davidson, A. S. Hallidie, L. A. Garnett and A. Gansl. Mr. Wm. T. Coleman in a communication sent to the committee, suggests that a Commissioner recommended by the Mechanics' Institute, should be appointed to represent the mechanical and mineral interests of the State. He should be provided with models of every different kind of machinery used in the reduction of every kind of ore, such as stamp mills, amalgamating pans, etc., etc., and specimens of gold and silver bearing ores, with large photographs of hydraulic mining, samples of gold bearing gravel, etc., etc.

The names of those, who are giving their advice and assistance to the Commissioner, embracee prominent and well known gentlemen, which gives additional assurance of success. Professor Wm. P. Blake in connection with mining and metallurgy; agriculture, horticulture and forestry, Henry W. Sargent; chemical industry, Prof. Chas. F. Chandler; substances of food as products of industry, Prof. E. N. Horsford; textile industry and clothing, Dr. Isidor Walz; leather and india rubber industry, Jackson S. Schultz; metal industry, Abram S. Hewitt; wood industry, Geo. E. Harney; stone, earthenware and glass industry, Prof T. Sterry Hunt; small wares and fancy goods, Chas. L. Tiffany; paper industry and stationary, John Priestly; graphic arts and industrial drawing, John E. Gavit; machinery and means of transport, Prof. Roht. H. Thurston; philosophical and surgical implements, Dr. F. A. P. Barnard; musical instruments, Theodore Thomas; art of war, General Q. A. Gilmore; the navy, Isaac Newton; civil engineering, public works and architecture, Wm. E. Worther; the private dwelling house, its inner arrangements and decorations, Calvert Vaux; the farm house, its arrangements, furniture and utensils, Orestes Cleaveland; national domestic industry, Salem H. Wales; organization and influence of museums of fine arts applied to industry, Howard Potter; art applied to religion, Dr. C. H. Potter; objects of fine arts of the past, exhibited by amateurs and owners of collections, John T. Johnson; fine arts of the present time, George P. Putnam; education, teaching and instruction, Judge H. C. Van Horet; history of inventore and industry, Prof. Samuel D. Tillman; history of prices and representation of commerce and trade, Francis A. Stout; and charities, Chas. L. Brace.

The exhibition, the commissioner assures us, will not be a mere advertising agency, but a great gathering of the productions of all the earth, and a friendly contest for natural superiority. There are some features of the present laws of most of the European countries which are objectionable to inventors. A patentee is required by the laws of Austria to manufacture the patented article in that empire within one year from obtaining the patent or the latter becomes void. The commissioner says that the desire, however, among the Austrian and Hungarian people to secure a respectable display of American machinery and inventions is very strong, and the authorities are expressing their determination to do all in their power to prevent inventors and patentees against piracy and annoyance. A law has already been passed by the Austro-Hungarian Parliament, granting the right to every exhibitor to obtain from the General Manager a certificate free of charge, which certificate will act as a full patent during the exhibition, and for two months afterwards, and may then be turned into a patent by the payment of a fee of less than eleven dollars.

On the 6th of April, 1872, there was ratified between the Governments of Austro-Hungary and the United States a treaty upon Trade-marks, which provides that any trade-mark used in either country, to designate the origin or quality of any article, shall fully protect such article, and places American owners and inventors, when using such trade-mark in Austria, in the same position as Austrians occupy in our own country. It is to be hoped that, among other things, Mr. Kustel may be able to take from California to Vienna a complete quartz-mill, with all the late improvements, so as to show the mining-men there a mill in practical operation.

SECRETARY OF THE INTERIOR.—We have received the Annual Report of the Secretary, showing the operations of the Department for the year 1872.

Mr. Mallet's New Volcanic Theory Anticipated.(?)

In our issue of Dec. 14th, we made reference to the theory respecting volcanic energy, recently put forth by Robert Mallet, the eminent English seismologist—a theory which seems to have met with almost universal acceptance by scientists everywhere, and which promises to take the place of all others in accounting for the various phenomena connected with volcanic action, earthquakes, and the elevation of mountain ranges.

Mr. Mallet shows that the hotter internal portion of the earth must contract faster than the relatively cool crust, and hence that the shrinkage of the crust is competent to occasion all the known phenomena of volcanic action. He also recognizes therein the origin of earthquakes and of the changes of level on the earth's surface.

This is done by applying thereto the modern theory of heat as a mode of motion. As the solid crust closes in upon the shrinking nucleus, the work expended in crushing down and dislocating the parts of the crust is transformed into heat, by which, at the places where the process goes on with greatest energy, "the material of the rock so crushed and of that adjacent to it are heated even to fusion. The access of water to such points determines volcanic eruption."

Mr. Mallet's theory is also completely opposed to the ordinary idea that mountain elevations are the result of *upheavals;* on the contrary he holds that they have been formed by the *subsidence* of the valleys.

Our purpose, in this second reference, is to call attention to the fact that many of the fundamental ideas were previously put forth by J. S. Phillips, M. E., of this city, in his "Explorers', Miners' and Metallurgists' Companion," published at this office, two years ago. In proof of this fact, we quote from that work as follows;—In regard to the heat-generating effects produced by the contraction of the earth's crust, Mr. Phillips says on page 20: "After billions of cycles had passed away, when the lighter granitic exterior of the earth became from molten to *plastic* and partially solid condition, we will consider what actions must have taken place in reference to the general contraction that produced the irregular contour of surface and subterraneous cavities. Previous to this it may be safely supposed that its surface was a regular and comparatively smooth globe, which was surcharged and enclosed with oxygen, hydrogen, and all other inflammable gases or substances, and largely fluxed with potash, soda, lithia, lime, magnesia, sulphur, iron and manganese, it must have possessed a well-fused molten envelope of granitic slag and surface-dross. Until this settled almost to solid rock, it would be drawn by gravitation directly downwards in close contact to the still molten interior, but at a certain stage of solidification, because it naturally contracted less in cooling than the next interior, hotter molten mass, this vertical action of the outer crust would cease, when the contraction of the molten interior being further hastened, by the latter being accelerated by the evulsion of gaseous elements from the molten state, immensely extensive subterranean arched cavities would be formed under the superimposed spherical segment of granitic crust; which then partaking of lateral thrust, from solidity, the abutments of these all-sufficiently vast arches would give way, under the increased pressure, and consequently more *plastic condition*, and the mountains be uplifted at the lines of greatest pressure, or valleys and extensive plains sink, by mere straightening, as the ocean beds, to rest on the interior until a repetition ensued."

The "more plastic condition" was of course considered due to the heat generated by the "pressure," as is evident from the first two lines of the quotation, and elsewhere throughout the work.

On page 26, Mr. Phillips says:—"These principles of heat and pressure have not been sufficiently studied or experimented on by geologists," etc. The depression of the valleys, rather than the uplifting of the mountains, is more fully set forth on page 25, as follows:—

"During these formations, the earth's crust or hollow shell would continue to be violently compressed in circumferential directions, and being solid it would, from its own gravitation, as it endeavored to follow the still faster contracting interior, crumple and distort certain sections of least resistance into rolling surface contour of hill and dale. In such a state of comparative homogeneity the partial invasion of volcanic fires had not at this early period really uplifted any mountains; but their apparent elevations existed more from the above causes, and a loitering behind of such portions, during the general travel, when urged by contraction and gravitation towards the center of the earth."

And again, referring to the carboniferous era, he says, on page 49—"In the early times

the crust had not solidified, but to a comparative slight depth; aad, consequently, the aettlings, or deviations from existing lines of surface and contour, to follow the contracting interior, were more easily accomplished than is the case now with the deeply solidified settled shell.

It may he douhted if extensive mountain chains, apart from volcanic action, have at any time really arisen, or increased distance from center, seeing that the trifling length of line of their hight, aa compared with the radiua of the earth, is hut from two to five miles out of nearly 4,000, or generally much less than one part in a thousand; the whole surface has settled more than this, and the ocean beds, by sinking faster than the mountains, the latter, hy lagging, appear to be elevatod.

In view of these unmistakahle facts—of the several growtha and burials of the coal seams, with their similar anterior and posterior strata—it is far more natural to suppose that this *difference of contractional travel, or settling of the surface*, had causcd these changes, than the real uplifting of such extensive regions; it appears strange that so little differenca existed on a contracting globe of such diameter, as the smallest metal globe shows, on solidification from molten to solid state, a very much greater disparity.

Many other passages might he quoted to more fully establish the fact of priority, as ahove, in setting forth the "new theory" of mountain-formations. Wa will close hy simply adding tbat Mr. Phillips, in the work referred to, argues the subject of pressure and consequnent production and increase of sensible heat, in a somewhat lengthy and ahle manner in his second chapter treatiog of the secondary rock formations, which shows that he is familiar with those principles of action.

Academy of Sciences.

The last regular meeting of the California Academy of Scienoes for the year 1872 was held on Monday evening, Professor Davidson in the chair. Professor D. C. Gilman and A. De Tavel were elected members.

The contributions to the cabinet received, comprised the ribs, vertebra and fin bones of a humpback whale caught in San Lnis Obispo, also parasites from the whale, presented by Captain Scammon.

A large specimen of borate of lime, containing 50 per cent. of borassic acid, from the claims of the Borate Mining Company, twenty-five miles from Crescent City. Specimens of this same snbstance, which were atoms in size compared with the piece in question, have been exhibited in the British Museum as cnriosities. Until the discovery of the deposits on this coast, the borate of lime had never been found in such huge masses.

A collection of shells from the various localities were presented by Henry Hemphill.

An interesting paper by Professor Dall, of the United States Coast Survey, was read by the Secretary, the subject heing preliminary descriptions of the new species of mollusca from the northern coast of America.

Sun Spots and the Periodicity of Floods.

Dr. A. W. Saxe said he had been a resident of this city since 1850. He had watched the character of the seasons since that time, aud from conversations with the old inhabitants of the conntry, the Spauiards, he had been ahle to trace back very reliahly the periods of excessive rain-fall since 1832. Having read some portions of Humboldt's "Cosmos" as to the obscuratiou of the snn by spots, their decennial increase and diminntion, and their effects upon the magnetio phenomena of the Earth, he had heen led to examine the matter, and had found that onr flood seasons corresponded very nearly with the period of minimum obscuration of the sun.

The President said the periodicity of the sun's spots, and of the variation of the magnetie needle has, from latest observatious and discussions, eleven years and 3-hundredths of a year. There was a saying in the West that the floods of the Misaissippi occurred every nine years. Whether any accurate record had been kept he did not know; hut if there was a cosmical cause it was more likely to have a regular period than not.

In reply to the President, Dr. Saxe said he had not been ahle to get a perfectly accurate weather-tahle. He had taken his data partly from the memory of old residents as to floods that had overflown the country.

Dr. H. Gibbons had some doubt as to whether the ten-years theory could be snstained in regard to our Winters. The weather periods were very pliable, and facts ought to be established sufficiently before explanations were given. He had examined the weather tahle, and there was certainly hardly any data for the inference of every tenth year being an abundantly rainy season. For two or three successive periods there had heen rainy Winters near the tenth year, but there had heen Winters still more wet occasionally in the intervals, and it was quite likely that if two or three other figures were taken besidea ten, a similar inference might be drawn with regard to the last twenty-three years. In reference to almost any rules that could he deduced, he had very freequently, in casting his eye over the seasons to which his record referred, come to conclusions.

Now he thought he had got a rule that hitherto had held, hut almost invariably the very next occnrrence violated the rule, and the rule was gone as soon as it was deduced. The fact was, it required a very much longer period of tima than twenty-threa years to establish any rule in regard to weather. In Europe, where they had heen examining this subject most minutely for centuries, they had not yet adopted or come to any conclusion ou the snbject. Thera was no means of predicting the character of the coming season. In the Atlantic States, where observations extended bsck for the greater part of a century, nothing more conclusive had been ohtained with regard to the severity of the approaching winter than the indications of a goose's honc, perhaps, or the sayings of some Indians, or the doings of squirrels or some other animals. The scientific data furnished no record upon which to estimate the character of the coming season, and it was hardly fair to conclude that here in California, 22 or 23 years of experieuce would furnish us with rules. Of course, he did not wish to discourage inquiry, hut the statements of old inhabitants as to the weather were to be takeu with a great deal of allowance. It was very seldom that any of these confident statements were sustained by the result.

A Scientific Library.

The President said that Professor Gilman had been examining the different public libraries, and some private libraries of the city, and was astonished at the number of scientific books there—books which represented series of philosophical transactions, etc., although no one library contained them all. Professor Gilman had made the suggestion that it would he of interest to scientific men to have a catalogue made np from the different collections, so that in collecting hereafter no duplicates should be ohtained until a fnll set of the different scientific pnblications had heen secured. In the meantime, persons could refer to Bancroft's private library, and the Mercantile, Odd Fellows' and Mechanics' Institute Libraries. The suggestion struck him as a very good one—one that every scientific man wonld wish to see carried out—and he would he one of three to assist in making the catalogue. German scientific literature was very rare in the city, and they knew that that literature was very rich.

The annual meeting of the Academy will he held on the 6th of January.

Oaklann Bar.—The har at the mouth of San Antonio Creek, which has heen a great hindrance to traffic hetween this city and Oakland, is to be removed, and a contract has beeu awarded to E. B. Bishop for dredging it. He is to excavate a channel 4¼ feet deep at lowest tide, and work is to be completed hy the first of next Septemher.

Ants at Home.

For the entertainment of our readers we present an illustrstion representiog the home aud domestic life of the ant. Familiar as these little creatures are to almost every one, few are familiar with their natural history; and finding an interesting article on this aubject in the *School Day Visitor*, we appropriate it entire.

"Ant nests or homes are called ant-hills, hecause of the hillock which they huild up hy the dirt which they remove from the tunnels and chambers of the nest. These ant-hills serve as an outer protection of the avenues and halls which are excavated under the surface. The entrance to the uest is simply a hole or tunnel hollowed out in the soil, and which the thrown-out materials conceal. As the excavation goes on, and the tunnel hranches out into a lahyrinth in all directions, the pile of earth and ruhhish grows larger. The interior consists of corridors, landings, chambers, and spacions rooms

AN ANT'S NEST.

communicating with each other hy long aud short passages. All these passages lead to one central and grand gallery, loftier than others, and having its circular ceiling supported with columns. The beautiful illustration our artist has given us represents the interior of an ant-hill drawn from nature; and it will help you hetter to nnderstand the wonderful construction of the home of the ants. Outside of the hill you will see some ants occupied in drawing milk from plant-lice.

This custom is so strange that I mnst not pass over it. Ants are very fond of a peculiar liqnor which plant-lice secrete and store up in their abdomen. By means of their *antennæ*, which I have already described, the ants persuade the plant-lice—called *aphides*—to disgorge this liquor drop hy drop, which they immediately appropriate to their own nse. These *aphides* are often captured by the ants and taken into their nests, where they are carefully watched and kindly treated, in view of the henefit they expect to derive from them. So you see that ants hold property in stock, as many men do. And they raise them, too. For they sometimes hring into their nests the eggs of plant-lice, and tenderly eare for them till the insect is full grown snd is ahle to reward their kind nursing hy a rich supply of such milk aa the ant likes. Sometimes war arises between two ant repuhlics for the possession of these *aphides*. And when such war takes place, it is very bitter, and the aphides are made to suffer many wrongs even from those who pretend to be their friends. There is nothing in insect-life more interesting than the domestic hahits of ants, which in the different species are nearly the same. The females live together in the utmost harmony. They have no nests, like birds, in which they lay their eggs, hut they deposit them wherever they happen to be while walking ahout. The workers pick them np immediately and carry them to the chambers set apart for them. Of them the mothers have no care whatever. All their maternal love and anxiety seem to be transferred to the workers, and carefully and affectionately do they take care of the tender and dependent yonng committed to them. In abont two weeks the egg is hatched, and the ant appears in its *larva* state, in which it looks very unlike the fnll grown ant. The nurses are obliged to gather for the yonng, each day, the provision destined for their food.

They put them in the open air during the day. And that the nnrses may know when the sun appears and shines on the hill, sentinels are placed just nnder the roof of the nest, who observe the rising of the sun, and when they are assured of the fact, go to tell it to those that are watching the *larvæ*, hy tonching them in an intelligent way with their *attenuæ*. In a few seconds all the avenues are crowded with workers carrying the young out of the nest to put them on the top of the ant-hill, that they may receive the benefit of the snn's rays. When the snn's heat hecomes too great, their careful gnardians remove them to chambers not far from the top of the hill, where the heat of the sun is more mild.

When the *larvæ* are ready to change into their *pupæ* state, the workers brush them clean, distend their skin, and thus fit them for the remarkable change they are about to nndergo. The *larvæ* then spin for themselves a silken cocoon of a close texture and a gray or yellowish color. When they are ready to escape from their cocoon, the workers tear the silken covering from the *pupa*, and thus assist to affect its deliverance. They then watch over the newly horn, feed it, teach it to walk, and never ahandon it till it can help itself.

Paul Process.—The last steamer to Australia carried over from this city one of Mr. Almarin B. Paul's mills, for the largest metallurgical works in New Zealand. The proprietors of the institution have heen for soma time experimentiug with the electro-chemical dry amalgamating harrel process, on a small scale, and the results of their investigations must have heen satisfactory, or they would not have ordered this mill. The machinery was constructed at the Miners' Foundry, in this city, and was shipped ready to he put np on its arrival. Our English friends are nsually so exhaustive and practical in their trials of anything that pertsin to machinery, etc., that we may expect a detailed account of the experimeuts with Mr. Paul's apparatns as soon as sufficient time shall have elapsed. There is no reason why a hrisk business should not spring np with the Australian Colonies, in the matter of mining machinery, and we hope to hear of more experiments hefore long. As remarked in another column of this issue, our foundrymen should take steps to be properly represented at the coming exhibition in Australia.

Mining ann Scientific Press.—We have received an order from the Boston Public Library to send our paper regularly to that address, which snggests to us that other libraries in the Eastern States should keep on file one of the few mining papers in America, and the only one published in a mining commnnity. It would not be amiss to procure hack volumes of the Mining ann Scientific Press as a matter of reference in connection with the rapid progress of this coast in mining and mechanical industries.

San Diego Mines.—The recent results at Julian and Banner districts, in San Diego county, are very enconraging. No bad weather has as yet interrnpted operations. On the 11th inst., 24 tons of Helvetia ore yielded $20 per ton; ore from the Good Hope $27 per ton; and 16 tons from the Van Wert $48 per ton.

Holcomb Valley Mines.—A dispatch from Los Angeles states that the Holcomh Valley mines have heen sold and transfer made to an English company, who incorporate with a capital of £40,000. The purchase inclndes 100 acres of gravel deposit. The eight-stamp mill is to be supplied with 20 new stamps.

The sum of $3,000 was cleaned up from a 10-days run on rock from the Vnltnre mine, Baker county, Oregon, last week.

Domestic Economy

Oatmeal Breakfast Cake.—This is made of coarse oetmeel, with water enough to satnrate it, and little or no selt. Pour it into a beking tin, helf an inch or three-qnerters deep, shake it down well, end when thie is done it shonld be eo wet thet two or three spoonfnls of water shonld run freely on the surface. Put it in a quick oven and bake twenty minutss. Eat warm. It will bs as light and tender as the best "Johnny caks," or else you have wet it too much or baked it too long. This is one of the most accommodeting baked dishes that can he made. It will do very nicely with a little longer time, if the oven is not quite hot. If it will not bake there at all, pour it into a fryiug-pan, cover it close and set it on the top of the etove, where it will even beke in fifteen minutes. For a hurried breakfest and a slow coel-fire, it it is invaluable. Scarcely any wholesome thing in the breed line can be prepared more readily. It can be made still thinner and baked qnicker. It is good, either crisp or moist. For emergencies alone, every house-keeper will find it convenient to be able to make the breakfast cake. Many use oetmeal mixed with buckwheat, wheat or corn, for griddle cekes. For this use it should be cooked first. Take, sey one-half pint of the porridge or the mush, diffnse it in one quart of water and add the wheat meal, sifting it in and stirring slowly.—*Western Rural.*

The Philosophy of Washino Flannels.—Many persons buy flannel partly cotton to avoid the shrinkage in washing which is supposed to be inevitable. We have in the honse all wool Shaker flannel which has been washed every other week for two years, and although nearly worn ont the shrinkage is scercely perceptible. The secret of washing lies in two perticulars. First, the soap used must contein no resin, as this hardens the fibres of the wool. Flannel eoap, so ealled, is manufactured by our leading soap boilers, and differs from other lanndry soeps chiefly in conteining no resin. Second, no water below 110° or 112° Fahrenheit ever comes in contact with the flannel. Our white flannels take precedeuce over all the rest of the washing. We fill the Doty washer with soap suds, pass the flannels through it, wring them out, scald in blue weter, wring agein and heng out immediately, then go on with the rest of the washing. Blankets are weshed in this way as easily as sheets, and feel as soft and look as nice almost as when they cbme from the store. If one hes no washer, with a wringer and a pounding barrel, blankets and flannels need never come in contact with any bnt boiling water,—*Cor. N. Y. York-Tribune.*

To Boil Corned Beef.—If the piece is very selt, let it soak over night. If young beef and properly corned, this is unnecessary. For boiling, throw cold water over it after washing off the salt, letting the meat be well covered. The rule is twenty-five minntes to a ponnd for boiling meats, but corned beef should never be boiled; it should only simmer, by being placed on a part of the range where the simmering can be nuiuterrnpted from four to six hours, according to the size of the piece. If it is to be served cold, let the meat remain iu the liquor nntil cold. Tough beef can be made tender by letting it remein in the liquor until the next day, and then bringing it to the boiling point jnst before serving. For rnmp pieces this is a snperior method. A brisket or plate-piece may be simmered until the bones can be easily removed; then fold over the brisket-piece, forming a squere or oblong piece; tie over it a piece of muslin, place sufficent weight on top to press the parts closely together, and set it where it will hecome cold. This gives us e firm, solid piece, which, eeten in slices, is a delightful relish.—*Hearth and Home.*

Observations on Preserves, the Boiling of Sugar.—All preservee ehould be kept in a very dry plece, and so covered as to exclude all air. If a very small quantity of suger hes been used, a warm plece does no harm, bnt when not properly boiled, that is, boiled sufficiently long, but slowly, heat makes them ferment, and demp makes them mouldy. For the first two months efter they are made sweetmeats should he inspected frequently, that they mey be reboiled in case they are not likely to keep.

Boiling the sugar is the great art in prescrving. Few people are aware that in two or three minntes a syrup over the fire passes from one gredation of boiling to another, celled by confectioners "degrees of boiling." Attention is only drawn to this fact in order to gnard against *under boiling*, which prevents preserves from keeping, and against too qnick aud too long boiling, which makes them candy.—*Ex.*

Cream Tapioca Puddino.—Soak 3 teblespoonsful of tapioca in water over night, ponr off the water and put the tepióca into a quart of boiling milk, and boil ten minutes. Beat the yolke of fonr egge with a cup of sugar, add 3 tahlespoonsful of prepared cocoanut, and etir in and boil five minutee longer. Pour into a white pudding dish—beat the whitee of the fonr eggs to a stiff froth with three tablespoonefnl of eugar. Put thie over the pudding, sprinkle prepared cocoanut over the top, and brown five minutes.

Apple Fritters.—Thie is a favorits dish with meny, and often prefsrred to dumplings. We like them prepered thus: Meke a batter, not very stiff, with one quart of milk, three eggs, and flour to bring it to a right consistance. Pare and core helf a dozen lergs apples, and chop them well in the batter. Fry them in lard, as you would donghuuts. For trimmings, we like powdered white suger bsst, though good brown sugar will do.

Patent Flour.—Take 6 lbs. whsat flonr, mix 5 tse-spoonsful dry carb. sode (carefully pulvsrized) through it; then 7 do. cream tertar, and 6 do. of salt. Incorporats these, end you have rissn cakes at hand, to which add either milk or water, shortening or not, as suits, and you heve ssveral kinds or what is called soda cake. To this quantity of flour ¼ lh. bntter wonld answer.

Cleaning Stoves.—Stove lustre, when mixed with turpentine and applied in the usuel manner, is blecker, more glossy and durable then when mixed with any other liquid. The turpentine prevents rust, and when put on an old rusty stove, will make it look as well as new.

Wistaria Versus Flies.—A New York housekeeper has discovered that the wistaria creeping plant will keep out honse-flies. The pestiferous insects will not enter a window where one of these creepers is growing.

Iron Work at Sacramento.

The wrough:-iron depertment of the Central Pacific Railroad works in this city, says the Sacramento *Record*, has on hand at this time the heaviest job of forging ever undertekeu on this coest, being the manufacture of a wrought-iron main shaft for the bay steamer *El Capitan*. The shaft is to be twenty-eight feet in length; diameter of bearings, fourteen inches; diameter between bearings, eleven and a helf inches, and the work when completed will weigh six and one-helf tons. Aside from the messiveness of the work undertaken, there are other features of highly interesting siguificence. This shaft is being wrought from scrap iron, including the smallest anvil chippings, with scraps weighing from one-fourth of a pound to ten pounds. In this process all the scrap iron obtaineble is utilized. To present it in detail the process commences with the

Scrap Pile.

The screps are piled on a board in dimensions about 12 by 16 inches, the piles rising to the height of six inches. The piliug requires expert and skillful hands, and are so builded es to stand interlocked by the longest scraps used, the interstices being filled with the smellest scraps used. These weigh 150 pounds each. Six of these are placed in the "Bloom Furnace" at one time. The boards are consumed at once, but the entangled scraps lay together in the fire, and when in bloom from the intense heat, is lifted from the fire with bars. This bloom is speedily converted into a sleb under a steam hammer, the drop of which weighs 3,600 pounds. The ber of iron thus produced is equal if not

Superior lo the Besl Norway,

Being completely withont grain, and sustaining the pnnch without the least sign of check. The coal used is a Welsh bituminous coal, costing at the furnace $13 per ton. Careful estimates prove thet the iron in the slab costs less than four cents per pound. Bar iron of this size costs six csnts in the market, and the quality is much inferior. The scrap waste is twenty-two per cent.

The Slea ner Shall

Under consideration is made from the slah iron above described. A "porter bar" is used to huild npon. With this har the slabs are handled. A welding bloom in the constructiou of the bar reqnires one and a half hours iu heating. After the welding, a finishing and rounding heat requires three-fourths of an hour in heating. After finishing the sleg eud of the shaft is screped, end more sleb is added. Thus the ponderous shaft grows in length and is finished smooth and round by water-hemmeriug. The work when finished is as if rolled. The cntting of the fag end of the sheft showed that the fourteen inches of diameter was solid throughout; not a flew or double is revealed. The work began on Tuesdey, the 3d inst., running two shifts of men; seven in the deytime end nine at night. It will be finished by Thursday. When done, it is estimated that it will cost seven cents per pound. A sheft of this size in the rough, would cost in the Eastern markets fourteen cents per pound.

The Bloom Forge

Used in this work has en exterior measnrement of eighteen by seven feet. It is run by a steem blast. The boiler in which steam is geuerated to run the blast is placed over the furnace so that the blaze from the latter passes through it, thus using the coal for a double purpose. All the appliences nsed in this work are massive. The crene, the furnece aud the hammer are proportioned to the ponderous task, and to watch its progress is

A Spectacle of Fascinaling Interesl.

As the mighty iron column comee out from under the hammer—smooth, round and eolid—itie with difficulty that belief is retained of ite having been wronght from the infinite number of emall scraps; nor can the unpracticed eye see in the huge piles of scraps remaining, the possibility of another such a column. The welding blooms under the hammer dazzle the eye, and the intense hsat drives the spectator to a safe distance. The brevs and stalwert workmen, howevsr, stend into the work, which, under the pounding blows of ths hemmer, hes mors ths ssemings of a gallantly-sustained battle than a peacsabls process of manufacturs.

The Result of Ihe Experimenl

Has proven setisfectory, and hes significance thet will be highly gratifying to this city. It is fully dsmonstreted that bar-iron cen be produced from scrap chsaper then it cen be imported and sold, while the quelity of iron produced is greatly superior to the iron of commerce, or of bsttsr quality then the rolled iron of any country cen be. It is also certain now that ths heevy steamsr work of the bay will be dons hers. It is further ascertained thet ths works of the road ars competent to auy mechanical emergency; and this confidence is further proven by the fact that the construction of

Ten Locomolives

Will be commenced at once. These are to be constrncted entire in the shops here, with the single exception of the steel tire for the driving-wheels. The frames will be made from scrap, and as also the axles and all other heavier parts. Thus the railroed works of this city have grown and devcloped into manufecturing establishments of the first maguitnde, and Sacramento mey rejoice in being the seat of the most considerable and vigorous mannfacturing interest on the coast. We acknowledge onr indebtedness to Superintendent Towne, Mester Mechanic Stephens, and Mester Irónsmith Leshells, for iuformation and courtesy. During the progress of the work of forging the shaft, a large number of persous have visited the shops, and es a knowledge of the interest attached to the undertaking exteuds, the number of visitors increases. The work will be finished by Thursday of this week, and a visit, particularly at night, will interest aud amply repay the intelligent visitor.

Mining in Nevada County.

Teu days ago it looked as though the rainy seeson was upon us, says a *Bulletin* correspondent whose letter is dated from Nevada City, but only enough water fell to set the ranchers plowing. Very few of our large hydaulic miners are yet ready. Tons of iron have been nsed, and thonsands of feet of new pipe made in this city this seeson for miner's nse, and teams are deily hauling loads of it to the points where it is to be used.

The Old River Channel.

Jacobs & Sargent's claims, at Queker Hill, were sterted up at oue poiut during the last rain. These famous claims are on one of the old river channels, and surveys made on our county roads by the lete County Surveyor, have demonstrated that the course of this river was from sonth to north; thet Dutch Flat (Placer county) on the south, and Columbia Hill (Nevada county) on the north, are on the seme chennel. One of the most favorable points for observation on this line is at Blue Tent, where the bed-rock is 300 feet lower than et Queker Hill, which is distant about seven miles. Here cen be seen where and how the present stream—the South Yuba—broke throngh the old chennel, which wes about 3,000 feet wide here, and one can look directly across the river upon its plainly traced continuence to the north. There is not another as good a point in the county for the development of a first-class hydreulic mine as exists here. The gorges and cañons are very abrupt, and tunnels of from 500 to 700 feet in length would pierce the inexheustible gravel beds on the Blue Lead to the bed-rock. On the other side of the river, at North Bloomfield, they are running a tunnel nine thonsand feet in length to reach their hasin. Why dou't some of your San Francisco capitalists look at this side? They are fortunes in it. The outer and more shallow deposits have been rich. The bars below this point on the river heve also been very rich. All the evidences of a chennel are here in the washed boulders, the old blackened and petrified trees lying in the course of the lead, and in every direction. Water by the thonsands of inches is running to waste in the river, which ought to be crumbling down the banks. Somebody will ssek it after awhile. Bnt onr gold mines are not the only onee which promise well.

Iron Mines.

We have immense iron mines, or mouuteins, and will probably at some future day furnish all of thet metal required for use on this coest. I remember thet, in 1856, just before the great fire of thet year, which laid this city in ashes, one of our old citizens brought in about a ton and a helf of ore to be smelted at Coker's, which was the perent of our present Nevada Foundry. The fire rendered that fruitless for the time. Letely another party has discovered an immense deposit about three miles from this city. It is said to be 70 per cent. pure iron, the croppings 100 feet wide, and it is found on both sides of the hill which containe it. Wood and water are plenty, and limestone ie within convenient distance. Now, why should we not have our furnaces and rolling-mills—make our own neils end rails, eupply the coast, and become the Pittsburgh of the Pacific? I send you a sample of the ore. Shortly a car-load is to be eent to your city for testing. This kind of black diamond won't stand "salting."

Our Copper Mines

Are again receiving some attention, and, if the operations now beiug cerried on under the direction of G. F. Destken, a practicel mstallnrgist, provs successful, we shell have a rsvival of that business.

Quertz operations ere ective, end ths work is plenty at good wages for skilled workmsn.

Kern County Mineral Vein System.

The mineral belt, cerrying ths systsm of veins here, says the Havilah *Miner*, pnrsues a north-west and southsast direction. It is about forty miles wide and seventy miles long, the town of Hevileh being handsomely located neer its csnter. (Thers ars many othsr miues in the county situeted in smellsr bslts which bound it on the east nsar Sagelend and on the west et White River.) Within our aree the bnlk of the more extensively developed mines are located. The entire belt ie cut and ribbed with goldbearing veins which cut its course diagonally, running generally in an easterly direction; but occasionelly veering off at a direct angle to the uorth and south. The vein matter is principally quertz; very little foreign rock being discovered in it. Its walls are always grenite or slate. The vein ledges, though almost inveriably well walled, are not massive, but in keeping with the general average width of all gold beering ledges on the coast, varying from two and a helf to six and ten feet. (The Big Blue lode et Kernville is between 60 and 70 feet thick.) They pitch at angles of 35 to 85 degrees.

The mineral belt to the west of Havilah commences et White River, running from Tulere into Kern couuty, ranging from there to Long Tom mining district, thence east to Delonega mining district; skipping a few miles over en unprospected conntry brings us to the once famous Keyesville mining district which was abendoned some years ago in consequence of the old cause—bad menagement and inexperience. A few miles to the right of Keyesville is Kernville which has now all of its stemps in operation on rock of a very rich grade. Crossing Kern river to the Havilah side the mines in this large belt continue, the first miniug district being the Washington, which includes Havileh with its nnmerous mines, and extends south to Caliente miuing district, a distauce of thirty miles. The leads mostly run eest and west in this portion of the belt. Next to this come Erskine Creek, where the lodes do not seem to obey any rule but run at random in network style. The lodes of the newly discovered miues—Grizzly Mouutein District—run almost directly north and sonth. In Pi Ute, Sageland and Cleraville districts the ledges run nearly east and west, verying slightly toward the north aud sonth occesionly. The most of the rock iu this district is of the best high grade ore, end turns out under the stemps $20 to $38 per ton. For the number of tons of ore crushed here, we can truthfully sey thet no camp on the coast has ever averaged as many dollars per ton as Havileh.

Oregon Mines.

The Discovery of Coal

On the South Fork of the Santiam, about eight miles above the town of Lebenon, in a spur of the Cascade renge, is a matter of great importance to the material interests of the country, and to all the present and ulterior objects of the Canal corporation. A company has been organized to work the mine called the Oregon Beaver Coel mine, of which Ex-Governor D. W. Ballard, of Idaho, now living at Lebenon, is the President. Abont fifteen tons have been taken out of the mine and tested in a variety of ways. The coal is well adepted for blacksmiths, furneces, grates and for meking gas. I saw it tested by Frank Wood, one of the most intelligent mechanics in Albeny, in the presence of C. P. Burkhart. There is no donbt of plenty of coel in this district; all that is wented to make it au extensive and profitable industry, is capital and skill; both will be forthcoming in due time. James Lindley has discovered another mine, in the seme spnr of the Cascedes, that promises to be eqnally rich end valuable. The coal of both the mines partske of the anthreeite and bituminons properties—the latter predominating.

Minerals in Ihe Cascades.

There is not the least douht but thet the Cascade renge of mounteins, and their numerous spurs, will prove one day, not far distant, a mine of wealth, consisting of coal, iron, lead, coppsr, silver and gold. Lead and copper mines are now heing worked on the Sentiam that yield 80 per cent. of pure metals. The railroads, canals and other enterprises, being built and in comtemplation, are the precursors of a grand futnre for the developmeut of the resonrces of Oregon, thet cennot now be valued or estimated.—*Cor. Bulletin.*

Idaho Mine.—The Grass Valley *Union*, of the 11th speaks of two gold bricks from the Ideho mine, which together weighed abont $16,000. They were taken from the amalgamators after a run of six days. The six deys of the week before gave over $12,000, or $28,000 for twelve days' run. The batteries were not cleaned up. The Idaho will have an interesting annnal report this year.

Indian Relics.—Seye a Selt Lake dispatch of December 12th: Major Powell, the explorer, arrived from Arizoua and reporte that an expedition has been organized, of great interest and scientific value, in regard to the mythology of the Ute Indians. Many relics of extinct racee and civilization have been discovered.

Business Cards.

H. C. BENNETT,
STATISTICIAN.
Reports and estimates made about all departments of Production, Commarce, and Manufacture, of the Pacific Coast. 5v24-tf

AMOS BOWMAN,
Mining and Topographical Engineer.
No. 637 Kearny Street, near Clay. Residence, 17 Rondel Place (Mission and 16th). ac19

RICHARD H. STRETCH, Civil Engineer,
City and County Surveyor.
Office—Room 16, City Hall. 11v24-3m

GILES H. GRAY. JAMES M. HAVEN.
GRAY & HAVEN,
ATTORNEYS AND COUNSELORS AT LAW,
In Building of Pacific Insurance Co., N. E. corner California and Leidesdorff streets.
SAN FRANCICO.

JOHN ROACH, Optician,
429 Montgomery Street,
S. W. corner Sacramento.
Surveying Instruments made, repaired and adjusted
22v17-3m

N. P. LANGLAND,
Stair Builder, Wood Turner, and
SCROLL SAWYER.
No. 488 Brannan Street.....SAN FRANCISCO.
And No. 9 Q St., bet. First and Second,
21v23-tf SACRAMENTO.

WM. BARTLING. HENRY KIMBALL.
BARTLING & KIMBALL,
BOOKBINDERS,
Papsr Rulers and Blank Book Manufacturers.
505 Clay street, (southwest cor. Sansome),
15v12-3m SAN FRANCISCO.

SAN FRANCISCO
CORDAGE COMPANY.
Manila Rope of all sizes. Also, Bale Rope and Whale Line constantly on hand. Tarred Manila Mining Ropes of any size and length manufactured to order.
TUBBS & CO., Agents,
28 611 and 613 Front street.

C. J. COLLINS,
HATTER,
No. 321 Montgomery street, near California street, under I. O. O. F. Hall.
Maeonic, Army and Navy Goods a Specialty.
22v24-3m

J. F. PAGES,
SEAL ENGRAVER,
AND LETTER CUTTER,
Brass and Steel Stamps and Dies, 608 Sacramento street, San Francisco. Orders by express promptly attended to.

The Merchants' Exchange Bank
OF SAN FRANCISCO.
Capital, One Million Dollars.
LEVI STEVENS.....President.
E. N. VAN BRUNT.....Cashier.
BANKING HOUSE,
No. 415 California street, San Francisco.
25v20-qy

STEINWAY & SONS'
Patent Agraffe Pianos,
GRAND, SQUARE AND UPRIGHT.
Pianos to Let.
A. HEYMAN,
I street, between Sixth and Seventh,
ma18-tf Opposite old Capitol, SACRAMENTO.

WALTER TURNBULL. JAMES HAY SMITH.
TURNBULL & SMITH,
Commission Stock Brokers,
Union Insurance Co.'s Building, 418 California Street,
(Up Stairs,) SAN FRANCISCO.
WALTER TURNBULL, Member S. F. Stock & Ex. Board.

$1,000 REWARD! For any case of Blind, Bleeding, Itching, or Ulcerated Piles that Dr Bing's Pile Remedy fails to cure. It is prepared expressly to cure the Piles and nothing else. Sold by all Druggists. Price $1.00.
O. F. RICHARDS & Co., Agents, corner Clay and Sansom streets, San Francisco, Cal.

OAKEY & SON'S EMERY AND BLACK LEAD MILLS, Blackfriar's Road, London, England.
OAKEY'S WELLINGTON KNIFE POLISH. Packets, 3d each; tins, 6d., 1s., 2½ 6d., and 4s. each.
OAKEY'S INDIA RUBBER KNIFE BOARDS from 1s. 6d. each.
OAKEY'S SILVERSMITHS' SOAP (NON MERCURIAL), for Cleansing and Polishing Silver, Electro-plate, Plate-glass, Marble, etc. Tablets, 6d. each.
OAKEY'S GENUINE EMERY, GRAIN AND FLOUR.
OAKEY'S EMERY AND GLASS CLOTH.
OAKEY'S CABINET GLASS PAPER, BLACK LEAD, etc.
OAKEY'S GOODS SOLD EVERYWHERE by Ironmongers, Grocers, Oilmen, Brushmakers, Druggists, etc. 21v25-1y

PROPOSALS

For Material and Work

FOR A PORTION OF THE

New City Hall Building.

OFFICE OF BOARD OF CITY HALL COMMISSIONERS,
SAN FRANCISCO, November 25, 1871.

SEALED PROPOSALS FOR FURNISHING CERtain material for a portion of the New City Hall Building and Hall of Records and for the construction thereof, will be received at the office of the Board of City Hall Commissioners, corner of McAllister and Leavenworth streets, until 12 o'clock M. of FRIDAY, the 27th day of December, A. D. 1872, except for Iron Works, and for that, until 12 o'clock M. of FRIDAY, the 24th day of January, A. D. 1873, viz:

10,000,000 Brick;
5,000 Barrels Lime;
5,000 Barrels Cement;
Stone for Facing of Basement Story and Building the same in the Walls, etc;
Rolled Iron Joists;
Iron Girders and Columns;
Building Brick in the Walls, etc., including Bonding, Anchors, etc;
Building Brick Facing of Basement Story;
Fixing, Fitting and Laying Iron Joists and Girders.

All according to the Printed Specifications, Schedule, etc., and Plans and Drawings.

The Printed Specifications and Printed Forms of Proposals can be had on application to the Secretary, and the Plans and Drawings can be seen, and all further information—as to the details of the work, etc.—can be obtained from the Architect, at the office of the Board.

The Bids must be endorsed for the Material proposed to be furnished or Work done, and addressed to the Secrstary of the Board.

No Bids will be entertained unless made on the specified "Printed Forms of Proposal," and accompanied by a certified check, or bond with twe good and sufficient sureties, in a sum equal to 10 per cent. of the total sum of the tender, to be returned on the dne entering into the contract of the party to whom it may be awarded, or to be forfeited, if the party fail to enter into the said contract.

Each bidder for Brick will state what quantity he will furnish within one year, and at what times he will deliver them. Samples must accompany each bid.

The Board reserve the right to reject any or all bids.

Payments will be made monthly in "City Hall Warrants," of 75 per cent. of ostimated amounts due, and the remainiug 25 per cent. when the contract is completed.

P. H. CANAVAN,
JOS. G. EASTLAND,
CHAS. E. McLANE,
Board of City Hall Commissioncrs.
n630-1m

The California Powder Works
No. 314 CALIFORNIA STREET,
SAN FRANCISCO.
Manufacturers and have constantly on hand
SPORTING,
MINING,
And BLASTING
POWDER,
Of SUPERIOR QUALITY, FRESH FROM THE MILLS. It being constautly received and transperted into the interior, is delivered to the consumer within a few days of the time of its manufacture, and is in every way superior to any other Powder in Market.
We havo been awarded succesively
Three Gold Medals
By the MECHANICS' INSTITUTE and the STATE AGRIOULTURAL SOCIETY for the superiority of our products over all others.
We also call attention to our
HERCULES POWDER.
Which combines all the force of other strong explosives now in use, and the lifting force of the BEST BLASTING POWDER, thus making it vastly superior to any other pompound now in use.
A circular containing a full descriptlon of thia Powder can be obtained on application to our Office.
16v20-3m JOHN F. LOHSE, Secretary.

FRED. KRAJEWSKI,
MANUFACTURER OF TOOLS
—FOR—
Molding, Turning, Carving, Etc.
Mortise Chisels, Blind Chisels, Crotchet Chisels, and also all kinds of Screws for Stair Work and Sash Joints on hand and made to order.
Berry etreet, bet. Fourth and Fifth, SAN FRANCISCO.
25v23-tf

AVERILL'S
CHEMICAL PAINT,
Of any deeired Shade or Color,
Mixed ready for applicetion, and sold by the gallon.
It la Chesper, Handsomer, more Durable and Elastic than the best of any other Paint.
Office, corner Fourth and Townsend streets, San Francisco. Send for sample card and price list.
15v23-3m HELY & JEWELL, Agents.

M. LAINE CARTIER & CO.,
LAPIDARIES,
NO. 618 MERCHANT STREET,
San Francicoo.

Metallurgy and Ores.

RODGERS, MEYER & CO.,
COMMISSION MERCHANTS,
ADVANCES MADE
On all kinds of Ores, and particular attention
PAID TO
CONSIGNMENTS OF GOODS.
4v16-3m

LOUIS FALKENAU,
STATE ASSAYER,
Analytical and Consulting Chemist,
421 Montgomery St. up stairs.
Particular attention given to the Analysis of Ores Minerals, Metallurgical Products, Mineral Waters Soils, Commercial Articles, Etc.
One or two pupils can receive theoretical and practical instruction in Assaying, Analysis, or any particular branch of Chemistry at the laboratory. 11v21-3m

O. W. STRONG. W. L. STRONG
C. W. STRONG & CO.,
Metallurgical Works,
No. 10 Stevenson Street, near First, SAN FRANCISCO
We purchase Ores, Bullion, etc. Ores worked and Tests made with cars. Also, Assays of Gold, Silver, Copper, Lead, Tin and other Metals. 23v22tf

LEOPOLD KUH,
(Formerly of the U. S. Branch Mint, S. F.)
Assayer and Metallurgical
CHEMIST,
No. 611 Commercial Street,
(Opposite the U. S. Sranch Mint,
SAN FRANCISCO, CAL. 7v21-3m

CALIFORNIA ASSAY OFFICE
No. 512 CALIFORNIA STREET,
One Door West of Montgomery.....SAN FRANCISCO.
J. A. MARS, Assayer.
☞ Analysis of Ores, Mineral Waters, etc. 10v20

Richardson & Co., Copper Ore Wharves,
SWANSEA.
RICHARDSON & Co. have been for thirty years established in Swansea as Agents for the preparation, Sampling, Assaying, and Sale of Copper, Silver, Gold, Lead, Zinc, and al other Ores and Metals, for which they have extensive Warehouses and Wharves under cover, 1,000 feet of Quay Frontage within the Floating Dock, and the most complete Machinery and Appliances. They are also prepared to make advances against Ores in anticipation of realization, and to guarantee all payments when required. 17v24-1y

PLATINUM
Vessels, Apparatus, Shsst, Wire, Etc., Etc.
For all Laboratory and Manufacturing Purposes
H. M RAYNOR,
25 Bond street, New York.
Platinum Scrap and Ore purchased. 22v18

United Royal Smelting Works
OF THE
KINGDOMS OF PRUSSIA AND SAXONY.
General Agency, R. J. ROBERTSON, Hamburg, GERMANY.
Whose Repreeentative for the United States,
H. ROBERTSON, 149 Broadway, New York,
Is ready to receive consignments of
ORE and all kinds of FURNACE STUFF
For the abeve named Works.
FULL PARTICULARS GIVEN ON APPLICATION.
16v25-3m

Important to Miners and Mill Men.
Silvsr-Platsd Copper Amalgamating Plates, for Saving Gold.
Of all aizes and in any quantity, furnished to order. Full instructions sent for operating.
Particular attention given to plating goods for Builders, Plumbers, etc. Hotel and Restaurant work replated.
SAN FRANCISCO GOLD AND SILVER PLATING WORKS,
655 Miesion street, San Francisco.
2v25-3m E. G. DENNISTON, Proprietor.

Magnesium Limestone, Magnesite, Carbonate of Magnesia, Porcelain Earth, Etc.
Persons desirous of contracting for a supply of the above article, or knowing where it can be readily obtained, will confer a favor by addressing
GEO. G. W. MORGAN,
742 Harrison street, San Francieco.
P. S.—The article wanted is known nnder the several names heading this adv. It is a peculiarly white and hard aubstance, infusible, looks like chalk, but ecratches wood instead of marking it. de14-1m

Patent Ore Bags—A New Article.
These bags, by virtue of a patent lining, provent ore siftings, and are the most durable bags used.
For sale by A. GERBERDING,
22v25 318 Front Street, Room 10. S. F.

Varney's Patent Amalgamator.
These Machines Stand Unrivaled.
For rapidity pulverizing and amalgamating ores, they have no equal. No effort has been, or will be spared to have them constructed in the most perfect manner and of the great number now in operation, not one has ever required repairs. The constant and increasing demand for them is sufficient evidence of their merits.
They are constructed so as to apply steam directly into the pulp, or with steam bottoms, as desired.
This Amalgamator Opsratss as Follows.
The pan being filled, the motion of the muller forces the pulp to the center, where it is drawn down through the apperture and between the grinding surfaces.—Thence it is thrown to the periphery into the quicksilver. The curved plates again draw it to the center, where it passes down, and to the circumference as befors. Thus it is constantly passing a regular flow between the grinding surfaces and lute the quicksilver, until the ors is reduced to an impalpable powder, and the metal amalgamated.
Setlers made on the same principle excel all others They bring the pulp so constantly and perfectly in contact with quicksilver, that the particles are rapidly and completely absorbed.
Mill-men are invited to examine these pans and setlers for themselves, at the office, 229 Fremont Street,
San Francisco

JOHN TAYLOR & CO.,
IMPORTERS OF AND DEALERS IN
ASSAYERS' MATERIALS,
Chemical Apparatus and Chemicals,
Druggists' Glassware and Sundries,
PHOTOGRAPHIC GOODS, ETC.,
512 and 514 Washington street, SAN FRANCISCO
We would call the special attention of Assayers Chemists, Mining Companies, Milling Companies Prospectors, etc., to our large and well adapted stock o
ASSAYERS' MATERIALS
—AND—
Chemical Apparatus,
Having been engaged in furuishing these supplies since the first discovery of mines on the Pacific Coast.
☞ Our Gold and Silver Tables, showing the value per ounce Troy at different degrees of fineness, and valuable tables for computation of assays in Grains and Grammes, will be sent free upon application.
7v25-tf JOHN TAYLOR & CO.

To Mill Men and Miners.
I am now manufacturing
CYANIDE OF POTASSIUM,
Which I can sell upon better terms than any other dealer on the Pacific Coast.
I make three grades or qualities to suit the requirements of different consumers.
I will be glad to furnish prices to any person addressing me on the subject.
HENRY G. HANKS,
Manufacturing Chemist,
PACIFIC CHEMICAL WORKS, SAN FRANCISCO.
24v25-tf

CHARLES F. KIRCHNER,
Sampler and Crusher of Ores,
NO. 11 DRUMM STREET,
San Francieco.

LEA & PERRINS'
CELEBRATED
Worcestershire Sauce.

Declared by Connoisseurs to be the only good SAUCE
Caution Against Fraud.
The success of this most delicious and unrivalled Condiment having caused certain dealers to apply the name of "Worcestershire Sauce" to their own inferior compounds, the public is hereby informed that the only way to secure the genuine is to ASK FOR LEA & PERRINS' SAUCE, and see that their names are upon the wrapper, labels, stopper and bottle.
Some of the foreign markets having been supplied with a spurious Worcesterehire sauce, upon the wrapper and labels of which the names of Lea and Perrins have been forged, L. and P. give notice that they have furnished their correspondents with power of attorney to take instant proceedings against manufacturers and vendors of such, or any other imitations by which their right may be infringed.
Ask for LEA & PERRINS' Sauce, and see name on wrapper, label, bottle and stopper.
Wholesale and for export by the Proprietors, Worcester; Crosse & Blackwell, London, &c., &c., and by Grocers and Oilmen universally. 15v24-tf

L. SCHUMANN,
PIONEER
Meerschaum Pipe Manufacturer,

No. 341 KEARNY STREET,
Between Bush and Pine streets, San Francisco
The first and only Manufactory on the Pacific Coast. MEERSCHAUMS MOUNTED WITH SILVER. Meerschaum Pipes Boiled and Repaired. Amber Mouth-pieces Fitted.

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PATENTS & INVENTIONS.

Telegraphic List of U. S. Patents Issued to Pacific Coast Inventors.

[Reported Officially for the Mining and Scientific Press, Dewey & Co., Publishers and U. S. and Foreign Patent Agents.]

By Special Dispatch, Dated Washington, D. C., Dec. 17th, 1872.

For Week Ending December 3d, 1872.*

Animal Trap.—Henry J. Baddeley, Napa, Cal.

Dumping Cart.—George Zoanny, Napa, Cal.

Speaking Tubes. — Frederick A. Well and Julius Finck, S. F., Cal.

Coffee-pot.—Martin Hofman, S. F., Cal.

Grain Separator.—Jeremiah B. King and Orrait Cronkite, Sacramento, Cal.

Harrow.—Andrew W. Bohaker, Napa, Cal.

———*The patents are not ready for delivery by the Patent Office until some 14 daye after the date of issue.

Note.—Coplce of U. S. and Foreign Patents furnished by Dewey & Co., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

New Incorporations.

Red Branch M. Co.—Dec. 14. Location: Forest Township, Sierra county, California. Capital stock, $220,000 in 22,000 shares. Trustees—Frank Mahon, Jas. Daly, Daniel Sweeney, M. Cooney, W. V. Gaffey, Charles Donnel and Thomae Kerns.

Oriental M. and Tunnel Co.—Dec. 14. Location: Nevada. Capital stock, $3,000,000 in 30,000 shares. Trustees—A Whitney, J. Clem Uhler, Wm. H. Ashton, Samuel Purdy and George Helm.

Cor G. M. Co.—Dec. 16. Location: Grass Valley District, Nevada county, Cal. Capital stock, $3,000,000. Trustees—J. H. Stevens, C. L. Tuttle, G. A. Treadwell, William Blandlng and Joseph Trench.

California S. M. Co.—Dec. 16. Location: Storey county, Nevada. Capital stock, $5,000,000 in 50,000 shares. Trustees—A. K. P. Harmon, W. E. Dean, A Dohle, Robert Sherwood and Martin White.

Asphalt Paving Co.—Dec. 16. Objects: Paving streets and sidewalks with stone, concrete and asphaltum, and quarrying and sellling stone for building purposes. Capital stock, $500,000. Trustees—Frank M. Brown, Ahner Dohle, J. S. Emory, W. A. Goodyear, J. T. Hoyt, C. T. H. Palmer, George C. Potter, S. R. Throckmorton and Watson Webb.

Plumas Tunnel Co.—Dec. 17. Location: Lassen county, Cal. Capital stock, $3,000,000 in 30,000 shares. Trustees—S. Heydenfeldt, James McLaughlin, D. T. Bagley, L. Leavitt and Thomas Reilley.

Pacific Tobacco Manufacturing Co.—Dec. 16. Object: To cultivate and manufacture tobacco. Capital stock, $500,000 in 5,000 shares. Trustees—J. W. Stow, J. D. Culp, Tiburcio Parrott, W. W. Montague and Wm. M. Hoover.

Banner Cons. G. and S. M. Co.—Dec. 18. Location: Diamond Mining District, White Pine county, Nevada, and in California. Capital stock, $5,000,000 in 50,000 shares. Trustees—P. H. Wells, W. Codington, Jamaa Edwards, John Bamber and James Dunn.

McElroy Gravel M. Co.—Dec. 18. Location: Oalaveras county Cal. Capital stock, $2,500,000 in 50,000 shares. Trustees—James McElroy, T. B. Beach, S. A. Chapin, Stephen Hutchinson and H. C. Lille.

The Sidney Brooks Tunnel and Lode Compauy have filed a certificate of the increase of their capital stock from $500,000 to $2,000,000.

Meetings and Elections.

Pioche Phœnix M. Co.—Dec. 16. Trustees—Robert Sherwood (President), C. W. Fox, G. W. Beaver, John McGarvey and Edward Donohue. Secretary, O. E. Elliott; D. Hardy, Superintendent.

Charter Oak Cons. M. Co.—Dec. 16. Trustees—A. K. Grim, J. P. Hutchinson and Jos. L. King. Secretary, C. W. R. King.

Hope Cons. M. Co.—Dec. 16. Trustees—Wm. R. Wheaton (President), Geo. W. Beaver, J. D. Fry, A. G. Ahell and Jos. S. Paxson (Secretary).

Empire M. and M. Co.—Dec. 18. Trustees—Robert Sherwood (President), E. J. Baldwin, J. W. Coleman, Oamille Martin and A. Goldsmith. Secretary, Geo. R. Spinney; Superintendent, A. Borland.

The Ophir annual election was held on the 18th Inst., and resulted in the re-appointment of the old Board.

Empire Mill and Mining Company.

The report of W. E. Dean, retiring Secretary of the Empire Mill and Mining Company, furnishee the following financial exhibit of the operations of that Company for the paat fiscal year:

DISBURSMENTS.

Indebtedness, per previous report	$10,012
New shaft	58,415
Installment on machlnery for new shaft	5,000
Expense account	4,205
Interest account	1,894
Imperial quota for October and November	3,996
Mine expenses	242
Legal expenses	400
Miscellaneous	141
Total	$84,305

RECEIPTS.

Assessment No. 8	$7,290
Assessment No. 9	25,000
Assessment No. 10	50,000
Miscellaneous	2,015
Total	$84,305

The Engine Manufacturing Company, of Connecticut, will commence at once the erection, at Hnntington, Indiana, of the largest car and car-wheel factory in the West. The first buildlng will be over 400 feet long, and the works will require 1,000 men to operate them.

Coal.—A coal mine haa been found in Tehama county, the vein in which is eight feet wide.

A new steamer has been commenced for the Willamette River Tranaportation Company.

Mining in Tuolnmne conty is hindered by the want of water.

The Greatest Need of Our Mining Districts.

Go ask the first man you meet in one of our mining camps, says the Schell Creek *Prospect*, what is his opinion of the District—if it has any real merit. "Merit? plenty of it! ae good ledges as can he found anywhere in the State; every claim isn't a ledge; but a numher of very good ledgee are well known in the District."

That will he about his answer. Ask him how it is, then, that these meritorions ledges are not developed—what keeps the District back, after having started out with so good a name, at home and abroad. What is needed? "Capital!" will be hie anewer; "All the District needs, to bring it up to equal any in the State, is capital."

This conjured np ghoet of unobtainable capital is the nightmare eitting on the breast of eleeping enterpriee. The waste of time, in waiting; the waete of mnscle and food in prospecting—while already little mounde dot the hillsides with the same names ae if certain men had died and been buried in a thonsand places; the waste of writing material and bad English and express envelopes; the waste of conscience in straining a point in favor of an undeveloped fact; these, properly turned to account, would afford capital.

It is seen every now and then, that the few men who industriously set about opening their mine, and working it, if possible, for the actual metal in it, instead of conniving, for the gold notes in somebody's safe, are the men who succeed in bringing their mine to a market. "If your foot is pretty, show it;" if your mine ie rich make people see it. If you want to make somebody believe that your croppings lead down to a broad body of good ore, show them that yon believe it—by sinking between the walls. Wares which go begging in the market are apt to he slighted by money bags. "Good wine needs no hush."

In California, along in the foothills, men are to-day at work, who have been working in the same tunnel for five yeare. We have known cases where they worked a longer time—running for a gravel deposit which they had no certain clue nor guide to, but which they went for in dead earnest, seeing with the eye of faith. These men had no capital to commence upon. They would work awhile, then turn out and work somewhere for wages, till they had food enough ahead to etand another siege. Sometimea one partner would work for wages, while four kept continually iu the tunnel. Year after year they would keep on, until, reaching a certain distance, they etruck the long aought prize, or found that the pursuit had been fruitleaa, and all those years and blows were wasted.

Sometimes these men make—they are atill at it—handsome fortunee. In aome casee, after taking out an abnndance, they aell the claim to capitaliats. But we do not know of a case where one of these men ever make a magnificent fortune by making a tunnel location, pointing toward the Blue Gravel, and then sitting down and waiting for capital.

Great Successes in Ore Smelting.

It is with a great deal of pride says the Salt Lake *Tribune*, that we point to any successful enterprise inangurated here which tends to enhance onr bnainesa prospects by inviting capital to invest in our mining property, real estate or commeicial speculations.

Soarcely more than a year ago there were not lacking people here and even men ofexperience too, who, judging from the developments at that date, regarded the permanency of Utah minea as something by no means assured, and if they did not speak in absolute disparagement of the future, yet their tone wae anything hut that of an aasuring or positive character. Since that time, however, ao numerous and ao rapid have been the developmenta in various camps, that capital has been invested in numerous emelting works which in time have been followed by separating and refining works probably equal to anything of the kind in the world for the amount of capital invested. We allude to the Germania Works near this city.

Yeterday we learned some intereating facts relative to these works and the Saturn Smelting Works near Sandy, under the supervision and management of G. M. Gerriah, Esq., which we regard aa being of more than ordinary interest, inasmnch as they beepeak much for the coming year'e operationa in our Territory.

For the week ending last Snnday morning the Saturn worke produced one hnndred and aeven and a-half tons of bullion, and for the ten days prior to that run, one hundred and forty-two tona were the result, the average value of the bullion being 160 ounces of silver to the ton. Such runa as these have never been eqnaled in the Territory. The Satnrn Co. has lately sold over 400 tons of hullion to the Germania Refining Works, whioh have heen in auch active and auccessful operation that 40 tons a day of the hullion have been separated, and is said by the superintendent to he, in point of ease of separation, far superior to the hullion of Spain, France and Germany.

The Germania Co., by their peculiar process of aeparation, is said to he producing the only really pure metallio lead in the United States, and in conseqnence of thie have already received ordere from the Eaet for all the lead they prodnce. to be nsed there in the manufactnre of white lead, which naturally suggests the query, why not export the white lead at once from Utah?

It is gratifying to chronicle the great success of two such important enterprises, and the thanks and good will of our entire community are due to the energetic gentlemen hy whose experience and business capabilities the preeent results have been achieved.

How Deep Can we Mine?

Since the exhaustion of the English coalfields is an accepted fact, within the compass of three centuries at least, and since the present cost of coal-mining is already affecting the price of iron in all the markets of the world, a few statements in regard to the difficnlty of procnring coal at greater depths than those now reached will be of interest. At a depth of 50 ft. helow the snrface of the earth there is a zone of equable temperature, where the thermometer marks 50°. Observation ehows that this temperature increases at the uniform rate of one degree for every 55 ft. So, at the depth of 1,760 ft. the temperature is about 78°. One mine in England, 1,640 ft. deep, is already worked to a great disadvantage, owing to the failure of the miners to endure the steady heat. In the colliery the shaft is 2,376 ft. deep, and the temperatnre is 98 degress or hlood-heat, and their prolonged labor is impossible. The limit of profitahle mining is therefore about 1,700 ft., and at 2,700 ft. mining is impracticable. At the depth of 4,000 ft. the temperature wonld be 122°, and at 10,000 ft. it would be at the boiling point, if not even higher, as it is possible that the rate accelerates as the descent is made. It is curious to note the Commission of sixteen eminent men of science which was appointed to ascertain how much coal conld be raised from seams already worked, and how much from measures yet untouched, stated, that at the preseut rate of consumption there was a supply of coal in Great Britain for 1,273 yeare, but at the ratio of increase the snpply would not last 276 years. Our figures show that coal cannot be mined at a depth of 4,000 ft., and at 2,700 ft., the limit of physical endurance is about reached. Of course, then, the vast area of coal below that depth, and, indeed, below 1,700 ft., where miners are forced to work shorter hours, and where the temperatnre ia nearly 80°, must remain nntouched. The Commisaionera hardly dared look the situation in the face, and their report in reality is little better that a juggle. Already nearly all the coal above the depth of 1,700 ft. has been raieed, and that below can only be reached at a cost not pleasant to contemplate. The *British Quarterly* estimatea the quantity of that in the next 1,000 ft. at 39,000,000,000 tone, and that in the next 1,000 ft. at 22,000,000,000, and at preaent ratea of increase, the last ton of the 39,000,000,000 will be raised in 1945—and then ont goes Great Britain.

California.—Here is a picture of our great State, from the Eureka, Nev., *Sentinel:* "Was there ever such a conntry before as California? She ia an empire in herself. Were tbe State moved into the sea, there would be nothing needed hy her people but to develop her great and diversified resources. Her wheat crop this year will reach 30,000,000 bushels, and yet her wheat-producing area is not one-fourth appropriated. Her fruits supply the whole Coaat, except Oregon; the East begine to look to her for wines; her wool clip is enormous, and there is growing up within her limite the finest stock of horses and cattle in the world. Yet her population is not 600,000, and not a decade haa passed aince any pretensions were made in regard to California as a great agricultural State. She is not half appreciated yet. Were all the people of the United States congregated within her horders, she would austain them all better than France can provide for her thronging millions. Look at her ship exports; gold, wool, wheat, fruit, wine, and these in no atinted quantities, but by the millions, for her people do nothing small. What a future is in atore for the Golden State, when her thousands of people increase to millions; when her waters are turned into canals to feed the thirsty plaina; when her foothills are covered with vineyards; when all the trade of the mighty, myeterious Eaat is disseminated by half a dozen transcontinental railroade through the Union and to the world beyond. California is a constant study and a constant surprise."

The Virginia Gold Field.—Some montha ago a company of Northern capitalists went to Virginia and quietly hought up large tracts of land, over 2,000 acres, in Spottsylvania county, twenty miles from Fredericksburg, intending to reopen the abandoned gold minea. These mines had been worked by various parties for twenty years, but without profit, not because the preciona metal could not be found in paying quantities, but because the ore was of a character to defy all known methods of treatment. The new company have purchaaed a patent from Prof. Crosby, of Maiue, who apent several years in the mines in Colorado, and succeeded in perfectiog a system for the reduction of all kinds of gold ore at a merely nominal cost, and which he warrants to eave eighty per cent. of the mint assay of orea, the ordinary percentage being about twenty-five. The company have now in operation one of these mills, with a capacity of twenty tons per day, at a cost of about three dollara per ton. They intend to deepen their present ahafts and open others, and introduce machiuery to work them to their full production.

The Pacific Mail Company's Bad Luck.—During the past six months the Pacific Mail Company have suffered a great deal by the loss of some of their steamers and serious accidents to others. The *Oregonian* got on a reef several months ago in the inland sea off Japan, and was badly damaged. Then followed the burning and total loss of the *America* at Yokohama. Then the *Bienville* was lost on the Atlsntic side, and while the *Rising Star* was being prepared to take her place she slipped from the dock and was badly damaged. The *Guatemala* was lost in passing through the Gulf of Tehnantepec and a number of lives were lost. On this side, the *Arizona* and *Constitution* recently met with accidents to their machinery and were badly damaged. Then the *Orizaba* hroke her shaft, and the loss of the *Sacramento*. last week ends the list.

The San Rafael Mines.—I noticed a large lot of provisions and other goods going from Pauley's, McDonalde and Steiner & Klauber's stores to the mines of San Rafael, in Lower California, lately, and, on inquiring, learned that the goods went for Mendelson, Power and other tradere in San Rafael, and that hnsiness, in spite of the protracted drynese, ie improving. The mines are proving rich, and by the "poco a poco" process of a Mexican arastra, a good deal of gold is being got out. How the poor people get a living there at the pricee of the necesearies of life is almost a mystery, and would be qnite so with any people but Mexicans. Flour, $16 a barrel; sugar, 25 cents a pound; and coffee 37½ cents. Everything else in proportion. Since vessels under fifty tons measurement cannot take goods to Ensenada, which is the nearest port to the mines, everything to live on there but beef goes from San Rafael in wagons or on pack animals, costing for freight alone about four cents a pond. All is peace and quiet below onr Southern line.—*Cor. Bulletin.*

In Westphalia, Germany, three large iron companies have combined themselves into one association, whieh is perhaps the greatest connected with the iron trade in the world. The annual production of the works which it controls is 20,000 tons of steel, and 250,000 tone of iron in various forms—pigs, raile, etc.

Potteries.—California has six potteries, of which two are at Sacramento, one at Oakland and one at Antioch. They are engaged at preaent in making articlea of Rockingbam, yellow and earthenware, sewer pipe, red crockery, flower pots and fire brick, hut one of the Sacramento establishments will soon commence to burn terra cotta.

The quartz mines of Calaveras connty are said to be paying well.

San Francisco Metal Market.

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

Thursday, Dec. 12, 1872.

Iron.—			
Scotch Pig Iron, ₱ ton	$50 00	@	55 00
White Pig, ₱ ton	50 00	@	55 00
Refined Bar, bad assortment, ₱ lb	— 04½	@	— 5
Refined Bar, good assortment, ₱ lb	— 05	@	— 5½
Boiler, No. 1 to 4	— 05½	@	— 06
Plate, No. 5 to 9	— 06¾	@	— 07
Sheet, No. 10 to 13	— 07¾	@	— —
Sheet, No. 14 to 20	— 07½	@	— —
Sheet, No. 24 to 27	— 08	@	— —
Horse Shoes	8 00	@	
Nail Rod	10		
Norway Iron	8		
Rolled Iron	5		
Other Irons for Blacksmiths, Minere, etc.	5½	@	6½
Copper.—			
Sheathing, ₱ lb	— —	@	— 45
Sheathing, Yellow	— 38	@	— 40
Sheathing, Old Yellow	— —	@	— 13
Composition Nails	— 28		— 30
Composition Bolts	— 28		— 30
Tin Plates.—			
Plates, Charcoal, IX ₱ box	18 00	@	— —
Plates, I O Charcoal	14 00		— —
Roofing Plates	18 50		— —
Banca Tin, Slabs, ₱ lb	— 50		— —
Steel.—English Cast, ₱ lb	— 16		— 17
Drill	16		17
Flat Bar	19		— —
Plough Points	16		—17
Russia (for mould boards)	12¼		15
Quicksilver.—₱ lb	— 85		— 87½
Lead.—Pig, ₱ lb	5¾		6
Sheet	9		— —
Pipe	8½		— 10
Bar	6½		— 7
Zinc.—Sheets, ₱ lb	— 9½		— 10
Borax.—Refined	— 28		— 30
Borax, crude	— 5		— —

Leather Market Report.

[Reported for the Press by Dolliver & Co.]

San Francisco, Thursday, Dec. 19, 1872.

Shipments of Sole Leather to the East are quite heavy, and prtces are firm, though there has been no advance. Domestic Calf Skin has advanced 10 per cent., in consequence of the large amount destroyed, and French Skins are firm with an upward tendency.

City Tanned Leather, ₱ lb	26@29
Santa Cruz Leather, ₱ lb	26@29
Country Leather, ₱ lb	25@28
Stockton Leather, ₱ lb	26@29
Jodot, 8 Kil., per doz	$80 00@
Jodot, 11 to 19 Kil., per doz	66 00@ 85 00
Jodot, second choice, 11 to 16 Kil. ₱ doz	55 00@ 70 00
Lemoine, 16 to 18 Kil., ₱ doz	75 00@ 77 50
Levin, 12 and 13 Kil., per doz	63 00@ 70 00
Cornellian, 16 to 19 Kil., per doz	63 00@ 65 00
Cornellian, 12 to 14 Kil., per doz	56 00@ 60 00
Cornell an Females, 14 to 16 Kil	65 00@ 70 00
Ogerau Calf, ₱ doz	54 00@
Simon, 18 Kil., ₱ doz	60 00
Simon, 20 Kil. ₱ doz	65 00
Simon, 24 Kil. ₱ doz	72 00
Robert Calf, 7 and 8 Kil	35 00@ 40 00
French Kips, ₱ lb	1 00@ 1 30
California Kip, ₱ doz	55 00 to 70 00
French Sheep, all colors, ₱ doz	8 00@ 15 00
Eastern Calf for Backs, ₱ lb	1 15@ 1 25
Sheep Roans for Toppings, all colors, ₱ doz	9 00@ 13 00
Sheep Roans for Linings, ₱ doz	5 50@ 10 50
California Russett Sheep Linings	1 75@ 5 50
Best Jodot Calf Boot Legs, ₱ pair	5 25
Good French Calf Boot Legs, ₱ pair	4 50@ 5 00
French Calf Boot Legs, ₱ pair	4 00
Harness Leather, ₱ lb	30@ 37½
Fair Bridle Leather, ₱ doz	48 00@ 72 00
Skirting Leather, ₱ lb	34@ 37½
Welt Leather, ₱ doz	30 00@ 50 00
Buff Leather, ₱ foot	18@ 21
Wax Side Leather, ₱ foot	20@ 22
Eastern Wax Leather	26

Mining and Other Companies.

Owing to the time necessary to mail the present large edition of the M. & S. Press we are obliged to go to press on Thursday evening—which is the very latest hour we can receive advertisements.

Amazon Silver Mining Company—Location of works, Ely District, Lincoln County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the Twenty-second day of October, 1872, an assessment of Ten Cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary pro tem, at his office, No. 609 Sacramento street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the sixth day of January, 1873, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the 22d day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

M. J. McMANUS, Secretary pro tem.

Office, 609 Sacramento street, San Francisco, Cal.
de7-4t

Bunker Hill Quartz Mining Company—Location of works, Amador, Amador County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 31 day of December, 1872, an assessment of Ten Dollars per share was levied upon the capital stock of said Company, payable immediately to the Secretary, in United States gold coin, at his office, No. 19 First street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Monday, the 6th day of January, 1873, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, January 27th, 1873 to pay the delinquent assessment, together with the cost of advertising and expenses of sale.

CHARLES H. KNOX, Secretary pro tem.

Office, 19 First street, San Francisco, California.

Shareholders' Meeting. --- Office of the Eagle Quicksilver Mining Company.

In accordance with a resolution adopted by the Board of Trustees of the Company, at a meeting held on the 7th day of December, 1872, a special meeting of the stockholders of said Company is hereby called, to be held at the office of the Company, rooms 5 and 8, No. 302 Montgomery street, San Francisco, Cal., on Saturday, the 21st day of December, 1872, at the hour of 3 o'clock P. M., to elect a Trustee to fill a vacancy in the Board, and for the transaction of such other business as may lawfully come before the meeting.

WM. H. WATSON, Secretary.

San Francisco, December 13th, 1872.

Golden Rule Mining Company---Location: Poverty or Chili Hill, Tuolumne County, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment (No. 5,) levied on the 2d day of November, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
J H Webster	71	50	$25 00
J H Webster	72	50	25 00
J H Webster	73	50	25 00
F E Webster	87	25	12 50
Mrs H M Morse	403	6	3 00
W R Cranna	329	5	2 50
A S Evans	341	1	50
L P Dsvis	436	5	3 00
H O Walker	465	50	25 00
H C Walker	466	20	10 00
W F King, Trustee	493	10	5 00
J B Russell	479	10	5 00
Mrs A J Eaton	492	10	5 00

And in accordance with law, and an order of the Board of Trustees, made on the 2d day of November, A. D., 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the auction house of Maurice Doro & Co., No. 327 Montgomery St., on Saturday, the fourth day of January, 1873, at the hour of one o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

By order of the Board of Trustees.

J. B. RUSSELL, Secretary.

Office—Room 5, over Donahue & Kelly's Bank, 432 Montgomery street, San Francisco, de14-3t

Great Blue Gravel Range Company—Location of works, Blue Grevel Range, Placer County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 15th day of November, 1872, an assessment of Ten Cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, Room 5 and 0, No. 302 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Wednesday, the 18th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, at the auction house of Maurice Doro & Co., No. 327 Montgomery St., on Saturday, the fourth day of January, 1873, at the hour of one o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room 5 and 6, No. 302 Montgomery street, San Francisco, California. no23

GREAT BLUE GRAVEL RANGE COMPANY—POSTPONEMENT.—The day for deeming stock delinquent on the above assessment is hereby postponed until Tuesday, the 7th day of January, 1873, and the sale thereof until Tuesday, the 28th day of January, 1873, at same place and hour. By order of the Board of Trustees. WM. H. WATSON, Secretary. de21-3t

Hudson Gold Mining Company—Location of works, Cherokee Mining District, Plumas County, State of California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment (No. 2) levied on the 11th day of November, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Curtis, J P	43	500	$37 50
Fassett, N H	9	100	7 50
Hanaen, George	35	100	7 50
Kenney, C A, Trustee	27	275	20 62
McClellan, H H	33	500	37 50
McClellan, H H	32	100	7 50
Mack, Julius	39	100	7 50
Olmsted, S E	40	375	28 13
Olmsted, S E	41	1200	90 00
Olmsted, S E	42	800	50 00
Olmsted, S E	44	100	7 50
Rowe, Robt	35	250	18 75
Smith, F A	10	2000	150 00
Smith, F A	15	475	35 62
Uhler, J Olem, Trustee	25	200	15 00
Warner, Charles H	34	250	18 75

And in accordance with law, and an order of the Board of Trustees, made on the eleventh day of November, A. D. 1872, so many shares of each parcel of said stock as may be necessary, will be sold at the office of the Company, No. 411 California street, San Francisco, California, on Monday, the 8th day of January, A. D. 1873, at the hour of 1 o'clock P. M. of said day, to pay said delinquent assessments thereon, together with costs of advertising and expenses of sale.

JOS. L. KING, Secretary.

Office, 411 California street, San Francisco, California. de21-3t

Ivanhoe Silver Mining Company.---Location of works Ely District, Lincoln County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 12th day of December, 1872, an assessment of one dollar per share was levied upon the capital stock of said Company, payable immediately in United States gold coin to the Secretary. Any stock upon which said assessment shall remain unpaid on the 19th day of January, 1873, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Thursday, the 9th day of February, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office, 14 Stevenson Building, No. 331 Montgomery street, San Francisco. dl4 1m

Kincaid Flat Mining Company.---Location of works, Tuolumne County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 9th day of December, 1872, an assessment of three dollars per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, 324 Clay street, San Francisco. Any stock upon which said assessment shall remain unpaid on the 13th day of January, 1873, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on the 5th day of February, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. H. CORNELL, Secretary.

Office, 220 Clay street, San Francisco. de14-1m

Lemon Mill and Mining Company---Notice to Stockholders.

Notice is hereby given, that a meeting of the Stockholders of the Lemon Mill and Mining Company will be held at the office of the Secretary, No. 608 Merchant street, San Francisco, Cal., on Monday, the 6th day of January, 1873, at 12 o'clock M. of said day, for the purpose of voting upon a proposition to increase the capital stock of the Company from two million (2,000,000) dollars, divided into twenty thousand (20,000) shares, of the par value of one hundred (100) dollars each (the present stock of the Company), to Three Million (3,000,000) Dollars, divided into thirty thousand (30,000) shares, of the par value of one hundred (100) dollars each.

G. W. CLARK, Trustee,
H. H. SCHAFER, Trustee,
JOHN FAY, Trustee,
H. SARROILHET, Trustee,
CAMILO MARTIN, Trustee,
} Lemon Mill and Mining Co.

San Francisco, Dec. 3d, 1872. de7-4t

Mammoth Blue Gravel Company—Location: Chalk Bluff District, Nevada County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 18th day of November, 1872, an assessment of eight cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary.

Any stock upon which said assessment shall remain unpaid on the 23d day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Monday, the 13th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office, room 37, New Merchants' Exchange, (third floor). California street, San Francisco, Cal. no23

Mina Rica Mining Company---Location of works, Auhurn Mining District, Placer County, State of California.

Notice is hereby given, that at a meeting of tha Board of Trustees of said Company, held on the 19th day of November, 1872, an assessment of thirty cents per share was levied upon the capital stock of said Company, payebla immediately in United States gold coin, to tha Secretary, at the office of the Company, No. 320 California street, room No. 5, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the 23d day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Monday, the 13th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

GEO. R. SPINNEY, Secretary.

Office—No. 320 California street, room No. 5, San Francisco, Cal no23

Mocking Bird Mining Company, Location of works, Ely Mining District, Lincoln County, Nevada.

Notice is hereby given, that at a meating of tha Board of Trustees of said Company, held on the fifth day of December 1872, an assessment of ten cents a share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary at the office of the Company Room 21, Hayward's Building, 419 California street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 10th of January 1873, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, January, 31st, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale.

H. C KIBBE, Secretary.

Office, Room No. 21, Hayward's Building, 419 California street, San Francisco, Cal.

North San Francisco Homestead and Railroad Association—Location of properly, City and County of San Francisco, State of California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the Fifth day of November, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount
Bidleman, E G	338	2	$5 00
Hagermann, F	358	195	585 00
Hagermann, F	385	5	15 00
Hagermann, F	388	8⅔	26 00
Hart, George	389	394	1182 00
Hendrie, J W	394	547	1641 00
Hendrie, J W	407	350	1050 00
Huerne, Prosper	98	2	8 00
Huerne, Prosper	359	1⅓	4 00
Hutchinson, H L	380	2	5 00
Klumpke, John G	143	30	90 00
Klumpke, John G	145	20	50 00
Klumpke, John G	286	2	6 00
McDonald, D L	388	5	15 00
McDonald, D L	387	5	15 00
Nelson & Doble	85	¼	75
Nelson & Doble	212	8 6-5	11 50
Nelson & Doble	222	1	3 00
Oppenheim, F	379	24	72 00
Payne, Warren R	381	2	5 00
Pioche, F L A	365	30	90 00
Pioche, F L A	367	2	6 00
Pioche, F L A	368	1½	00
Reed, M G	110	1⅔	4 50
Sharp, Geo. F	400	¾	2 25
Sharp, Geo. F	408	357	1071 00
Smith, James	382	2	5 00
Stone, N B	355	52	155 00
Stone, N B	356	8	24 00
Whittell, Hugh	364	540	1620 00
Whittell, Hugh	405	250	750 00
Whittall, Hugh	406	98	294 00
Whittell, A F	390½	3	9 00

And in accordance with law, and an order of the Board of Trustees, made on the 5th day of November, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Association, No. 314 California street, San Francisco, Cal., on the 23d day of December, 1872, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

A. D. SMITH, Secretary.

Office, 314 California street, San Francisco, Cal.

Norman Gold Mining Company—Location of works, Aqueduct Mining District, Amador County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said company, held on the 11th day of November, 1872, an assessment of five cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary, at the office of the company, Room 5 and 6, No. 302 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Thursday, the 12th day of December 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 4th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

W. H. WATSON, Secretary.

Office, Room 5 and 6, No. 302 Montgomery street, San Francisco, Cal. no16

POSTPONEMENT—"NORMAN GOLD MINING COMPANY."—The day for deeming stock delluquent on the above assessment is hereby postpoued until Thursday, the 2d day of January, 1873, and the sale thereof until Thursday, the 23d day of January, 1873, at the same place and hour. By order of the Board of Trustees.

WM H. WATSON, Secretary.

San Francisco, December 12, 1872.

Old Providence Mill and Mining Company, Location of works, Hayden Hill Mining District, Lassen County, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 7th day of November, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Dean, T R	4	5000	$1250
McDonald, D L	9	100	25
McDonald, D L	31	100	25
McDonald, D L	38	2500	825 00

And in accordance with law, and an order of the Board of Trustees, made on the 7th day of November, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, No. 415 Montgomery street, San Francisco, Cal., on the 6th day of January, 1873, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

FRANK SWIFT, Secretary.

Office, No. 415 Montgomery street, San Francisco, Cal. de21-3t

Piermont Milling and Mining Company—Location of works, Piermont Mining District, White Pine County, Nevada.

NOTICE is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 21st day of November, A. D., 1872, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary at the office of said Company. Any stock upon which said assessment shall remain unpaid on Monday, the 30th day of December, A. D., 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the 24th day of January, A. D., 1873, at the office of said Company, at the hour of 2 P. M., to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. W. CLARK, Secretary.

Office, 418 California street, San Francisco. n28-4t

Quail Hill Mining and Water Company---Location of works, Calaveras County, California.

Notice is hereby given that at a meeting of the Board of Trustees of said Company, held on the 4th day of December, 1872, an assessment of ten dollars per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, No. 438 California street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 14th day of January, 1873, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the 4th day of February, 1873, to pay the delinquent assessment, together with the costs of advertising and expenses of sale. By order of the Board of Trustees.

T. F. CRONISE, Secretary.

Office, 438 California street, np etaire, San Francisco, California. de 14

San Francisco Co-operative Land and Building Association.

Notice is hereby given, that the following specified shares of stock in said Association have been, by resolution duly adopted by the Board of Directors, declared forfeited for non payment of instalments due and delinquent thereon, respectively as specified, to wit:

Names.	No. Shares.	Amount.
John Bray	4	$32 00
Donald Bruce	12	95 00
O T Baldwin	10	50 00
Z Birdsall	10	70 00
George F Coffin	10	80 00
A C Diggins	1	11 00
D C Field	10	80 00
William Huebner	2	20 00
T F Hudson	5	55 00
James Heron	25	175 00
Thomas S. Hager	5	45 00
Charles S Healey	10	90 00
O C Keene	4	40 00
L Kaplan	5	30 00
M Levy	2	20 00
E C Morton	10	80 00
J F McDonald	5	60 00
J B McIntyre	2	22 00
P Lank, Jr	3	35 00
F A Ronlean	10	110 00
L F Rowell	10	70 00
J L Smith	25	175 00
W H Woodward	5	45 00
Charles W Banks	5	25 00
H Kenitzer	5	30 00
Chas A Story	5	25 00
Jos. Silva	2	10 00
W H Wright	10	50 00

The above designated shares will be sold at anction, to the highest and best bidder, for cash, at the office of the Secretary, No. 306 Montgomery street, San Francisco, on Saturday, the 4th day of Jannary, A. D. 1873, at 12 o'clock, noon, unless the suma due thereon, as above specified, together with fines due thereon, and all expenses and charges of sale, are previously paid. By order of the Board of Directors.

H. B. CONGDON, Secretary.

San Francisco, December 13, 1872. 4t

San Francisco Co-operative Printing Company, 411 Clay and 412 Commercial streets, San Francisco, Cal.

There are delinquent upon the following described stock, on account of assessment (No. 5) levied on the 5th day of November, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
James, R A	52	1	$5 00
James, R A	53	1	5 00
Moss & Co	91	1	5 00
Moss & Co	92	1	5 00
Moss & Co	93	1	5 00
Moss & Co	94	1	5 00

And in accordance with law, and an order of the Board of Trustees, made on the 5th day of November, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, by the Secretary of the Company, at the office, 412 Commercial street, on Tuesday, the 31st day of December, 1872, at 12 o'clock M. of that day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale. B. H. DALY, Secretary.

Office, 411 Clay and 412 Commercial streets, San Francisco, Cal. de14-2t

Spring Mountain Tunnel Company---Location of works, Lincoln County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 17th day of December, 1872, an assessment of twenty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary. Any stock upon which said assessment shall remain unpaid on the 25th day of January, 1873, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Monday, the 17th day of February, 1873, to pay the delinquent assessment together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.

Office, 37 New Merchant's Exchange, California street, San Francisco, Cal. de21

Office of the San Francisco Co-operative Printing Company, 412 Commercial street, San Francisco, Cal., December 4, 1872.

In accordance with a resolution of the Board of Trustees of the San Francisco Co-operative Printing Co., held this day, a special meeting of the Stockholders of said Company is hereby called, the same to be held at the office of the Company, on Wednesday January 8th, 1873, at 12 o'clock M., to take into consideration the propriety of increasing the capital stock of said Company from one thousand dollars, divided into one hundred shares of one hundred dollars each, the present capital stock, to forty thousand dollars, divided into two hundred shares of two hundred dollars each.

PETER COOK,
JOHN KANE,
R. A. JAMES,
A. J. WARREN,
B. H. DALY,
Trustees.

de7-4t

U. S. Grant Mining Company---Location of works, Carlisle, Nevada County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 19th day of November, 1872, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at his office, 226 Clay street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the 30th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 20th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

ENOS TAYLOR, Secretary.

Office, 226 Clay street, San Francisco, Cal. no23

Virginia Consolidated Mining Company---Location of mines: Kearsage Mining District, Inyo County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 11th day of December, 1872, an assessment of two cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, 318 California street San Francisco. Any stock upon which said assessment shall remain unpaid on the 20th day of January, 1873, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 10th day of February, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WINGARD, Secretary.

Office, No. 318 California street, San Francisco, Room No 13, third floor. de14-1m

Yule Gravel Mining Company---Location of works Vio's Claims, Township No. 3, Placer County State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 18th day of December, 1872, an assessment of twenty cents (20 c.) per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary, at the office of the company, Room 5 and 6, No. 302 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Saturday, the 18th day of January, 1873, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 10th day of February, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room 5 and 5, No. 302 Montgomery street, San Francisco, Cal. de21

FILLMORE
RAWHIDE
BELTING & LACING
ROPES & CHORDS
MADE BY
H. ROYER
437 BRANNAN STR. S.F.
-19r42am-bp

EUCALYPTUS.

The attention of the Medical profession is respectfully called to the following preparation of this new remedial agent. Eucalyptus and its preparations have been found useful in obstinate cases of Intermittent and Marsh Fevers, often supplanting the use of Quinine. The paroxysms of Asthma and Catarrh are greatly controlled, and in various Kidney diseases and Catarrh of the Bladder it seems to act like a specific.

FLUID EXTRACT EUCALYPTUS.

This extract represents in a concentrated form th medicinal effects of the leaves of Eucalyptus Globulu

THE ELIXIR OF EUCALYPTUS.

This compound presents the properties of the leaves in a palatable form and elegant appearance. Dose—One tablespoonful, to be repeated as often as the case demands.

Cigarettes of Eucalyptus Globulus, useful in Asthma, Difficulty of Breathing, Incipient Pleurisy, etc.

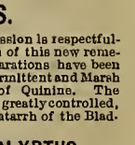
Prepared and sold by JAMES G. STEELE & CO., Chemists and Apothecaries,

No. 521 Montgomery St., hetwwen Clay and Commercial, San Francisco. no28

WARNER & SILSBY

Manufacture all sizes of

Bed and Sofa Springs,



Which they offer to the trade at reduced prices; also the celebrated **Obermann Self-Fastening Bed Spring.**

Any man can make his own Spring Bed with them by attaching them to the slats of any bedstead.

No. 147 New Montgomery Street, corner of Natoma, San Francisco. 23v3-8m

☞ BUY BARBER'S BIT BRACE.

Machinists and Foundries.

ESTABLISHED 1851.

PACIFIC IRON WORKS,

First and Fremont streets,

SAN FRANCISCO

IRA P. RANKIN, A. P. BRAYTON,
GEO. W. FOGG, Superintendent.

Steam Engines and Boilers,

MARINE AND STATIONARY,

IRON AND BRASS CASTINGS

Mining Machinery of Every Description,

And all other classes of work generally done at first-class establishments, manufactured by us at the lowest prices, and of the best quality.

☞ Particular attention paid to Jobbing Work and Repairs.

N. B.—Sole Agents for sale of HUNTOON'S CELEBRATED PATENT GOVERNOR.

18v20-3m GODDARD & CO.

FULTON

Foundry and Iron Works.

HINCKLEY & CO.,

MANUFACTURERS OF

TEAM ENGINES,

Quartz, Flour and Saw Mills,

ayes' Improved Steam Pump, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

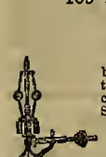
N. E. corner of Tehama and Fremont streets, above Howard street, San Francisco. 3-qy

GEORGE T. PRACY,

MACHINE WORKS,

109 and 111 Mission Street,

SAN FRANCISCO.



These Works have lately been increased, by additional Tools, and we are now able to turn out any kind of work, equal to and cheaper than any establishment in the State; that is to say:—

STEAM ENGINES,

Flour and Saw Mills,

QUARTZ MACHINERY

Printing Presses,

AND MACHINERY MADE OF EVERY DESCRIPTION.

Improved Safety Store Hoists,

Fitted with Cutting's Patent Cams, unequaled for safety, convenience and cheapness. This Hoist can be built for about half the price of any other in use. To be seen at HAWLEY & CO.'S.

ALSO, MANUFACTURER AND SOLE AGENT FOR

Pracy's Celebrated Governor.

TURNING LATHES, Etc., constantly on hand.

4v23tf

UNION IRON WORKS,

Sacramento.

ROOT, NEILSON & CO.,

MANUFACTURERS OF

STEAM ENGINES, BOILERS,

CROSS' PATENT BOILER FEEDER AND SEDIMENT COLLECTOR

Dunbar's Patent Self-Adjusting Steam Piston

PACKING, for new and old Cylinders.

And all kinds of Mining Machinery.

Front Street, between N and O streets,

SACRAMENTO CITY.

PACIFIC

Rolling Mill Company,

SAN FRANCISCO, CAL.

Established for the Manufacture of

RAILROAD AND OTHER IRON

—AND—

Every Variety of Shafting,

Embracing ALL SIZES of

Steamboat Shafts, Cranks, Piston and Connecting Rods, Car and Locomotive Axles and Frames

—ALSO—

HAMMERED IRON

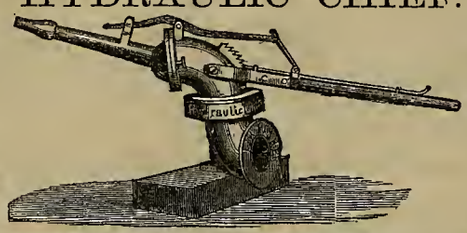
Of every description and size.

☞ Orders addressed to PACIFIC ROLLING MILL COMPANY Post Office, San Francisco, Cal., will receive prompt attention

☞ The highest price paid for Scrap Iron. 9v143

HYDRAULIC CHIEF.

FISHER'S KNUCKLE JOINT AND NOZZLE IS THE Cheapest and Best Hydraulic Machine in use.



MACHINES Manufactured TO ORDER, to throw from One to an eight-inch STREAM.

The only reliable party in the Hydraulic business who protects his patrons.

9v23-tf Address F. H. FISHER, Nevada, Cal.

HYDRAULIC MINERS, TAKE NOTICE—I hereby caution Miners and Manufacturers against making, buying, selling or using a Hydraulic Machine or Joint known as the Little Giant, manufactured and sold by R. R. & J. Craig and Richard Hoskin, as the same is an infringement upon the invention of the machine known as FISHER'S HYDRAULIC CHIEF, secured by Letters Patent, No. 110,222, dated Dec. 20, 1870. All parties participating in such infringements will be rigorously prosecuted. Nevada, Jan. 13th. F. H. FISHER.

H. J. BOOTH & CO.,

UNION IRON WORKS,

(The Oldest and most Extensive Foundry on the Pacific Coast).

Cor. First and Mission Sts.,

SAN FRANCISCO.

Marine, Locomotive and Stationary Engines Quartz Crushing and Amalgamating Machines, Mill Irons and Brass and Iron Castings, of every description, made to order.

Steamboat Repairing, Boiler Making, Turning and Finishing,

EXECUTED WITH DISPATCH.

Beet Sugar Machinery complete in every part—made specialty.

OIL MACHINERY.

A complete set of Machinery of our own design and patent for extracting oil from Castor Bean, dispensing with Hair Cloth. Also Machinery for Flax Seed Oil, Mustard Seed Oil, and Sun Flower Seed Oil.

MARBLE MACHINERY

For sawing Marble of any thickness or size.

Irrigating Pumps. Steam Pumps.

Plans, Estimates, and Advice promptly supplied.

H. J. BOOTH. GEO. W. PRESCOTT. IRVING M. SCOTT

4v24-1yslamr

NOTICE.

THE PROPRIETORS OF THE

VULCAN IRON WORKS

HAVING RECENTLY REFITTED THEIR Shops with New Tools of late and modern improvements, have facilities unequalled by any establishment in San Francisco, for turning out with dispatch all classes of machinery used on the Pacific Coast.

The variety and completeness of our Patterns enable us to supply the general wants of the Pacific States and Territories at the lowest possible rates.

Office—135 and 137 Fremont St.,

BETWEEN HOWARD AND MISSION, S. F.

ARNOT, BIRCH & CO.,

Proprietors.

WM. H. BIRCH, Superintendent.

N. D. ARNOT, Manager.

12v25-tf

THOMPSON BROTHERS,

EUREKA FOUNDRY,

129 and 131 Beale street, between Mission and Howard, San Francisco.

LIGHT AND HEAVY CASTINGS,

of every description, manufactured. 24v16qr

Miners' Foundry and Machine Works,

CO-OPERATIVE,

First Street, bet. Howard and Folsom, SAN FRANCISCO

Machinery and Castings of all kinds.

OCCIDENTAL FOUNDRY,

137 and 139 First st., near the Gas Works, San Francisco.

STEIGER & BOLAND,

IRON FOUNDERS.

IRON CASTINGS of all descriptions at short notice

All orders punctually executed in time agreed on

Particular attention paid to making superior Shoes and Dies. Among the special castings of this Foundry are the well known CALLAHAN GRATE BAR, of superior merit for burning screenings — all size Bars. STRATTON'S JACK SCREWS, all sizes. Superior, compact and effective Horse Powers, Pumps, Agricultural Castings, Ingot Moulds, Assaying and Refining Retorts and Kettles, and a great variety of other and special castings.

STEIGER & BOLAND Proprietors.

Steiger & Boland are the sole Manufacturers of the Improved Hepburn Roller Pan. The patterns having all the Improvements to those Pans, are at the Occidental Foundry, enabling the Establishment to deliver all pans and parts thereof with uniformity, finished in the best style, and at the lowest possible price. Pan Castings furnished the trade, with liberal facilities for erection, &c. All persons are cautioned against making, selling or using these Pans, except through the authorized agents and manufacturers, viz., Steiger & Boland, of the Occidental Foundry, S. F.

22v25-3m WM. H. HEPBURN.

THE RISDON

Iron and Locomotive Works.

INCORPORATED.....APRIL 30, 1868.
CAPITAL.....$1,000,000.

LOCATION OF WORKS:
Corner of Beale and Howard Streets,
SAN FRANCISCO.

Manufacturers of Steam Engines, Quartz and Flour Mill Machinery, Steam Boilers (Marine, Locomotive and Stationary), Marine Engines (High and Low Pressure). All kinds of light and heavy Castings at lowest prices. Cams and Tappets, with chilled faces, guaranteed 40 per cent. more durable than ordinary iron.

Directors:

Joseph Moore, O. J. Brenham, O. E. McLane,
Wm. Norris, Wm. H. Taylor, Lloyd Tevis,
James D. Walker.

WM. H. TAYLOR.....President
JOSEPH MOORE.. Vice-President and Superintendent
LEWIS R. MEAD.....Secretary

24v17-ay

GEO. W. PRESCOTT. C. W. SCHEIDEL. W. R. EckART

PRESCOTT, SCHEIDELL & CO.,

MARYSVILLE FOUNDRY.

Corner of B and Fourth streets, Marysville, Cal.

MANUFACTURERS OF

STEAM ENGINES,

STATIONARY AND PORTABLE

SAW AND GRIST MILLS,

Hydraulic Machinery,

Quartz Crushing and Amalgamating Machinery

Of every description, constantly on hand.

Plans and estimates furnished upon application. Repairs upon all kinds of Machinery promptly made, and at moderate charges.

Having unrivalled facilities, we are prepared to make to order, at short notice, anything required in our line. Specimens of our work may be seen in all the mining regions on this coast.

CALIFORNIA BRASS FOUNDRY,

No. 125 First street, opposite Minna,

SAN FRANCISCO.

ALL KINDS of Brass, Composition, Zinc, and Babbitt Metal Castings, Brass Ship Work of all kinds, Spikes, Sheathing Nails, Rudder Braces, Hinges, Ship and Steamboat Bells and Gongs of superior tone. All kinds of Cocks and Valves, Hydraulic Pipes and Nozzles, and Hose Couplings and Connections of all sizes and patterns, furnished with dispatch.

☞ PRICES MODERATE. ☜

J. H. WEED. V. KINGWELL.

CALDWELL'S

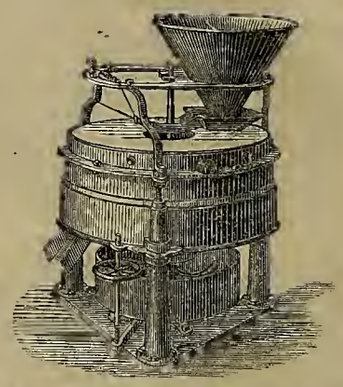
Improved Stop Governor,

Manufactured at the CYCLOPS MACHINE WORKS, 113 and 115 Beale street, San Francisco.

3v24-3m WM. CALDWELL.

Machinery.

MILL STONES.



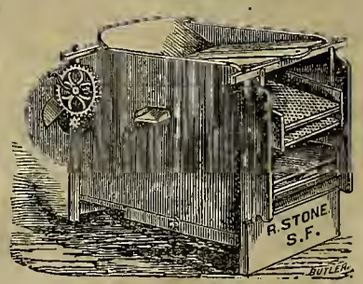
Portable Mills, Eureka Smut Machines Bran Dusters, Dufour & Co.'s Celebrated Dutch Anchor Bolting Cloths, and General Mill Furnishing.

TRAVIS & WAGNER,

18v24-3m 41 First street, San Francisco.

THE PATENT

Novelty Mill and Grain Separator



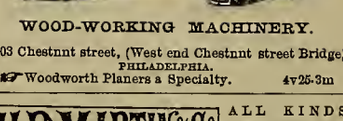
Is one of the greatest improvements of the age for cleaning and separating grain, while it combines all the essential qualities of a First-class Fanning Mill. It also far excels anything that has been invented for the separation of grain. It has been thoroughly tested on all the different kinds of Mixed Grain. It takes out Mustard, Grass Seeds, Barley and Oats, and makes two distinct qualities of wheat if desired.

For further information apply to R. STONE,

eow-bp 422 Battery street, San Francisco.

POWER, TAINTER & CO.,

MANUFACTURERS OF



WOOD-WORKING MACHINERY.

3003 Chestnut street, (West end Chestnut street Bridge)

PHILADELPHIA.

☞ Woodworth Planers a Specialty. 4v25-3m

H. B. MARTIN & Co. MACHINISTS AND BUILDERS

ALL KINDS Hydraulic ELEVATORS, REVERSIBLE Hoisting Engines,

STEAM AND HYDRAULIC ENGINES

Power Pumps and Pressure Rams, Sewing Machine Motors, Etc.,

NO. 13 FREMONT STREET,

Nelson & Doble's Building.....San Francisco.

16v25-tf

Notice is hereby given, that the copartnership heretofore existing between A. J. Severance, Charles W. Randall and J. Gus. Burt, under the firm name of "Severance, Holt & Co.," is this day dissolved by mutual consent. A. J. Severance, having purchased all the interest of his late partners, will continue the business of manufacturing and selling Diamond Drills as before, under the style of A. J. Severance & Co.

Dated San Francisco, Nov. 24, 1871.

Office, 315 California street. A. J. SEVERANCE,
CHAS. H. RANDALL.
22-v23-tf J. GUS. BURT.

FARCIOT & VANDRAKE,

GENERAL MACHINISTS,

No. 13 Fremont Street [Nelson & Doble's Building], San Francisco, Cal.

NOTICE.—Special attention called to our new STEAM PUNCHING PRESS, which we have on hand for use of customers. Capacity, 1800 per hour. All kinds of Dies and Punches made to order. 23v25-3m

THEODORE KALLENBERG,

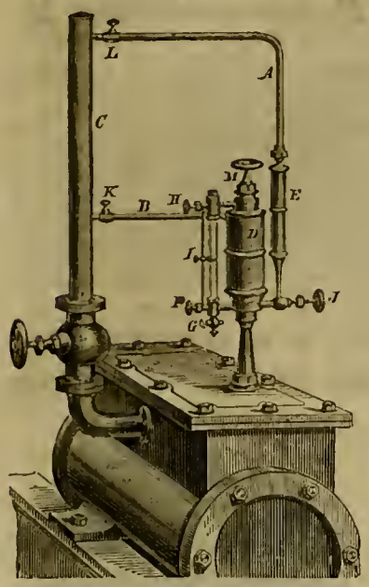
MACHINIST,

and Maker of Models for Inventors. All kinds of Dies Stamps and Punches made. Also, all kinds of Small Gears Cut.

Repairing done on very Reasonable Terms and in the best manner. No. 32 Fremont street, S. F. 19v23-3m

FOR SALE.—A FOUNDRY AND MACHINE Shop, in a business country town; terms, half cash—balance on time. Apply at 129 and 131 Beale street. To be sold on account of death of one of the partners. 3t

N. Seibert's Eureka Lubricators.



THE HIGHEST PREMIUM

Awarded by the Mechanics' Institute Fair, San Francisco, and State Fair, Sacramento, 1871.

These Lubricators are acknowledged by all engineers to be superior to any they have ever used; feed constantly by pressure of condensed water, supplied by pipe A, regulated under the oil by valve J, and forced out through check valve and pipe B into the steam pipe C; it then becomes greasy steam, passes to all the valves and cylinder at every stroke of the engine; glass tube I indicates amount used per hour. Packing on rods and stems lasts longer, and the rings on the piston will not corrode. One pint of oil will last from three to six days, according to speed and size of engine; I, sliding gauge; K, valve to shut off when engine stopps; H, F, valves to shut off in case of frost; steam does not enter the cup; it is always cool; warranted to give satisfaction. Patented February 14, 1871. Manufactured by California Brass Works, 125 First street, S. F. 24v23tf

BLACK DIAMOND FILE WORKS.

G. & H. BARNETT,

Manufacturers of Files of every Description

Nos. 39, 41 and 43 Richmond street,

Philadelphia, Pa.

MILL SAW FILES A SPECIALTY.

18v25-1y

California File Manuf'g Co.

Potrero, Solano street, bet. Tennessee and Minnesota streets, SAN FRANCISCO.

Manufacturers of New Files.

Old Files re-cut and warranted equal to new.

REAPER AND MOWER SECTIONS, BARS AND KNIVES COMPLETE,

at a saving of 50 per cent. Orders from the country promptly attended to. 9v19-by

NELSON & DOBLE,

AGENTS FOR

Thomas Firth & Sons' Cast Steel.

MANUFACTURERS OF

Sledges, Hammers, Stone Cutters', Blacksmiths' and Horse-Shoers' Tools.

13 and 15 Fremont street, near Market, San Francisco 10v14or

SAN FRANCISCO

SCREW BOLT WORKS,

PHELPS BROTHERS, Proprietors,

MANUFACTURERS OF ALL KINDS OF

Machine Bolts, Bridge Bolts, and Ship or Band Bolts.

13 and 15 Drumm street, San Francisco. 4v24ly

JUST PUBLISHED.

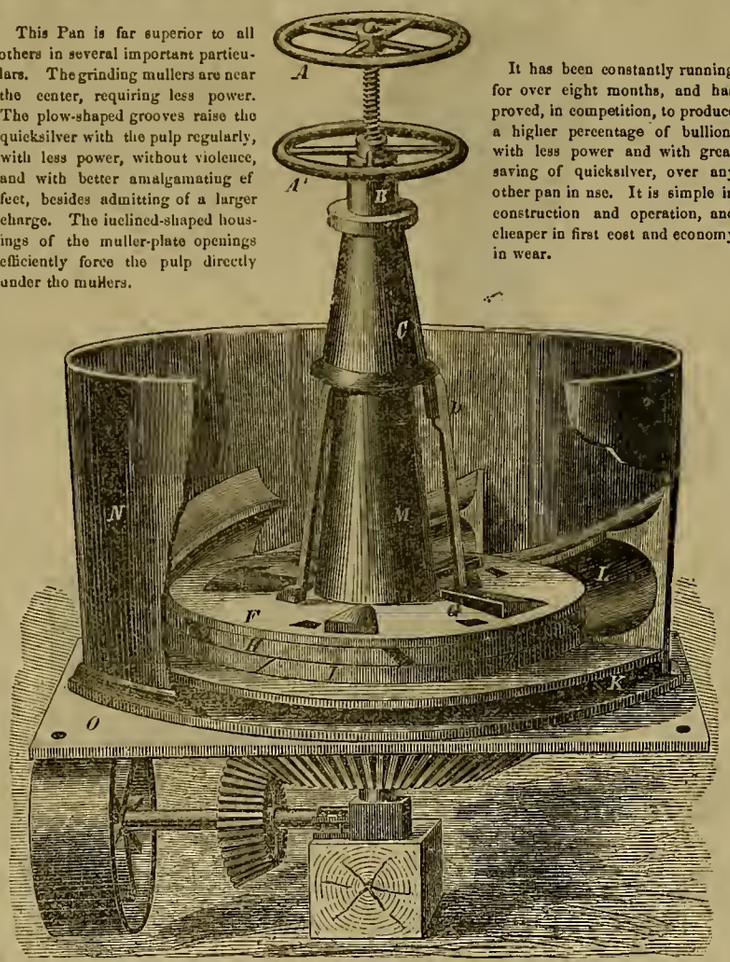
Froiseth's New Sectional, Topographical and Mineral MAP OF UTAH.

SIZE, 40 BY 56 INCHES; SCALE, 8 MILES TO AN INCH.

Handsomely engraved on stone, colored in counties, and mounted on cloth, showing the Counties, Towns, Rivers, Lakes, Railroads, Mines and Mining Districts throughout the Territory, and all GOVERNMENT SURVEYS made to date. Price, mounted, $8; Pocket form, $5. Mailed to any part of the United States, on receipt of price, by A. L. BANCROFT & CO., 721 Market street, San Francisco, Cal., or by B. A. M. FROISETH, Publisher, Salt Lake City, Utah. 10v25-tf

STEVENSON'S PATENT MOULD BOARD AMALGAMATING PAN.

This Pan is far superior to all others in several important particulars. The grinding mullers are near the center, requiring less power. The plow-shaped grooves raise the quicksilver with the pulp regularly, with less power, without violence, and with better amalgamating effect, besides admitting of a larger charge. The inclined-shaped housings of the muller-plate openings efficiently force the pulp directly under the mullers.



It has been constantly running for over eight months, and has proved, in competition, to produce a higher percentage of bullion, with less power and with great saving of quicksilver, over any other pan in use. It is simple in construction and operation, and cheaper in first cost and economy in wear.

Manufactured at the Golden State Iron Works (Co-operative), 19 First street, S. F.

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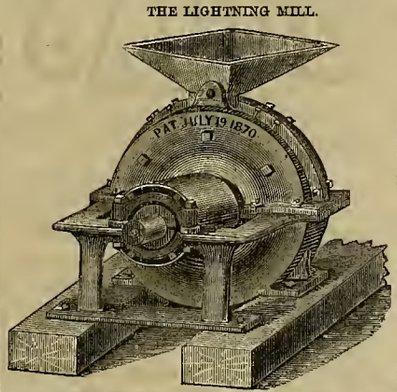

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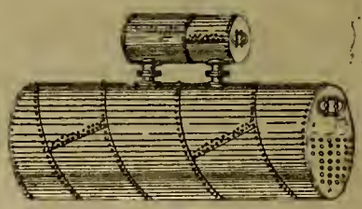

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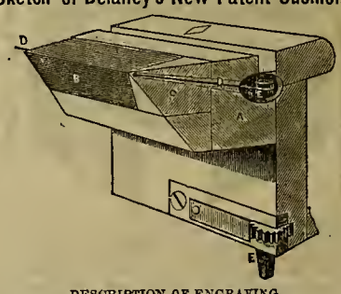
Sketch of Delaney's New Patent Cushion.



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☞ All kinds of Machinery made and repaired.

24v22-3m JOSEPH MOORE, Superintendent.

THE Salt Lake *Tribune*, a leading Utah journal, which takes great interest in mining matters, endorses our correspondent, Col. B. A. M. Froiseth, and the MINING AND SCIENTIFIC PRESS, as follows; "The mining population of Utah are much indebted to Colonel B. A. M. Froiseth for his representation of the Utah mines in foreign and home journals. A few days ago we noticed an elaborate and truthful letter in the *London Mining Journal*, and still more recently the miners of Camp Floyd have reason to thank him for a carefully prepared map of that district which appeared in the MINING AND SCIENTIFIC PRESS, of San Francisco, together with a letter, a column in length, eulogistic of that district. Colonel Froiseth is doing a good work in presenting the mineral resources of Utah abroad, and, as he is a gentleman of undoubted ability and veracity, his communications are of great value to the mining interests of this Territory. We understand the Colonel has a number of copies of the MINING AND SCIENTIFIC PRESS containing the map alluded to; and parties interested in Camp Floyd would be subserving their own interests by not only securing a copy containing this map, but by subscribing for the PRESS, as it takes a lively interest in mining matters pertaining to Utah."

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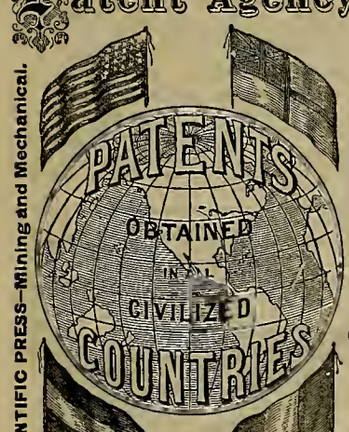

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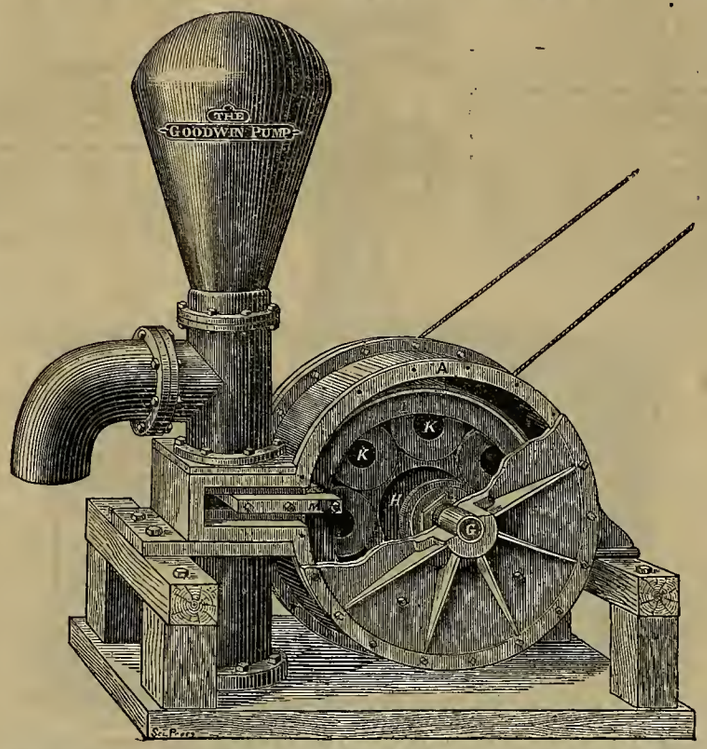

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2.00 P. M (Sundays excepted). S. F. & N. P. R. R. Steamer (from Broadway Wharf), connecting at Donahue with Trains for Cloverdale. Making close connection at Lakeville with stages for Sonoma.

2.00 P. M. (Sundays excepted). Stockton Steamer (from Broadway Wharf), touching at Vallejo, Benicia, and Landings on the San Joaquin river.

3.00 P. M. (Daily). San Jose Passenger Train (via Oakland), stopping at all way Stations.

4.00 P. M. (Sundays excepted). Passenger Train (via Oakland) for Lathrop, Merced, Visalia, Tipton, and Los Angeles, Stockton and Sacramento.

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5.15 P. M. (Daily). Overland Emigrant Train (via Oakland)—Through Freight and Accommodation.

OAKLAND BRANCH.—LEAVE SAN FRANCISCO, 7 00 8 10, 9 20, 10 10 and 11 20 a. m., 12 10, 1 50, 3 00, 4 00, 5 15, 6 40, 8 9.20 and *11 30 p. m. (9 20, 11 20 and 3 00 to Oakland only).

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ALAMEDA BRANCH.—LEAVE SAN FRANCISCO, 7 20, 9 00 and 11 15 a. m., 1 30, 4 00, 5 30, and 7 00 p. m. (7 20, 11 15 and 5 30 to Fruit Vale only).

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MINING AND SCIENTIFIC PRESS.

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BY DEWEY & CO., Patent Solicitors.

SAN FRANCISCO, SATURDAY, DECEMBER 28, 1872.

VOLUME XXV. Number 26.

Improved Vapor Burner for Warming Rooms.

We give herewith a small illustration of an improved vapor burning stove, designed for warming offices, and other small rooms, where but little heat is required. As will be seen by the accompanying engraving these stoves consist of a body or drum within which is the heating apparatus, and above which is a reservoir for the gasoline, from which the liquid is readily and safely fed to the burning apparatus within the body of the stove.

The improvement, which is the invention of Mr. William Frisl, of this city, consists in the employment of a peculiar dish or bent plate, which is fixed to the generator attached to the heating apparatus, but which is not shown in the engraving. The object of this dish attachment is to so spread the flame as to obtain from the same the greatest possible heating power. This stove may also be used for cooking purposes, and will be found very serviceable and convenient for other uses.

MINING LAWS IN ENGLAND.—A new mining law has recently gone into effect in England among the provisions of which is a system for securing the competency of managers; another lays down certain general rules for the prevention of accidents; a third provides that an amount of ventilation shall be produced in every mine sufficient to dilute the noxious gases; a fourth establishes a board of inspectors to see that the various provisions are carried out. It is further provided that the mines shall be inspected at least once in twenty-four hours, and regular reports made. Some provisions of this kind might be advantageously incorporated into the mining laws of this country.

ANOTHER CHINESE WALL.—Quite a romantic piece of news comes from Cuba. It is said that the legitimate authorities appear to have despaired of being able to "crush out" the rebellion have decided upon erecting a (stockade) wall 15 feet high and 60 miles long from shore to shore, across the island, in imitation of the Great Wall of China. A block-house is to be established at intervals of a thousand yards and a redoubt in each interval. These preparations, with military camps every three miles, a railway, telegraph and 5,000 troops along the line, it is thought, will keep the rebels in check—perhaps so.

DIAMONDS.—The idea of finding diamonds in Arizona and Colorado is not yet fully given up. Arrangements are still in progress to start out prospectors as soon as the spring opens.

EAR Trumpets of a wonderful construction, by which it is said ordinary sounds can be heard at a distance of a mile, are to be exhibited at the Vienna Exposition.

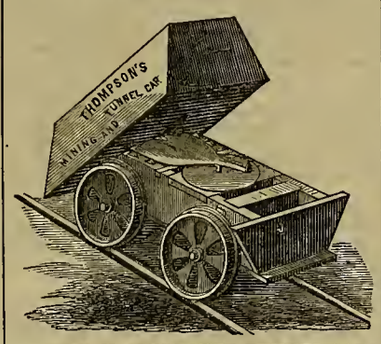
Automatic Dumping Car.

One of the great drawbacks to the use of dump cars, which deposit their loads by the tipping of the car bed, is found in the fact that the bed must be placed with its central line at a sufficient height above the track to permit it to turn or tip to an angle sufficient to relieve it of its load, thus rendering the car inconvenient on account of its height.

To remedy this defect, Mr. James M. Thompson, of Quincy, Plumas County, has patented (Sept. 24, 1870) a device by which the bed, instead of having to tip from a fixed position, and pivot from a central point between the wheels, may, by a simple and easily-worked device, be readily pushed backwards and tipped from the rear of the truck, at a much lower elevation than if it had to be tipped from a fixed pivot—the car, so tipped, is shown in the engraving.

In addition to this advantage, the same device admits of the bed being revolved one-quarter round, either way, so as to dump its load upon either side of the track—a matter which is often of much advantage.

After the bed has been relieved of its load it



THOMPSON'S IMPROVED TUNNEL CAR.

can be easily elevated and replaced on the truck by means of levers, or otherwise, a rack and pinion between the body and truck, permitting it to move easily back to its place. As a mining car and for blasting on railroads, this car will be especially useful, and much more convenient than the high dump cars generally in use. This patent, as well as a number of others, has been obtained for Mr. Thompson through the SCIENTIFIC PRESS PATENT AGENCY.

Japanese Minerals and Mining.

We have had the pleasure of examining quite an extensive and interesting collection of minerals which have been on exhibition for some days at No. 1015, Market street. This collection has been made by Prof. Jacques Kaderly, late professor at the Imperial Academy at Yeddo. Much of it was secured while acting in his professional capacity, but the chief portion during a year of leisure in which he visited all accessible parts of the Empire. The exhibition here made fully satisfies the representations which have been given of the great and varied mineral wealth of Japan.

Of the precious metals we have silver and gold in all the forms which the ores of those metals usually present. Prof. Kaderly informs us that there are numerous gold mines there, two only of which are worked systematically. These are both being worked under the direction of an English engineer, the ordinary stamp mill being employed for the reduction of the ore. Placer gold is frequently brought in for sale to the English traders, from various quarters, but the Japanese maintain the strictest secrecy before foreigners with regard to the localities where it is found.

Some very fine samples of copper are also exhibited—sulphurets, carbonates, oxides, etc. The copper mines are said to be very extensive, and have been worked for centuries. Copper is an article of export from Japan. Several silver, lead and copper mines are worked in the provinces of Kango, under the direction of a French engineer. These mines are located at intervals of four or five miles apart. All the mines in Japan are worked in the interest of the government—no concessions being made either to foreigners or their own people. Foreign skill in supervision is recognized as more profitable to the government than native.

Iron ores of various descriptions and of very superior qualities are also exhibited by the Professor, who informs us that numerous iron mines are worked, and have been for ages. The Japanese employ the same small furnaces which have been used from time immemorial in India. The furnaces have a capacity for only 15, 20 or 30 pounds of iron. Only the most choice ores are worked, the iron turned out being in a malleable condition. Of late, however, two large furnaces have been erected—one each under the direction of an English and an American engineer, which are now turning out pig iron on a large scale. The government is evidently becoming aware of the importance of its iron interest, and will doubtless eventually be able to turn out iron on the largest scale, and by the use of converting furnaces and rolling mills work it up cheaply into all the various forms requisite for commercial purposes, whether for machinery or railroads.

Cinnabar is also shown in very rich samples. It is only lately, however, that this mineral has been discovered, and it has not yet been worked.

Antimony and bismuth are shown, and are said to occur in great abundance. The Professor also exhibits some very fine specimens of tin ore. This metal is abundant, but as yet has been worked only in a very primitive form and by natives. The home demand has never yet been fully supplied, although this metal might, no doubt, be made a matter of export.

Sulphur is found in inexhaustible quantities about thirty miles from Yokohama and upon the slopes of the extinct volcano of Fuzi-Yama. Fine samples are shown.

Alum also occurs in inexhaustible quantity. It is worked by the natives and exported in considerable quantity. We were also shown several small but very fine specimens of lithographic stone.

Among the more rare minerals and precious stones the Professor exhibits quite a collection of agates, onyx, cornelian, rubies, garnets, amethysts, chalcedony, etc., all of which are said to be found in large quantities. We noticed in the collection a large and very fine show of quartz crystals, varying from those which were perfectly limpid, all the way through the various shades of "smokiness," to perfect blackness. One of the larger translucent crystals enclosed a quantity of water—a very rare occurrence.

Some very fine specimens of amber were also shown, which we are informed is often found upon the sea-shore in certain localities. A fine show is made of variegated marble; also of numerous other minerals, such as jasper, serpentine, tourmaline, lavas, etc.

The only specimens of a carboniferous character which we noticed were some fine massive specimens of jet. It is well known, however, that coal of a superior quality exists on one or more of the islands.

The Professor has also a large collection of fossils—both fauna and flora—some of which are quite interesting, especially to the geologist and paleontologist.

Coming from a country with which we are really as yet little acquainted, and yet with which we are growing familiar, and which is destined to become of great commercial importance to this city, the collection possesses an unusual degree of interest; and, as it is for sale, it should certainly find its way to the shelves of some public institution, where it may serve as the nucleus of a more extensive collection, which might be made a most interesting and profitable subject of study. We understand negotiations are in progress for its temporary deposit at Woodward's Gardens. It is to be hoped that sufficient public spirit will be manifested by some one to prevent its transfer to Europe, whither it will go, unless purchased here.

Growing Plants from Cuttings.

The question is asked us—"why is it so difficult to get plant cuttings to grow in pots, in the country or, indeed, outside of green-houses generally?" The person making the inquiry says, she uses the best garden soil; keeps the pots in a warm, sunny place, waters them abundantly and yet, the cuttings are *so slow* in starting, if indeed they start at all.

We might suggest at least three good reasons, probably, why the cuttings do not grow well. One is, that they are not taken from the parent plant at the proper time of growth; the second, that instead of "the best garden soil" they should be started in nearly clean sand; and the

third reason probably is, that the part of the cutting above the surface of the ground is kept, not perhaps too hot, but too dry.

W. Tyrone, in a valuable European exchange gives the following simple plan which may be adopted, and which will almost always insure success:

A common large cigar box may be the house. A pane of glass to cover it will make the roof. A shallow pan, or two saucers of water in the bottom of the box, or 2 inches of fresh wet moss around its roots, or both, as shown in the accompanying figure will furnish vapor which the glass covering will retain, while admitting light. To prevent access of heat in case of the sun shining full on its glass roof, a piece of white paper can be laid on as a screen, and kept secure by a piece of glass, so that light may be excluded as little as possible during the day. And if cold nights should occur, the box is easily moved to a safer position.

The engraving shows in section, three cuttings set in the sandy mould in the inner box, the pan beneath, the moss around, and the glass and paper and paper-weight above.

All necessary precautions are then secured, and a crop of cuttings may be had, rooted, in a week or two, if they are taken green from the end of the stoutest young shoots of an herbaceous plant, when just under full process of extension in growth. The lower leaves are taken off and the cuttings immediately set in the damp, sandy soil, before they fade in the least. They may be from 1 to 3 inches long, and the two or more leaves left on them may be clipped if they are very large, so as to reduce their length. The soil may be pure sand, if merely for rooting or striking the cuttings, as the phrase is. But whatever soil is used must be sweet and fresh, taken from the *surface*, where it has been long exposed to the light, the rain, and the free air.

CAUTION NEEDED IN REGARD TO THE HORSE EPIDEMIC.—The Buffalo papers state that a young man in that city, who, while taking care of a horse sick with the prevailing epidemic, received a small portion of the virus in the eye when the horse snorted, has lost the use of that eye in consequence, and will probably lose the use of the other.

A Chat About the Grass Valley of To-Day.

We give space to the following pleasant notice of an old mining town, which we find in the Marysville *Defender:* A ramhle around Grass Valley showed us many changes. The town has improved very much, though it has heen rather dull during the past summer. Some of the mines are not being worked at present, which has had the effect of throwing a number of men out of employment. Still, the progress of the town is steadily onward, and will continue so for many years to come. Grass Valley is one of the prettiest mining towns in the State, and possesses more advantages than any town we know of. The cottages are tastily huilt, surrounded with

Gardens and Orchards,

Presenting a home-like, attractive appearance. So much has been written regarding the mines of Grass Valley that we could say nothing new on the subject. We can only give a hasty glance at the place and speak of those we found there. "Old Block" still presides over the scales in his banking-house; hut little changed by time —varying his financial labors with occasional sketches of men and

Things of the Golden Time.

Spencer still lays down certain points on his crihhled arm and demonstrates their feasihility to the most skeptical. Shoemaker can be found in the sanctum, wielding pen or scissors, as occasion requires, to make a live journal. Charley Smith of the Exchange has rented his hotel, and now attends solely to the liquid business. His hair and beard grows old much faster than he does, which he attributes to the fact that they belong to another family, his father having married twice. We missed several of

The Old Familiar Faces.

Schenk Glass, genial and careless, is lying in the little cemetery, along with others whom we last met in perfect health. John R. Ridge, poet, scholar and gentleman, has also gone the way of all mankind, and it will he long ere his place in that community can he filled again. But we have little to do with the dead, let us rather deal with the living.

Grass Valley is essentially a miners' town, and Cornish at that. The stranger, on entering a hotel or restaurant, would imagine himself

Among the Old Country People,

In one of their mining towns. Sitting at breakfast {one morning in the hotel we listened to conversations like these: "Hi say, coosen Jack, how is the work looken' now?" "Oh, spara forthly, he be gone to peirch out all together, I thinks." "Say, waiter, hring me two hoiled heggs and a glass of 'arf and 'arf." The order was filled, and the miner, hreaking the eggs on the end, looked up, exclaiming, "Hi say, you waiter, do ee see this? Hit his ha' bloody swindle; these heggs are not 'arf full'." Another couple sitting hy appeared to be

Great Cronies.

One of them was a little the worse for liquor and was inclined to be noisy. His companion remonstrated with him in this wise: "Hi say, Cap'n, hif hi couldn't sit down and take a glass of grog comf't'ble, without making a blarsted fool of myself, why hi'd go whoam, so 'elp my G—d, Cap'n." But aside from the hardy, industrious class, which has given Grass Valley its wealth and prosperity, there is

Another Element Entirely Distinct.

We refer to the mine owners and business men of the city. Some of the wealthiest men in the State, like the Watts and others, have their residence here, on which have heen lavished all that wealth guided hy taste conld procnre. We know of no finer homes, no more pleasant, social aud refined people anywhere than this class of residents. Through their example the city has heen heautified and adorned, and from the rude mining hamlet of a few years since has become the prettiest and

Wealthiest Mining Town

In the State. We are not advised of the number of mills now running in and around Grass Valley, hut they are quite numerous. Many of them work solely on custom work, others work only the rock taken from the mine to which the mill helongs. It would be beyond belief to those who know nothing of the wealth of Grass Valley mines could they he informed as to how much wealth has been taken therefrom since the mines were first opened. It is

Counted by ths Millions,

And had it all heen applied to the payment of, would have gone far toward bearing the expense of the State Government since its organization. So far as we could observe we should infer that there will he but little change in the yield of gold for years to come from these mines, and that change will he for the hetter. New veins will be struck and opened, and the richest quartz helt in the State will maintain its supremacy while quartz mining exists.

The Vultures of Our Mining Interests.

In the effort to promote the development of her minaral resonrces, Utah, like all new mining countries, has encountered many difficulties and discouraging influences, not the least of which arises from the ravages, so to speak, of a certain class of men who will not allow a mine to he sold, if they can by any meane cast suepicion upon its merit, or lead the proposing purchasers to think they might do better elsewhere, unless they are paid or allowed to take a share in the profits. Hundreds of these vultures fatten upon our miners, aud thosa who operate for miners in trying to hring capital into the country that their property which most likely would otherwiee remain idle and unproductiva, may ba properly worked, and they either hy sale or a reserved interest be enahled to reap some return for the lucky chance of the discovery and their original labor. Yet in almost numberless instances, the good fortune which the miner believed was really his—which perhaps was actually "in sight," has been, for the time being at least, destroyed or stolen by creatures, who were not provided for, hy payment, to abstain from an attack of misrepresentation and falsehood. We have instances at hand where within the last four weeks some of the most promising arrangements for investment of capital in our mines—one plan including the erection of a thirty-stamp mill, have been hroken up—not from any interest or desira to secure parties from loss through hetter information or advice, but simply and solely because the "outsidars" could in no manner persuade the owners of the property to pay tributa.

In two of the cases to which we allude, the minee had heen carefully examined hy competeut men, who came out expresely for the purpose and their report was highly favorable—in fact the property they declared more valuahle than claimed to he hy the parties who offered it; the latter, however, relying upon the real worth of their mines, having turned a deaf ear to the demands of men who had no honest claim or interest in their business, the proparty fell at once under han. Insidiously tha poison worked, till bewildered, and doubtful almost of their own senses, the straugere, who would probahly have invested nearly a qnarter of a million dollars in machinery and improvemente alone, ahandoned all negotiations and left in disgust for their homes.

This is one species of "black mailing;" there are others, however, equally outrageous, some of which are exciting great indignation in this community. Men here, claiming character for honesty and fair dealing—*honorable* (?) men, are growing rich hy practices of extortion in connection with mining affaire. Their operations are reduced to a perfect system, the ramifications of which extand to all the principal cities of the East and the European capitals. Their correspondence finds its way to every nook and corner, and they themeelvee are no amateur rogues. They know the trade—it is their profession, and few, if any, who are so unfortunate as to be caught in their toils, ever escaped unharmed. Is there no remedy for these evile? Will onr miners and those interested in their development, suhmit always to ba rohhed? It ia time, we think, that something should ha dona, to abate the wrong, and thoaa who perpetrate it likewisa.—*Utah Mining Journal.*

Ophir Mining Co.—The Directors of the Ophir Mining Company met on the 19th and re-elected the old officers as follows: President, M. Castle; Secretary, Jos. Marks; Superintendent, J. C. Corey. The gross receipts for the past fiscal year have been $298,136, and the disbursements $293,343; amount of cash on hand, $16,641. No dividends have been paid during the year. The income was principally from assessments, four haying been collected, as follows:

	Per Share.	Amount.
December, 1871	$2	$39,600
April, 1872	5	84,000
July	5	84,000
October	5	84,000
Totals	$17	$235,600

Last April the stock sold for $130 and $140 per share. It is now worth ahout $40. The Directors agreed to submit a proposition to stockholders to increase the capital from $5,040,000 in 16,800 shares of $300 each to $10,080,000 in 100,800 shares of $100 each. Action will be had on the same on the 27th of January.

Gold Hunting in Colombia.

Some of our readers may remember says the *Bulletin,* that in 1866 a numher of Californians were lured to Barbacoas, on the western coast of Colombia, by reports of the existence there of rich placsr mines, which could ha cheaply workad with native lahor. Tha mines were there, sure enough, formed hy the washings of the Cordillera streams for ages; but the owners asked for one-half the product, the climate was sickly, and our adventurers, generally without means, finally ahandoned the country iu disgust. Ona of the few who ramained wae Dr. James Weaver, an old Californian, who had heen a pioneer miner and ditch builder in Nevada and Yuba counties, where a mining canal still bears his name, aud who will be widely remembered when we recall his name, both in this State and Nevada. Weaver left the coast, pushed into the interior of the province of Cauca, which is in the southwestern extremity of Colomhia, and prospected high up in one of the Audean ridges, where he had to cut a trail, and made his way with great hardship. On the hanks of tha river Aguarica, whose name indicates ite auriferous richness, he found gold wherever he washed the gravel. After many vicissitudes he estahlished himself in this lonely country, in a hut with a few Indians. But his Indians deserted him and he was obliged to quit Aguarica. At Yaculo, however, in another part of Cauca, 30 miles from Barhacoas, he found extensive placer deposits similar to the hydraulic minea of California, where one Pablo Rienel, with men, women and children, Indian and Negro, was taking out considerahle gold hy meane of ground sluicing, water heing plentiful for the purpose, and rain falling often enough to keep the grouud constantly in a good condition for washing. Weaver saw Rienel's people wash up 40 pounds of gold, weighed with the steelyards at 16 ounces to the pound. He found the mining county, consisted of high gravel ridges divided hy many ravines and streams, to he very extensive and admirahly adapted for hydraulio operations. Rienel owned 30 square leagues, which he offered to sell for $200,000—and all of it, says Weaver, is regular mining ground. Tha Yaculo diggings are known to very few people, and Rienel is the only one who has tried to work them largely. The nagro women make spending money easily by washing in the ravines. The county is very eparely inhabited. The land, whcn owned hy individuals, is held by title descended from the King of Spain. The laws allow one man a league of mining ground when found vacant, and much of it is vacant and unexplored. Dr. Weaver was eo pleased with the Yaculo country that he hae come to San Francisco to obtain the implements and machinery necessary to hydraulic miming, and means to return there to work some land he has secured. He says labor can be ohtained for $10 a month; that any kind of vegatables can be easily raised, that the climata is good, the people (mostly Spanish and Indians) are friendly, and edihles of all kinde very cheap. But he saye it ie no country for poor men. Without money and implements to work the ground syetematically on a large ecale, Americans would starve there. The Panama *Star and Herald* editorially endorsee Weaver's statements concerning the gold regione of Colombia, which are important outside of Cauca, and prints a long letter from him, decribing that interesting wild country and his adventures—which smack of Californian forty-nine experiance. But ae Weaver saye, it ie certainly no country for poor men.

Discovery in Mendocino.—A rich discovery of mineral is said to have heen made on the ranch of W. Lift, near Point Arenas, in Mendocino county. The deposits consist of coal, which has heen tested and found superior to the Mount Diablo article; of iron, and of a peculiar kind of clay, which is plastic and susceptible to a high polish. A correspondent of the Mendocino *Democrat* states that artistic ornaments are made of it hy the ladies of Mr. Tift's family. When dried and hurned, it becomes very hard and strong. A pitcher made of it dashed to the ground with considerable force did not hreak. Cold water may he poured into any vessel made of it when at a red heat, and it will not hreak. It is helieved that hrick made of this material would he of a superior quality. Several years ago mining operations, in both gold and silver, were condncted in Mendocino, and many of her mountains are believed to be rioh in this kind of wealth, if they were properly prospected. These discoveries may stimulate farther development.

Sulphur Mines.—A San Diego dispatch of the 19th says: Work in the sulphnr mines is progreseing finely. They are located twelve miles from the Colorado river, sixty miles below the frontier houndry line, near the southern end of Cocapah mountains. The sulphur is found in ledges similar to coal veins. One million tons are in sight. Experiments show 75 per cent. of pure sulphnr, which is worth in San Francisco fifty dollars per ton.

Among the narrow-gauge roads now talked of is one from Petaluma te Bloomfield and thence to San Rafael and Saucelito.

Coal Market—Discoveries Near Santa Rosa.

Our contemporary in Petaluma in a recent issue said that coal was being extensively used in that place, and was considered by consumere cheaper than wood. The price of wood is not given. If coal at $15 to $19 per ton ie cheaper, the price of wood must indeed he exorbitant. There are five mines in California and Oregon, now heing worked, from which the San Francisco market is mainly eupplied with coal for domestic uee and eteam purpoees. The yield of the largest field, the Monta Diablo, for tha past ten months of this year, hae heen 148,750 tone. Thie coal ie almost exclusively used for steam. It is consumed upon our river and bay steamers, in mills and manufacturing establishmants, and in some instances upon the steamers which ply hetween the ports along the coast. Its liability to spontaneous comhuetion renders it nnfit and unsafe for long voyagee. Like all the coal yet found eouth of Vancouver's Island, it contains a large percentage of water, which causes it to slack on exposure to the atmosphere. The greater part of it reaches the market as screenings. It is sold in this condition for six dollars per ton; for steam purposes the grata bars of tha furnaces are set close, to prevent waete. Notwithstanding the infarior quality of this coal, it is of immense value to the Stata, as without it all of our manufacturing interest would be paralzed.

The next largest yield of coast coal during the year has been 28,000 tons from Coos Bay. Tha eupply from these mines, which are situated on the coast of Oregon, not a great distance north of the California line, has in the last two yaars taken the place of the Bellingham Bay coal, in the San Francisco markat, for household use. Previous to 1867 the aupply from the Bellingham Bay mine was abundaut and regular. Ahout that time it changed owners, took fire soon afterwards, and has been burning at intervale ever since; the product in consequence has heen fluctuating and uncertain. The coal is hetter than that from Cooe Bay. Two mines, the Eastport and Newport, are now heing worked at Coos Bay, the cost of the coal delivered in San Francisco is not over $7 per ton. Owing to the demand, which increases faster than the facilities for supplying the market and the withdrawal of the Bellingham Bay from competition, the prices of Coos Bay coal by the cargo this fall, was raised to $12 per ton; having heretofore heen sold as low as $8.50 per ton. If able to maintain the present prices, the Coos Bay mines will hecome, although they furnish a coal of very inferior quality, the most valuahle coal mining property on tha coast. At the preeent price when landed on the wharf in San Francisco, a margin for a clear profit of $5 per ton is left for the ownere. Only 2,200 tons of Bellingham Bay have heen put upon the market during the past year. A new mine has been worked at Seattle on Puget Sound quite successfully; 12,000 tone hava been received from this source. It is almost the same quality—little hetter perhaps, than the Coos Bay. All these varieties are lignitee of more recent origin than anthracite or bituminous coal, of the proper coal seriee. In Vancouver's Island at Nanaimo, there ie a vein of good coal. The importations from that quarter have heen 22,000 tons, which have been used principally for making gas. We have also imported from Australia 91,000 tons of ahout tha same qnality of the Nanaimo. It is largely nsed for ocean steamships, and for purposee which require greater heating properties than tha California coal afford. From England 17,000 tons—6,000 tons of Cumberland and 9,000 tons of Anthracite—and from Chili 3,000 tons, complete tha importatione from all quartere dnring the time undar consideration; a total product and importation of 343,131 tone.

By order of the Secretary of War, experimente were mada last Spring to tast the comparative value of tha coals on the Pacific Coast. One cord of the atandard, merchantable, live-oak wood, was found to equal the different varieties of coal produced on this Coast in the following proportione: It required 2,600 lhs. of Coose Bay to equal a cord of wood; the same amount of Monta Diablo; 2,400 lbe. of Seattle; 2,200 lbs of Bellingham Bay, and only 1,800 lba. of Nanaimo, proving the superiority which has always been claimed for the Vanoouvar over the other varieties.

In this connection we would call attention to the discoveries of coal croppinga in this vicinity, upon Mark West Creek. While most of the apecimene are of usual Coast variety, we have in one inatance seeñ samplee of a vary superior quality. It forms a coke and has othar characteristics of a genuine coal of the true saries. If it exiats in any quantity it would prove more valuable than a gold miue. We believe that tha coal indications in the Mark Weat mountains are of aufficient promise and importance to repay carefnl examination, and wa are eurprised that some of our enterprising citizens have not turned their attention to them. If we posseae a coal-field in addition to our other resourcee, our future is indead assured.—*Sonoma Democrat.*

MECHANICAL PROGRESS.

Scientific and Mechanical Possibilities.

A correspondent of the *Scientific American*, says: Gas wells fouad in various localities indicate that immense deposits of coal oil and petroleum exist in the earth. which may be fouad st great depths; and late experiments show that we may burn it for fuel as well as for illnmination; by its nse steam boats may cross the ocesa, and locomotives fly by its aid. We are just beginning to learn the power of this new servant that man has awakened from the sleep of ages. The country also abounds in limestoue, sandstone and bituminous shales, which, by scientific and mechanical aid, may afford an almost never ending supply of this wonderful material.

And notwithtsanding the seemingly advauced state of the means of transportation, it is inadequate to the present wants of man. Steamboats and railroads do not even meet the wants of our own country. Can the possibility of aerial navigation be doubted? Every year is bringing ns nearer to the practical solution of thia great problem.

If a light motive power is required, science may yet discover a cheap method of separatiag alaminum from our clay, some of which contains as much as 30 lbs. of this most wonderful material to the tun. This metal is three times stronger than steel, and as light as chalk. On the very surface of the earth, we daily walk over a material from which the machinery for a motive-power may be constructed of about one-tenth the weight of iron or steel. In the oxygen of the atmosphere is abundant fuel, which may yet be used to rarify the air for a motive power; other powers also exist in Nature, which will, no doubt, yet become the servants of man. One discovery opens vast and expansive avenues leading to unexplored regions, where magnificent creative Nature holds in store rich treasnrea which the scientifio hand may drag from her dark *arcana*.

He who engages his mind, his time, or his fortune in the development of scientific means for bringing forth from Nature'a rich stores that which will add to the eujoyment, happiness and comfort of man is entitled to the greatest honors that can possibly be bestowed by an appreciative world.

Cracked Cylinders.

A correspondent of the *Engineer* furnishes the following with regard to the cause of the cracking of cylinders:

The chief cause of cracked cylinders in large engines is starting the engines to soon. In large ships the steam can be got up in an hour in the boilers; but the eugines should as a rule have from two to four hours to warm the cylinders, so that the metal would have no undue strain on it through unequal expansion when starting; sometimes they get it, at other times do uot. When the steam is up, and just when the cylinders are warmed enough to put the inner ring of metal in a state of compression, and the outer one in a state of teusion, the engines are started at a speed quick enough to bring over a few buckets of water from the boilers. There are a few banga and bumps, and then everything seems to be all right. But some time after, when the cylinders are opened, there is a crack found in one. Some of the cylinders in the merchant service are very large, but they receive quite another sort of treatment; steam is np from four to six hours before starting, and when they do start there is no stopping, with few exceptions, till the ship gets in port again. In the navy, large ships have been known to bank the fires and shnt the steam off the engines five times in twenty-four honrs, and to draw the fires forward, get steam np, and start the engine in from tcn to twenty minntes as fast as they could go. Now the wonder is that there are not more cracked cylenders under such circumstances.

The idea that the weight of the slide and casing ia the cause of the cracks I do not hold with. But the slide casing sometimes assists in cracking the cylinder—as, for instance, when the casing is a good deal hotter than the cylinder, and the engines are started suddenly. However, in that case it is only the webs in the ports that are cracked.

I think the cylinders in the navy are not a bit too large; for even when we get higher pressure, which we must do shortly, we shall still want a large cylinder to get the proper amount of work out of the steam.

Comparative Cost of Iron Steamers.—According to a recent report of the Wilmington Board of Trade, it was estimated that iron ships and steamers conld now be built in the Delaware ship-yards at 12 per cent. in advance of what they would cost on the Clyde. It is also stated that this margin of 12 per cent. would he entirely removed if the same inferior quality of iron were nsed on American vessels as is employed in English steamers. From the fact that manufacturers in Europe find it impossible to fill new orders for iron, based ou the recent advsnces in the raw material, and that no new keels are being laid for iron vessels, it would seem as though our represeatative American capitalists might find a grsnd opportunity in this connection.

What is a Technical, and What a Scientific Engineer.

The question has been briefly and properly answered as follows:—When an openiug is to be spanned over by a material construction, which must bear a certain weight without bendiug enough to injuro itself, there are two forms in which this construction can be made, the arch and the chain. Every part of an arch is compressed or pushed by the other parts; every part of a chain is in a state of tension, or is pulled by the other parts. In many cases these forms sre uaited. A girder consists of two main pieces or booms, of which the upper one acts as an arch and is compressed, while the lower oue acts as a chain and is pulled; and this is true even when both tho pieces are quite straight. They are enabled to act in this way by beiug tied together, or braced, as it is called, by cross-pieces, which you must often have seen. Now, suppose that any good, practical engineer makes a bridge or roof upon some approved pattern which has been made before. He designa the size and shape of it to suit the opening which has to be spanned; selects his material according to the locality; assigns the strength which must be given to the several parts of the structure according to the load which it will have to bear. There is a great deal of thought in the making of this design, whose success is predicted by the application of previous experience; it requires technical skill of a very high order; but it is not scientific thought. On the other hand, Mr. Fleming Jenkin designs a roof consistiug of two arches braced together, instead of an arch and a chain braced together; and, although this form is quite different from any known structure, yet before it is built he assigns with accuracy the amount of material that must be put into every part of the structure in order to make it bear the required load, and this prediction may be trusted with perfect security. What is the natural comment on this? Why, that Mr. Fleming Jenkin is a scientific eagineer.

The difference between scientific and merely technical thought, is just this:—Both make uso of experience to direct human action; but while technical thought or skill enables a man to deal with the same circumstances that he has met with before, scientific thought enables him to deal with different circumstances that ho has never met with before.

The Nes-Silicon Iron.

We made a lengthy reference some weeks since to a superior iron ssid to be made from a peculiar silicon ore found in York county, Pa. The remarkable qualities claimed for this iron seem to be confirmed by actual tests.

It is claimed for this ore that by mixing it with ordinary pig iron in different proportions, steel of any desired quality may be directly produced by the puddliug process. Dr. Nes, who discovered the properties of this ore, believes that its peculiar advantages for the production of steel are derived from electrical action, and that it contains no carbou, but has silicon in combination with an oxide of iron as its principal constituents. It is said that when puddled with ordinary pig iron, five to eight per cent. of the ore mixed with the iron will purify it from phosphorus and sulphur; and that the ore when mixed in larger porportions will transform the iron into excellent steel. It is claimed that steel adapted to rails, cutlery, and other purposes can be procured as desired by varying the proportions of codorus used, and that the result ia invaribly the same. The steel will bear welding upon itself or upon iron without a flux, does not deteriorate by reworking, will not rust, receives a fine temper, and can be produced at a cost of but little above ordinary iron.

The Elmira Rolling Mills have made by this process over 10,000 tons of rails which have been laid on the Erie Railroad, and it is said that not one has broken or laminated. It is reported that the supply of this ore is inexhaustable. If this is true, the importance of the discovery can not be over estimated.

More Experiments in Street-car Propulsion.—Mr. H. Frank, of Pittsburg, is making an experiment in the propulsion of street-cars by an invention which consists in the use of two cylinders, of different capacities, as 1 to 8, the smaller cylinder to be filled with gas at a pressure of 300 lbs., the other with air at the same pressnre, the pressure first to be utilized as power and then supplied in the right proportions for combustion under a vertics1 tubular boiler, where it is ignited by a small burning jet of gas. It is so arranged that no fuel is used except when the car is in motion, when of course neither steam nor smoke will be generated. The inventor claims that the fuel or gas, for a 9 horse-power engine, can be supplied at a cost of only 8 cts. per hour.

SCIENTIFIC PROGRESS.

Scientific and Technical Thought.

Prof. W. K. Clifford, in an address before the British Association, at its late meeting at Brighton, illustrated as follows the difference between technical and scientific thought:—Ancient astronomers observed that the relative motions of the sun and moon rocurred all over agaiu in the same order about every nineteen years. They were thus enabled to predict the time at which eclipses would take place. A calculator at one of our observatories can do a great deal more than this. Like them, he makes use of past experience to predict the future; but he knows of a great number of other cycles besides that one of the nineteen years, and takes account of all of them; and he can tell about the solar eclipse of six years heace—exactly where it will be visible, and how much of the sun's surface will be covered at each place, and, to a second, at what time of day it will begin and finish there. This prediction involves technical skill of the highest order; but it does not involve scientific thought, as any astronomer will tell you.

By such calculations the planet Uranus at different times of the year have been predicted and set down. The predictions were not fulfilled. Then aroso Adams, and from these errors in the prediction he calculated the place of an entirely new planet, that had never yet been suspected; and you all know how the new planet was actaally found in that place. Now this prediction does involve scientific thought, as any one who has studied it will tell you.

Here, then, are two cases of thought about the same subject, both predicting events by the application of previous experience, yet we say one is *technical* and the other *scientific*.

The Nebular Hypothesis.—As regards the stellar and planetary universe, its origin from an all-diffused, nebulous mist, was taught by Kant a century ago. This view was subsequeutly elaborated by Laplace the mathematician, and Herschel the astronomer, into the Nebular Hypothesis, which was the outcome of the whole body of known astronomical facts. This hypothesis affirmed the progressive condensation and differentiation of the nebulous mass through successive stages to more and more concrete and specialized groups, systems, and orbs. That the solar system was gradually formed in the way the nebular hypothesis implies, and that its facts cau be explained by that hypothesis and no other, is uow the general belief of astronomers. Consisting of more than one hundred and fifty bodies, revolving and circulating according to one grand method, it has been pointed out by Prof. Leconte that there are no less than three hundred and seventy facts concerning the distribution, form, and motions, of the sun and planets, which are the simple consequences of the nebular hypothesis, and can be accounted for in no other way. The uebular hypothesis is the doctrine of to-day, in its application to the most perfect of the scences, and it has replaced au *a priori* cosmogony that swayed the human mind for thousands of years before the solar system was discovered.—*Science Monthly*.

Fluorescence.—President Morton, according to the *Gas Light Journal*, has been interesting the Philadelphians with a display of some novel discoveries which he has recently made in the fluorescence of certain hydro-carbons found associated with anthracene. In the conrse of his lecture he showed the following: A large screen, of a pale yellow color, was lowered from the upper regions of the stage, and as the lecturer expressed it, was interrogated in the way of experiment as to what property it possessed, by various colors of light. A brilliant yellow, a green and a red light were successively thrown upon it from an electric lamp, but it remained unchanged and made no sign; then a violet light from the same source streaming over it the word "Fluorescence," flashiug out upon the cloth in immense letters of luminous green, at once answered the question and illustrated the property. So again a gigantic flower, painted in pale monochrome, gleamed out in varied and vivid tints, nnder a like treatment. In another place the speaker alluded to the invisible rays preseut in the solar beam and some other light, which though inappreciable to the human eye, are very active in photography, and then did, what has certainly never before been accomplished—that is, showed the rays, on a fluorescent screen, to the immense audience assembled to hear him. The invisible spectra of copper, silver, zinc, etc., were thus projected and compared.

New Use for Ozone.—A German chemist has ascertained that ozone has the power of decolorizing blood; leaving it a white and perfectly coagulated albumen, in which condition it may be used in calico printing and for some purposes for which the coloring matter in that class of albumen has heretofore rendered it useless. Ozone has also been found to act very powerfully as a disinfectant.

Polarized Light.—The difference between ordinary light and polarized light is due to the fact that while the particles in ordinary light vibrate in every direction, the particles in polarized light, whether it is produced by reflection or by the action of crystalline bodies, vibrate in only a single direction.

Low Blast Furnaces.

The Pittsburg *Iron World* says: "Logic and chemistry are on the side of low blast furnaces of from fifteen to twenty feet highth of stack. Experience favors the present outlandish steeples of stone and mortar, which like so many Babels rise up as monaments of the ignorance of the day. Iron and steel have been made in all ages of the world, and some much superior to the products of to-day; yet we neither read nor discover evidence of monstrous blast furnaces. The ancients had a way of making good iron and steel without means, or at least without such experience and unwieldy appliances, which we have yet to discover.

"Newton's first telescope was 120 feet loag and possessed but limited magnifying powers. Astronomical science has shortened the tube to ten or fifteen feet and has increased a thousand fold its magnifying power. Analogous illustrations can be found in the incipieacy of all sciences and arts. The ancients begun with a bellows of sheep-skin worked by women's feet operating within a small space on a small quantity of material, and the steel of Damascus was the product.

"The present mode of conducting combustion in blast furnaces is at war with the principles of chemistry. It will not be many years before the blast furnace conundrum will be solved. Science is on the side of the students of metallurgy who are pushing their investigations and experiments, and sooner or later we will have iron produced at half its former cost."

The Bottom of the Atlantic.—In a communication to the London Geographical Society, Capt. Osborne states that the bottom of the North Atlantic is occupied by two valleys, the Eastern extendiag from 10° to 30° west longitude, and traceable as far as the equator, with an extreme depth of less than 13,000 feet. The western valley he says, reaches from the thirtieth to the fiftieth degree of west longitude, and the two are separated by a ridge in 30° west longitude, along which the average depth is only 1,600 fathoms, and which can be traced northward to Ireland and southward to the Azores, so that it is volcanic in character at both extremes. Its extreme breadth is found to be somewhat less than 500 miles, and the depth of water is found to increase on both sides of it in accordance to the distance from the axis. From Capt. Osborne's researches in regard to deep sea beds generally, he is inclined to believe that there are no rough ridges, abrupt chasms, nor bare rock, and that the sea bottom at great depths is uot affected by currents or streams, even by those of the magnitude of the gulf stream, and that it rather resembles the American prairies in general appearance, and is everywhere covered by a kind of mud.

Effect of Magnetism on Iron.—During the recent session of the National Academy of Science, at Cambridge, Mass., Prof. Mayer gave some interesting information regarding the effect of magnetism on iron:—He states that he has discovered, by means of the Saxton comparator, that rods of iron suffered a permanent elongatiou by magnetization of one hundred and fifty-millionths of an inch. English refined iron gave the maximum of elongation; scrap iron the miuimum. Whether the current was gradually increased in intensity or whether it was sent full charge at once, it produced the same degree of elongation. With one cell the elongation took place in six-tenths of a second; with 25 cells if took place in two-tenths of a second. Prof. Pierce thought if the elongation of iron under magnetization were trne, it might make in its effect on the earth an appreciable difference in the length of the day. This could be detected by astronomy. A chauge in the day of seven-hundredths of a second would be perfectly easy to discover now.

An Interesting Experiment with Electricity.—Mr. T. C. Webb of Philadelphia has made experiments with a plate electrical machine in an insulated room, that seem to show the fallacy of the ordinary theory of the discharge of a charged conductor. A room 8 feet by 9 and about 8 feet high was constructed, snd suspeuded upon gutta percha and its perfect insulation shown by a Thomson galvanometer. The plate machine acted in all respects the same as in an uninsnlated room, sparks were given off, and the conductor completely discharged when touched to the sides of the building. The experiments given in the *Philadelphia Magazine* seem to show conclusively that the common theory of the electrical machine is erroneous.

Singular Defect in Australian Gold.—It is said that some 6,000 or 7,000 lbs. of Australian gold, known as "brittle," having recently been coined by the French Mint for the Bank of France, all the pieces have been found to admit of being easily broken, and they have therefore to be re-melted. This is attributed to the presence of a small percentage of antimony and arsenic, extremely difficult of removal; and these elements are known to produce a similar effect in all metals or alloys which are subjected to the molecular changes induced by the pressure and heat developed under the action of the dies in the coining-press.

Electricity is developed in metallic wires by merely bending them, and the development appears to be independent of any thermic action.

Stock Sales for Week Ending Dec. 26—S. F. Stock & Ex. Board

NAMES OF COMPANIES.	Feet.	Shs. in ft.	FRIDAY. Shs	Prices.	SATURDAY. Shs	Prices.	MONDAY. Shs	Prices.	TUESDAY. Shs	Prices.	WEDNESD'Y Shs	Prices.	THURSDAY. Shs	Prices.	Tot'l Sh's Sold.	Assess't Delinq't.
Adams Hill	¶	300	20										541		150	1
Alpha	‡	800	25	35	35 @10	35	37 @38	65	40 @41	10	41		465	42½@ 5	1620	1½
Alpa	§	800	37½	204	4 @4¼			970	4¾@ 5				70	6¾	740	
American Flag	§	2600	11½	555	6¾@ 7			115	6½@ 6⅞							¼
Amador Tun															450	
Arkansas	§			450	@ 3					100	1½				570	
Arizona & Utah	¶	1600	19½	190	1¾@ 1⅞	100	1⅞	80	1¾	375	1¾@2				3389	5
Belohsr	*	1000	10	1205	89 @ 96	745	89 @92	400	91 @95	100	1⅞		655	87½@91	245	
Baltimore Con	*					145	1⅞									
Bowery	§	1000	20													
Bacon	§	65	561⅔													
Buckeye	*			100	2¾	20	2¾	50	2¾						150	⅛
Best & Belcher		224	100	130	5½@ 6¼			85	5½@ 5⅝	100	5¾				315	½
Bellevue	‡	3000	2¾												3426	1-6
Belmont				1301	4⅝@ 5¾					2125	4⅞@ 5½					
Chollar		800	10	670	50 @52	232	50 @52½	500	50 @53	635	52½@55¾		95	51 @52	2182	
Caledonia	*	6000	4	535	21¾@24			90	24	310	24 @26		1025		915	
Cons. Virginia	*	1160	20⅜	415	11 @13	175	12 @12½	190	13 @14	70	13½@14⅜		30	13	880	½
Confidence	*	130	192	210	11			16	11	10	10½					
Crown Point	*	800	166⅔	492	89½@96			340	87 @91	320	90 @97	70	96		1347	1
Central	*	70	857													
Calaveras	§	6200	6¾													
Condor	§															
Columbus	§															
Chapman	§	700	40	2050	1½@ 1					1275	1½@ 1⅞		100	¾	3425	¼
Chief of the Hill		1000	30	325	4 @ 4½					690	3⅞@ 4				1015	½
Chief East Ex	§															
Cedarburg	§	1200	20	260	1½					120	1½		40	7⅛	420	¼
Con. Gold Hill Q	*	1⅔	437													
Daney	*	2000	12	2	5⅝				25	15c					320	⅛
Eureka Cons	*	1000	30	2090	14½@15⅛				735	12½@15					3875	½
Eureka	§	1680	4½	40	14				275						315	
Exchequer	*	400	20	40	14½			10	15½						90	1
Eclipse	*	70	357						50	9					60	¼
Empire Mill	*	75	16	1829	6½@ 7¼	745	6½@ 6¾	760	6½@ 7⅛	10	9					
Excelsior	§	4500	2½							900	6¾@ 7				60	
Gould & Curry	*	1200	4	74	165 @ 175	15	159 @ 160	33	170 @ 180	4	180		10	180	136	5
Golden Chariot	§	1600	10	50	10 @ 11								50	9 @10	100	1
Globe		1600	12½	100	1¾@ 1⅞	90	1¾	400	1⅞@ 2	155	1⅞@ 2				715	6
Hale & Norcross	*	400	4	93	79 @82	85	77½@82	190	79½@84	90	85 @88		25	84 @86	485	
Huhn & Hunt	§	3600	8½	330	3 @ 3¼			225	3 @ 3½						555	⅜
Harmes	§			300	3 @ 3¼			500	10½@11⅜				20	11	965	¾
Ida Elmore	*	1300	17½	575	11 @11¾			180	12¾@13				80	12 @12½		¾
Imperial	*	184	543⅜	1680	7 @ 8	985	7¼	1755	7¼@ 7⅝	580	7¾@ 8		20	8	4920	
Ingomar	§	1000	40					150	1½@ 1⅞				450	1½	600	⅜
Independent	§	1800	14													
Ivanhoe	§	600	15	10	25c					350	¾				450	
Julia	*	2000	15	160	3¼@ 3½	10	3½			50	3¾		65	3¾	285	¼
Justice	*	3000	7	30	6¼@ 6⅜	10	6½			30	6⅞@ 6⅝				70	2½
Kentuck	*	95	21					10	142½			5	140		30	7½
Kentucky	§		20													
Knickerbocker	§	1900	20	480	5					180	4⅞@ 5	665	5 @ 5⅛		1379	
Mammoth	§	1800	20										50	5		
Meadow Valley	§		12½	955	17⅜@18⅝					1962	17 @17½				3412	¼
Mahogany		720	137½	440	9¼@ 9½					100	8¾@ 9		495	17 @17¼	940	1½
Mocking Bird	§	1200	25							2000	10				2000	⅛
McMahon																
Monitor Belmont	§			300	15										300	
Newark	§	800	40	320	22@ 3					50	2¾				370	¾
Ophir		1400	12	2535	36 @ 36½	135	36 @36½	60	37 @39	85	39 @40		180	39¾@41	715	3½
O. K. Treasure	§	800	26⅔													
Overman		12 0	10⅔	255	61½@64¼		66	65 @66	260	65½@67		25	65		604	½
Occidental	*	800	12½						50	1¾					50	
Pioche	§	1000	20	150	9½				85	9					280	
Pioche West	§								100	1⅝					100	
Pioche Phœnix				667	7½@ 8½				2720	6¾@ 7¾			810	6⅞@ 7¾	9600	¾
Page & Panaca	§	240	16⅔	310	2				250	2 @ 2⅛			150	2	700	
Pea Vine	§	1000	30	600	65c				200	65c					800	
Phœnix				350	2¼@ 2⅜				110	2¼@ 2½			350	2 @ 2⅛	810	2-8
Raymond & Ely	§	4000	1¼	810	79 @82½				895	80 @ 87			250	85½@87½	1955	5
Savage	*	800	20	470	11 @73½		97	71 @72	280	71 @ 78	390	76½@79½	125	6 @6½	1362	3
Seg. Belcher	*	160	40	30	62 @64						15	65 @67½			45	3½
Sierra Nevada	*	3000	7¼				95	13½@14½		5	13¾				100	
Senator				70	1		100	1							170	
Snooper		7600	3													
Silver Hill	*			20	7½		150	7½	5	7¾		15	7⅞		190	⅜
Silver Peak				375	1				200	⅜ @ ⅜					575	⅛
South Chariot	§	660	30½						100	½			75	50	175	
Trenton	§	200	250													
Tecumseh																
Wash. & Creole	§	200	150	150	2				80	2 @ 2¼			20	2	250	¼
Woodville		1400	20	100	4½				350	4¾@ 5		35	5		485	½
War Eagle		1000	10	10	1										100	
Utah		1000	20													1
Yellow Jacket	*	1200	20	260	73 @76		550	70 @72½	330	72 @ 77	380	73 @76		240	73 @75	1760	
Yule Gravel	†	400	25													
Yellowstone				50	4				150	4 @ 4½					200	⅛

NOTE.—†—California. *—Washos. ‡White Pine. §—Ely District ¶Eureka District. ‖—Idaho. ⁞—Nearly.?—Over.

S. F. Stock and Exchange Board,

THURSDAY, Dec. 26th, 1872.

The business at the Board has been somewhat less than usual, owing to the adjournment over one day on account of Christmas, and in part by reason of the generally depressed condition of stock during the early part of the week under review. A reaction set in on Tuesday which continned, though somewhat quietly, on Thursday.

On Friday the market was weak, nearly all descriptions called being from $1 to $5 lower than for the corresponding Board on Thursday. Kentnck fell $10; Gould & Curry, Segregated Belcher and Yellow Jacket, each $5; Consolidated Virginia, Overman and Savage, $3 each. Several other companies declined $1 each. Hale & Norcross aad Raymond & Ely advauced $2.

On Saturday the market still continued weak, the "bear" influence having evidently been at work circnlating absurd rumors adverse to some of the Washoe stocks. At the close Belcher was $3 lower; Crown Point, $2; Cons. Virginia, $1; Gould & Curry, $7; Hale & Norcross, $3; Jacket, $4. Savage rose $1. Raymond and Ely fell $2; Overman, $1.

On Monday the market still continued dull, with a declining tendency. Compared with Saturday's rates Overman advanced $4; Belcher, Caledonia, Hale & Norcross and Consolidated Virginia, $1 each. Crown Point, Savage and Yellow Jacket each declined $2. Alpha, Chollar-Potosi and Imperial, each $1. The "bear" influence was still appareut. News from the various mines was meager, while the most extraordinary and unexplained delays iu developing some of the leadug mines were but little calculated to encourage operationsin the Board.

On Tuesday the market was stronger, there being quite a general call at the Board, and most kinds advancing from $2 to $4. From Monday noon Gould & Curry advanced $20; Crown Point, $5.50; Hale & Norcross, $4; Overman, $1; Raymond & Ely, $5.50; Savage, $4; Jacket, $2. The Board adjourned over from the morning eession to Thursday morning, to allow of the celebration of Christmae.

On Thureday the market opened with a somewhat qniet demand. Pricee were generally higher than on Tueeday. From the last previone ealee, Segregated Belcher advanced $6.50, Chollar-Potosi, Crown Point, Hale & Norcross, Ophir and Overman each advanced $2 Alpha, Caledonia, Consolidated Virginia and Savage, each $1. Belcher declined $3 and Kentuck $2. The Raymond & Ely mine has sent down $256,000 on December account.

Below will be found news from the prominent mines later than that in our "Mining Summary."

RAYMOND & ELY.—On the 19th, the sum of $33,569 was shipped; on the 21st, $31,481; on the 24th, $34,158. Previous shipments to last of this month amonnted to $190,400, which makes a total of $256,039 for 24 days, eqnal to $10,668.29 per day.

HALE & NORCROSS.—For week ending Dec. 21st, 864 tons of ore were extracted; 1,158 tons sent to mill, and 1,099 tons remained on dump.

SAVAGE for week ending Dec. 21st, 982 tons of ore were extracted, assaying $25.65 per tou; 1,107 sent to mill, and 115 tons remsined on dump.

IDA ELMORE.—A letter of the 15th says: Have to-day started up ten stamps of onr mill on our own ore, and will soon have the whole mill constantly employed on ore from our mine. The ledge is full four feet wide, and carries good ore through the entire vein. Will be ready to start ore drifts north and sonth within a few days, and commence raising ore from this level.

BUCKEYE.—Letter of the 21st says: The following is a snmmary of operations at the company's mine for the week ending this date: Ore extracted, 160 tons; ore forwarded to mill, 153½ tons; average assay valuè of ore mined, as determined from car samples, $18.62 per ton. Those portions of the mine from which ore is being extracted continue to look and yield fully as well as one week ago. Prospecting portions show no change.

OPHIR.—Letter of the 24th says: In face of drift from 465-foot station, we have struck a fine looking body of quartz, widening rapidly going north, which we are preparing to drift work on. From the end of main south drift, second statiòn, we have a crosscut west, and have started a crosscut east to prospect the ledge in that locality. The quartz being drifted on at other points remains about the same as at last report

EUREKA.—Last week's clean up was 1,600 ounces of amalgam.

SALE OF A MINE.—The Wyoming mine, located on Deer creek, about two miles below Nevada City, has been sold to Messrs. James M. Gunn and Wm. Blakey, of San Francisco, for the sum of about $60,000. The new-comere will commence work on the mine at an early day, and will find plenty of gold in it.

OUR MINING SHAREHOLDERS' DIRECTORY.

[COLLATED WEEKLY FROM ALL NOTICES ADVERTISED IN S. F. JOURNALS.]

ASSESSMENTS.

Name of Co.	Location.	Secretary.	Office in S. F.	Assm't.	Levied.	Deling't.	Sale.
Adams Hill Con. M. Co.	Eureka Dist.	W. W. Traylor.	414 California St.	25	Dec. 23.	Jan. 24.	Feb. 14
AMAZON S. M. CO.	Ely District.	M. J. McManus.	609 Sacramento St.	10	Oct. 22	Jan. 6	Jan. 22*
Arizona & Utah	Washoe.	Joseph Maguire.	419 Cal. St.	1 00	Dec. 7	Jan. 10	Jan. 30
Arkansas M. Co.	Ely District.	J. H. Applegate.	729 Montg'ry St.	50	Nov. 6	Dec. 16	Jan. 10
Baltimore Con. M. Co.	Washoe.	D. T. Bagley.	401 California St.	50	Nov. 12	Dec. 18	Jan. 11
BUNKER HILL Q. M. CO.	Cal	Charles H. Knox, pro tem.	19 First St.	10 00	Dec 3	Jan. 6	Jan 27*
Calaveras G. M. Co.	Cal.	T. B. Wingard.	318 California St.	25	Nov. 14	Dec. 18	Jan. 7
Caledonia S. M. Co.	Washoe.	R Wegener.	414 California St.	3 00	Nov. 9	Dec. 13	Jan. 3
Chapman M. & M. Co.		E. Swift.	415 Montgomery St.	25	Dec. 12	Jan. 20	Feb. 12
Con. Virginia M. Co.	Washoe.	D. T. Bagley.	401 California St.	3 00	Dec. 16	Jan. 20	Feb. 13
CORDILLORA G. & S. M. CO.	Mexico.	Henry M. Reed.	321 Washington St.	15	Dec. 21.	Jan. 21.	Feb. 10*
Esta Buena Con. S. M. Co.	Nevada.	A. Noel.	419 California St.	25	Dec. 16	Jan. 23	Feb. 12
"420" M. Co.	Washoe.	H. D. Howard.	523 Montg'ry St.	1 00	Nov. 23	Dec. 27	Jan. 14
GOLDEN RULE M. Co.	Tuolumne Co.	J. B. Russell	422 Montg'ry St.	50	Nov. 2	Dec. 3	Jan 4*
Granite Tunnel M. Co.	Cal.	W. G. Holmes.	443 California St.	6	Nov. 21	Dec 24	Jan. 6
GREAT BLUE G. R. CO.	Cal.	Wm. H. Watson.	302 Montg'ry St.	10	Nov. 16	Dec. 18	Jan. 7*
Green Valley Blue G. Co.	Cal.	A. D. Carpentier.	Merchants' Ex.	25	Dec. 12	Jan. 11	Feb. 3
Hale & Norcross S. M. Co.	Washoe.	J. F. Lightner.	438 California St.	5 00	Dec. 12	Jan. 15	Feb. 5
Harper S. M. Co.	Ely District.	J. W. Wilde.	306 Montg'ry St.	10	Nov. 23	Dec. 25	Jan. 13
HUDSON G. M. CO.	Cal.	J. L. King.	411 California St.	7½	Nov. 11	Dec. 16	Jan. 6
Hermes M. Co.	Ely Dist.	6. B. Minor.	411½ California St.	1 00	Nov. 7	Dec. 13	Jan. 6
Huhn & Hunt S. M. Co.	Ely Dist.	L. Kaplan.	Merchants' Ex.	1 00	Nov. 12	Dec. 18	Jan. 8
IVANHOE S. M. CO.	Ely District.	Daniel Buck.	331 Montgomery St.	1 00	Dec. 12	Jan. 19	Feb. 9*
Jewett & S. M. Co.	Washoe.	J. M. Buffington.	Merchants' Ex.	5	Dec. 13	Jan. 17	Feb. 3
Josephine Q. M. Co.	San Luis Obispo.	G. Stanckv.	305 Sansome St.	2 00	Dec. 4	Jan. 13	Feb. 4
Jstice M. Co.	Washoe.	R. Wegener.	414 California St.	1 00.	Dec. 11	Jan. 14	Feb. 4
Kentuck M. Co.	Washoe.	F. Swift.	415 Montgomery St.	10 00	Dec. 12	Jan. 15	Feb. 5
Kentucky G. & S. M. Co.	Ely District.	J. P. Cavallier.	638 California St.	50	Dec. 2	Jan. 11	Feb. 1
Lady Emma M. Co.	Cal.	A. D. Carpenter.	Merchants' Ex.	25	Dec. 12	Jan. 11	Feb. 3
Lander Con. M. Co.	Eureka, Nev.	J. Lincoln.	332 Montgomery St.	10	Nov. 14	Dec. 16	Jan. 8
Lane & Kurz Carihoo M. Co.	British Col.	B. B. Minor.	411½ Cal. St.	5 00	Nov. 3	Jan. 4	Jan. 25
Magnolia S. M. Co.	Eureka Dist.	L. Kahlan.	Merchants' Ex.	10	Dec. 11.	Jan. 22.	Feb. 10.
McMon S. M. Co.	Schell Creek.	G. R. Spinney.	320 California St.	25	Nov. 25	Dec. 28	Jan. 20
MAMMOTH BLUE G. CO.	Cal.	J. M. Buffington.	New Merchants' Ex.	8	Nov. 18	Dec. 23	Jan. 13*
Mammoth S. M Co.	White Pine.	J. L. King.	411 California St.	10	Nov. 12	Dec. 18	Jan. 8
Marion S. M. Co.	Ely District.	L. Kaplan.	Merchants' Ex.	25	Dec. 9	Jan. 15	Feb. 5
Minnesota G. & S. M. Co.	Idaho.	Wm. Wilde.	418 Cal. St.	50	Nov. 21	Dec. 23	Jan. 18
Mile Rock M. Co.	Placer Co., Cal.	G. R. Spinney.	320 California St.	30	Nov. 19	Dec. 23	Jan. 13*
MOCKING BIRD M. CO.	Nevada.	H. C. Kibbe.	419 C-l. St.	10	Dec. 5	Jan. 10	Jan. 31*
MT. JEFFERSON M. & M. CO.	Cal.	J. W. Wade k.	418 California St.	15	Dec. 18.	Jan. 27.	Feb. 17*
New York Con. M. Co.	Washoe.	H. C. Kibbe.	419 Cal. St.	25	Nov. 6	Dec. 12	Dec. 30
NORMAN G. M. Co.	Amador Co.	W. H. Watson.	302 Montgomery St.	5	Nov. 11	Dec. 12	Jan. 4*
Nye M. M. Co.	Nye Co., Nev.	B. B. Minor	411½ California St.	50	Nov. 7	Dec. 13	Jan. 6
OLD PROVIDENCE M. Co.	Lassen.	Frank Swift.	415 Montgomery St.	25	Nov. 7	Dec. 14	Jan. 6*
OPHIR C., S. & G.M. CO.	Placer Co.	O. H. Bogart.	402 Montgomery St.	10	Dec. 10.	Jan. 25.	Feb. 17.*
Orient S. M. Co.	Ely District.	J. Maguire.	411 California St.	25	Nov. 26	Jan. 3	Jan. 27
Overman S. M. Co.	Washoe.	W. A. Watson.	414 California St.	$5 00	Dec. 21.	Jan. 25.	Feb. 12
Pacific Coal M. Co.,	Contra Costa Co.	A. Lachman.	First and Market.	10 00	Sept. 25	Nov. 13	Nov. 30
Petticoat M. Co.	Cal.	J. F. Lightner.	438 California St.	50	Dec. 18	Jan. 20	Feb. 12
Pioche West Ex. M. Co.	Ely Dist.	T. W. Colburn.	418 California St.	25	Dec. 18	Jan. 27	Feb. 24
Pioche S. M. Co.	Ely District.	J. F. Talbott.	419 California St.	1 00	Nov. 6	Dec. 12	Jan. 6.
Phœnix S. M Co.	Eureka District.	J. Maguire.	419 California St.	50	Nov. 8	Dec. 16	Jan. 6
PIERMONT M. & M. CO.	Nev.	J. W. Clark.	418 California St.	50	Nov. 21	Dec. 30	Jan. 24
Placer G. M. Co.	Placer Co., Cal.	G. W. R. King.	411 California St.	50	Dec. 3	Jan. 6	Jan. 27
Placer G M. & C. Co.	California.	G. W. R. King.	411 Cal. St.	20	Nov. 11	Dec. 14	Jan. 4
Pocahontas G. M. Co.	El Dorado Co.	J. L. King.	401 California St.	50	Dec. 3	Jan. 4	Jan. 28
QUARTZ HILL M. & W. CO.	Cal.	T. F. Cronise.	438 California St.	10 00	Dec. 4	Jan. 14	Feb. 4*
Red Jacket G. & S. M. Co.	Washoe.	H. C. Howard.	332 Montgomery St.	10	Dec 6	Jan. 10	Jan. 25
Rising Star.	Eureka Dist., Cal.	J. M. Buffington.	Merchants' Ex.	15	Nov. 22	Dec 27	Jan. 13
Sanderson G. M. Co.	Cal.	W. Stuart.	418 California St.	12½	Nov. 25	Dec. 27	Jan. 17
Savage M. Co.	Washoe.	E. B. Holmes.	401 Cal. St.	$10 00	Nov. 14	Dec. 17	Jan. 4
Silver Peak M. Co.	Ely District.	H. C. Kibbe.	419 California St.	50	Dec. 6	Jan. 11	Jan. 31
South Chariot M. Co.	Idaho.	J. L. King.	411 California St.	50	Nov. 27	Jan. 6	Jan. 27
SPRING MOUNTAIN T. CO.	Nev.	J. M. Buffington.	Merchants' Ex.	20	Dec. 17	Jan 25*	Feb. 17*
Succor M. & M. Co.	Washoe.	W. H. Watson.	302 Montgomery St.	1 00	Nov. 16	Jan. 6	Jan. 27
Summit M. Co.	Amador Co., Cal.	Geo. Davidson.	734 Montgomery St.	25	Dec. 17	Jan. 20	Feb. 7
Tsemmseh G. S. & C. M. Co.	Cal.	F. J. Herrmann.	418 Kearny St.	25	Nov. 18	Dec. 27	Jan. 17
Tehama Con. M. Co.	Schell Creek.	W. W. Stetson.	414 California St.	40	Nov. 27	Dec. 28	Jan. 18
Union Gravel M. Co.	Cal.	T. Derby.	320 Sansome St.	1 50	Dec. 7	Jan. 25	Jan. 15
U. S. GRANT M. CO.	Cal.	Enos Taylor.	226 Clay St.	50	Nov. 19	Dec. 30	Jan. 20
Utah M. Co.	Washoe.	W. E. Dean.	419 California St.	1 00	Nov. 7	Dec. 12	Jan 4
VIRGINIA CON. M. CO.	Cal.	T. B. Wingard.	318 California St.	2	Dec. 11	Jan. 20	Feb. 10*
Washington & Creole M. Co.	Ely Dist.	F. D. Cleary.	Merchants' Ex.	50	Dec. 21	Dec. 26	Jan. 15
Wellington M. & S. Co.	Utah.	J. Wegner.	414 California St.	10	Nov. 12	Dec. 18	Jan. 7
War Eagle M. Co.	Idaho.	C. F. Balcolm.	426 Montg'ry St.	2 00	Nov. 4	Dec. 10	Jan. 6
Ward Beecher Con. M. & M. Co.	Nev.	D. A. Jennings.	401 California St.	1 00	Nov. 21	Dec. 23	Jan. 22
YULE GRAVEL M. CO.	Cal.	Wm. H. Watson.	301 Montgomery St.	20	Dec. 18	Jan. 13	Feb. 10*

MEETINGS.

Name of Co.	Location.	Secretary.	Office in S. F.	Meeting.	Date.
Amador M. Co.		Wm. Mackintosh.	402 Montgomery St.	Special	Dec. 31
Con. Virginia M. Co.	Washoe.	D. T. Bagley	401 California St.	Annual	Jan. 9
Eagle Quicksilver M. Co.		Wm. H. Watson.	302 Montgomery St.	Special	Feb. 21
Indns & M. Co.		Called by Trustees.	Merchants' Exchange.	Special	Jan. 6
Kentuck M. Co.	Washoe.	Called by Trustees.	415 Montgomery St.	Special	Jan. 2
Lemon M. & M. Co.			608 Merchant St.	Special	Jan. 6
Ophir S. M. Co.	Washoe.	Jos. Marks.	Merchants' Exchange.	Special.	Jan. 27
St. Patrick G. M. Co.	Cal.	Called by Trustees.	401 California St.	Special	Jan 21
Ward Beecher S. M. Co.	Nevada.	C. F. Balcolm.	426 Montgomery St.	Annual	Jan. 15

LATEST DIVIDENDS—(Within Last Three Months.)

Name of Co.	Location.	Secretary.	Office in S. F.	Amount.	Payable.
Belcher M. Co.	Washoe.	H. C. Kibbs.	419 California St.	$3.00.	Sept. 10
Black Diamond Coal Co.	California.	P. B. Cornwall.	Cr. Harrison and Spear.	½ per cent,	Nov. 11
Cederburg G. M. Co.	California.	D. M. Bokee.	420 Montgomery St.	50c.	Nov. 20
Eastport Coos Bay Coal.	Oregon.	J. L. Pool.	Merchants' Ex.	$5 00	Dec. 10
Eureka G. M. Co.	Grass Valley.	R. Wegener.	414 California St.	$1 00	Dec. 10
Mahogany G. & S. M. Co.	Idaho.	T. J. Owens.	402 Montgry, St.	$1 50	Aug. 7
Meadow Valley M. Co.	Ely District.	T. W. Colburn.	409 California St.	1 00	Dec. 16
Raymond & Ely M. Co.	Ely Dist., Nev.	A. J. Moulder.	419 California St.	$2 00	Dec. 10
Pioche S. M. Co.	Ely Dist., Nev.	C. E. Elliot.	419 California St.	$1 00	Aug. 10
Providence G. & S. M. Co.		J. M. Buffington.	Merchants Exchange.	$1 00	Nov. 12

* Advertised in this journal.

MINING SUMMARY.

THE following is mostly condensed from journals published in the interior, in proximity to the mines mentioned.

California.

ALPINE COUNTY.

MONITOR.—Monitor *Miner*, Dec. 14: Monitor Main Tunnel struck a quartz feeder 2 inches thick on Tuesday, which, is now over a foot thick and filled with sulphurets.

HOISTING WORKS are talked of for the Silver Glance.

TIMBERING and gettingready for regular work, is the report from the Tarshish.

AMADOR COUNTY.

KENNEDY.—Jackson *Dispatch*, Dec. 21: The machinery for the new hoisting works has been received and will be in runniug order in a few days. The work of sinking the new shaft is being vigorously prosecuted, and the rock taken from the old shaft continues to "pan out" well.

CALAVERAS COUNTY.

PETTICOAT.—Calaveras *Chronicle*, Dec. 21: The pay recently struck grows wider and richer as the level progresses north, and the indications are extremely favorably that the ledge will develope into a permanent, profitable mine.

UNION MINE.—Now that their title is perfected operations will shortly be resumed.

INYO COUNTY.

BONDED.—Inyo *Independent*, Dec. 14: It is understood hereabouts that the Silver Sprout mines have been bonded to a S. F. Co. for a large sum.

KERN COUNTY.

RICH STRIKE.—Havilah *Miner*, Dec. 14: Abont 3 weeks ago the Joe Walker Co. put some men to work on the Cumberland that has laid idle for eeveral years. On sinking on it they struck a finely developed ledge of about 3ft. in width and which prospects about $25 to the ton. They have about 60 tons of rock on dump which will be crnshed soon.

NEW DISCOVERIES.—Several rich ledges have been discovered uear the Grizzly Mt. Dis. within the past week. The ledges are large and $40 rock is considered commòn.

ANOTHER.—On Sunday last O. M. Onmmings and G. Freeze discovered a very valuable quartz lode in Pi Ute Dis. The ledge is said to be 6ft., prospects well, and crops out for a long distance.

NEVADA COUNTY.

STRUCK IT.—Nevada *Transcript*, Dec. 19: At the Soggs' claim, on Deer Creek, they have a first rate ledge 8ft. thick. The Sup. has purchased a new battery, aud is going to fit the mill up in first rate order for work.

IMPORTANT ENTERPRISE.—Duryea & Rose have purchased the extensive claims, ditches and water rights of Timmons, in the vicinity of Chalk Bluff, Little York township for $100,000. This purchase includes valuable miniug claims, a four-sevenths interest in the Irish ditch aud other water rights.

SCHMIDT MINE.—The mine is to be shut down for a short time to put np machinery and make arrangements for more extensive workings. Ten tons of fine specimeu rock are out which will be crushed.

IDAHO.—G. V. *Union*, Dec. 17: They have a 35-stamp mill and two rock breakers. The hoisting works and mine are in complete order, and the condition of the mine enconraging. During the year 590 ft. of drifts have been run, 189 ft. of raise made, 380 of new shaft rnn, and 11,410 tons of ore crushed. The 400 level is in 386 ft. from the new shaft; the 600 east level is in 584 ft. from the liue of the old shaft, or 414 ft. from the new shaft, and the 600 west level is into the line of the Eureka. The 700 west drift is iu 190 ft. from the old shaft, or 9 ft. from the run of the new shaft.

PLACER COUNTY.

OUR MINES.—Placer *Argus*, Dec. 21: On the Eclipse they have sunk 2 shafts. A mill is uuder way, and will be completed by the first of January. The St. Patrick mill continues to run night and day, and have crushed a qnantity of ore from the Shipley with results satisfactory to the Co. Also some 30 tons from Crater Hill, which hae paid well. The Spanish mine, since they have found the body of rich ore, have continued to drift on the ledge and find it to be a continuons chimney and very extensive.

At the Bellevue, in the three ehafts that they are sinking and running levels from, they find very good ore, and particularly from the maiu tunnel.

DUTCH FLAT.—Cor. same: The Cedar Co. is carrying on a large amount of work. They are sinking a shaft on the Deep Shaft claim

and ars down 65 ft. Tbe same Co. is running a large tunnel from the Datch Flat ravine through very hard rim-rock to tap tbeir groand on the soath side of the ravino. This Co. is also putting in a new line of flume on the Central.

PLUMAS COUNTY.

Black Hawk.—Quincy *National*, Dec. 14: Rice, Turner & Co. have made a fair season's work, and have lately been digging ditches, etc., aad getting ready for the spring rnn of water.

New Claims.—A new Ca. has been formed, and work will commence on Manday next, to bring ths waters of Clear Creek, on tho Indian Valley road, to a gravel deposit, some three-quarters af a mile from the creek.

TUOLUMNE COUNTY.

Sonora *Independent*, Dec. 21: Hesler.—At 300 ft., the vein is 10 ft. wido. Every sbot tbey pnt in the rock, fine gold is perceptible.

Griffin.—Last week on the 600 ft. level, the vein was 6 ft. wide and very rich. Rock will go over $300 per ton.

Iaan Mine.—A party has taken up tho Chrome Iron Lode, helow Montezuma. At one place, 20 tons have been taken out, and shipped off.

Finished.—The Santa Maria Mill is finished. The miaers have about 150 toas of ore out on dump that prospected hig to the pan. On the 15th inst. they were in on the load 225 ft.

Nevada.

ELKO COUNTY.

Railroad Dist.—Elko *Independent*, Dec. 21: Mr. Ronlstone contemplates the erection of an improved furnace on the Ella. He let a contract for running a tnnnel on the Tripoli 75 ft., and on the Wehfoot for 80 ft. On the latter claim the main tunnel is in 75 ft., but has to be run about 125 ft. before striking the ledge.

J. W. Hussey is pushing work on tho Last Chance and the Hussey tunnel. In the former he is stoping, taking out ore for the furnaco, which was to have started np on Taesday. The furnace is in good runniag order, consnmiag some 20 tons of ore per day. Mr. Hussey has aboat 200 tons of oro on dump, and an nnlimted quantity in sight.

American Flag.—The depth is 400 ft. A contract was let a short time ago to sink 100 ft., and about 24 ft. bave been sunk. From the 4th level contracts were let to rnn drifts east and west, one for 100 ft. and the other for 200 ft. About 30 ft. has been finished on eacb drift. There is some good ore in sight.

Sunbeam.—3 ft. of ore in sigbt with assays of $1,380 to the ton.

Pacific Tunnel.—The wiuze on the first ledge is down 60 ft., and as soon as 100 ft. is attained drifting will be commenced. A drift from the main tunnol has been commenced to tap the second ledge, which will be cut in about 35 ft., and then ore will be taken out.

Caroline.—Has completed its shaft to the depth of 100 ft. and well timbered the entire distance. A contract to sink 50 ft. more has been let.

Montana—Has reached a dopth of 85 ft. Last evening some very good rock came in.

Silver Paak—Continues to improve as depth is attained.

Pioche Champion. — Shaft down 205 ft. Working steadily.

Standard—Has two shafts, one 120 ft. deep and the otber 177 ft. Tbere are also 2 drifts.

ELY DISTRICT.

Bullion.—Ely *Record*, Dec. 14: The shipments for the week were $152,812.63.

Charter Oak.—Tbursday last a body of ore was struck 5ft. in width. Assays were immediately made and the results showed $1,300 and 1,450.90 to tbe ton. Eight tons have been hoisted to the dump.

Wide West.—A wealthy Co. has been formed in S. F. proposing to incorporate the mine with a capital stock of $3,000,000.

Pioche Phenix.—The working shaft has reached 170ft. The hoisting works are nearly completed and will be ready to start np this week. In the old works fiue ore is being steadily hoisted. Tbe Sup. expects to have 100 tons of ore milled this month.

Toeler.—Work is being pnshed rapidly ahead. The shaft is down eome 80ft. with a good ledge, several tons of ore have been placed on dump and the probability is that the coming week will show a rich body of ore.

EUREKA DISTRICT.

Rudy Hill Tunnel.—Eureka *Sentinel*, Dec. 17: More than 300ft. of tunnelb as been run, and the indications of ore are good.

Prospect Mt.—The Fourth of Jnly tnnnel has reached a point within 30ft. of the line of tbe ledge.

The Silver West Cons. Co. intend to commence a working tunnel at the Excelsior immediately. It is expected to tap the large body of ore already in sight at a greater depth.

The Morris and Whippoorwill are not being worked this Winter.

The Slow and Sure has developed a secon vein of ore of fair qnality.

The first deposit of ore in the diamond has been traced to the eud works at a depth of 75ft.

Prospect mountain tunnel having reached a length of 100ft. work is snspended probahly for the Winter,

Baln Mt..—The Hoosac is the only mine being worked at present.

Spring Valley.—A number of the most valnable mines have been sold to the Lemon M. and M. Co.

HUMBOLDT.

Bullion.—Unionville *Silver State*, Dec. 21: Amonnt shipped from tbe Arizona since aur last issue was $6,000.

White Cloud Dist.—Tho Moonta copper ledge has been bonded to an Eastern Co. for $30,000 for 3 months.

Ellenore.—Work is boing prosecuted vigorously. At the depth attained, 12 ft. from the surface, ths lodge is 8 ft. wide, and the are richer than at ths sarface.

REESE RIVER.

Manhattan.—Reese River *Reveille*, Dec. 19: Tho Manhattan mill which closed dowa for several weoks past will start np agalu ahout the first of next week. Abont 400 tons of ore are on hand.

Belmont. — Cor same. El Dorado South Con. Co. have resumed work in tho lower levels of the El Dorado. The 400 ft. level is in 125 ft. south of the incline. Good milling ore is in tho face of tbo drift. Ths 340-ft. lovel has been run 230 ft. south, at the ond of which a wiaze is being sunk through good ore, now at a depth of 30 ft. Tho ore bodies abovo the 240-ft. level are showiug splendid ore, and are being put in shape for stoping. Over 700 tons of first-class, and 800 tons of secoad-class aro are on the El Dorado dump. Work in the Arizona is being pushed ahead fast. A great deal of very rich ore is being takeu from the old works north of the Miller incline. The El Dorado Co.'s new mill is fast approaching completion. Working in all 80 men.

Belmont Co. ie drifting below water level. The Highbridge mine is idle at present. Working in the Canfield 35 men.

Monitor Co. have commenced stopiag in the upper levels; taking out 20 tons of rich chlorides daily. Some 20 tons of second-class ore are being reduced daily which gives by pulp assay $228 per ton.

Silver Point is 13 miles west of Belmont. Ahout two months ago some fine ledges were discovered. The Europa is tbe principal ledge ia the dist. It measnres from 6 to 8 ft. in width; dips 60 degs. to tbe east; crops ont over 400 ft. Several lote of ore have been brought to town, which assay as bigh as $2,000 per ton. The Diamond, Capital and Ruby all share the same character of ore but are smaller strata.

Jefferson Cañon is 12 miles northwesterly from Belmont.

Tbe Prussian Sonth has an incline down 35 ft. Tbis vein is traced over 2,000 ft. and has fine walls.

The Prussian North has an incline down 90 ft; several toas of fine ore lie on dnmp; vein looks well at the bottom.

Sailor Boy has two inclines down 60 ft. each; has a lot of fine ore out.

WASHOE

Sierra Nevada.—Daily yield, 55 to 65 tons of good milling ore. The ore-breasts in the upper and middle portions of the miue are looking and yielding well. Tbe prospecting drifts on the 500-ft. level of the new shaft are pushed energetically ahead. The mill is kept steadily running.

Woonville.—Depth of shaft increased 30 ft. It will reach the point for the next level, 100 ft. helow the present lowest level about the 5th of next month, when the mine will be fully opened out and three mills started working on the ore.

Hale & Norcaoss.—Daily ore yield 150 tone. Incline down 75 ft. below the 1700-ft. level. The work of putting in the new pump-hobs is making excellent progress, and opening the 22th station is being rapidly accomplished.

Gould & Curry. — Sinking the incline progressee slowly but steadily, the rock working qnite tongh and hard.

Julia.—Everything will be in readiness to again commence work in the shaft by Monday next.

Kentuck. — Water from the Crown Point has prevented cross-cutting at the 1300-ft. level from peuetrating to the east wall.

Mint—Shaft down nearly 60 ft. More clay and qnartz is coming in, and favorable indications increase. The assays during the week have run over $200 per ton.

Crown Point.—The face of the cross-cut at the 1300-ft. level is in porphyry, the ore-vein being passed through. The sontb drift is in splendid ore; in fact, the ore-body at thie level looks better or is more free from waste than in the levels above.

Baltimore Con.—Shaft 379 ft. deep. Drift at the 250-ft. level in 160 ft.

Globe. — The main west drift is driven steadily ahead. Tne ore-body being developed in the raise from the tunnel-level is looking finely.

Insurance.—Tbe incline is down 80 ft., the full size of the shaft in good ore.

Arizona ann Utah.—Shaft down 218 ft. The new hoisting-works are fast being pushed forward to completion.

Jacob Little. — The ore taken out in prospecting this week has shown a larger proportion of silver than heretofore.

Utah. — Tbe north drift at the adit-level is driving ahead.

Knickerbocker.—The main drift is in 425 ft., the face in porphyry.

McMeans.—The main west drift is pnshed steadily ahead, the face in porphyry, with occasional streaks of clay and small seams of qnartz.

Pictou.—Shaft sinking with satisfactory progress.

Silver Hill. — Sinking shaft progressing well. North and south drifts at the firet level in good pay ore.

Yellow Jacket.—Drifting and cross-cutting at the 1300-ft. level, with no developments.

Mills.—Virginia *Enterprise*, Dec. 20: Of the mills on Six and Seven-mile cañons, the Sierra Nevada (20-stamp) mill is crushing 55 tons of rock per day. The Co. is sngaged in putting in two new boilers. The Mariposa (12-stamp mill) is working on Hale & Norcross rock and crushiag 42 tons daily. Evans' (5-stamp) mill is crnshiag 14 tons of Savage rock every day. Tbe Land (20-stamp) is working on Cbollar rock, aad crnshes 45 tons daily. Tho Windfield is doing its usual amount af work, as also tbe Nevada.

Belcher.—Gold Hill *News*, Dec. 21: Daily yield 320 tons. The incline is down 168 ft. helaw the 1100-ft. level and everything in readinsss for opening tho new or 1200-ft. station. Tho north drift on the 850-ft. level is in 352 ft. Work is aguin resumed in the east drift on the 1000-ft. level. The south winze from tho 1100 to the 1200-ft. level is down 42 ft. Work is also resumed in the main south drift on the 1200-ft. lsvel and will bs steadily continued until connection is completed with the north drift on tho same lovel from the incline.

Con. Virginia.—The new hoisting works are about completed. The shaft is down 80 ft. helow the 500-ft. level, in good sinking gronnd. The main north drift, on the 1167-ft. level, from the Gould & Curry is driven ahead.

Savage.—Daily yield 150 tons, worth $28 per ton. Tho incline is down 95 ft. helow the 1,600-ft. level, in good sinking ground. The south drift on the 1,600-ft. level is driven energetically ahead. Tho main north drift on the 1,600-ft. level is pressed steadily ahead, the face in good workiag ground.

Overman.—Tbe new machinery was started up day before yesterday, everything worked with clock-like precision. The work of draining the shaft was commenced yesterday, since whicb time the water has been lowered in the shaft 100 ft.

Buckeye.—All work in the prospecting drifts north, in first, second and third levels, is stopped for the present, the quantity of ore in sight being sufficient to keep the mills rnnning for the next 6 months.

Chollar-Potosi. — Daily yield 130 tons, worth $31 per ton. The work of retimbering the station at the head of the incline, and repairing the incline, is steadily progressing.

Imperial Empire.—All work in the incline is stopped at present. Prospecting on the different stations progresses.

Calenonia.—Cleaning out and repairing the main sonth drift on the 400-ft. level of the new shaft is making good progress. Tbe north drift on the 400-ft. level of the new works is cleaned out and repaired, and work in tbe face is again resumed. The south drift in the 300-ft. level of the old works is driven ahead.

WHITE PINE.

Sprucemont. — Elko *Independent*, Dec. 21: The Ingot Co.'s smelter ie running constantly, consnming 35 tons of ore per day, and producing from 8 to 10 tons of bullion.

I. W. Whitlach is working 20 men on the Starr King, which produces ore of a very rich character. He has also commenced the erection of a new furnace on the east side of the mountain, and intends to have it running in 50 to 60 days.

Mr. Bennett has abont 20 men employed on the Monarch, and is pushing work vigoronsly. Several very rich deposits have lately been struck.

Arizona.

Mines and Mining.—Prescott *Miner*, Dec. 7: Yavapai Co.—The Placer miners of Lynx and Hassayampa creeks are doing exceedingly well with the little water they have. One day recently, a Lynx creek man washed out, with a rocker, $50.

On Lower Lynx creek, Mr. Smith has been sluicing, with good resnlts.

From Bradshaw, the news is that Jackeon & Shonp's arastra ie rnnning on War Eagle ore, which ie said to be very rich.

The Marcus, near Weaver, is yielding great quantities of rich ore; the arastra is running; rock paying well.

Smith & Taylor are sinking for water, at their mill, below Wickenburg.

Various persons and companies are sinking on ledges, in almost every dist.

Mohave Co.—Judge W. J. Berry has sent ns a fine specimen of his Guusight lode, which is over half silver.

A letter from Mineral Park, informs ns that the town was wild over a rich strike in the Fairfield, said strike being a large body of ore, carrying any quantity of wire silver, and silver in other forms. This is at a depth of 5 ft. below the water line.

Colorado.

Tenth Legion Lode.—Central *Herald*, Dec. 11: Work is abont to be resumed on this lode.

Sparks Mine.—During the past few days some very rich material hae been raised to the snrface, and the pay vein of this ore exposed to view in the bottom of the shaft is one foot in thickness. This pay vein has opened out from a width of 4 inches to 12 within the last 4 ft. of sinking, and is still widening.

The new Judd & Crosby Works, at Georgetown, are again in operation, and shipped a brick worth $1,727 on Saturday.

Among the mines now extensively worked and yielding well are the Jones, Harper's portion of the California, the Kansas, the Alps, the Sparks and American Flag, abont Nevada, and the Gunnell, Leavitt, Fiske aud Briggs abont Central.

Sxco.—Colorado *Miner*, Dec. 12: This great silver mine is being actively operated and developed, and is yielding large quantities of exceedingly rich ore. 35 men are employed, and work will be continued during the winter without interruption.

Idaho.

South Mt.—Cor. Silver City *Avalanche*, Dec. 14: Work is ahont over for the winter.

The shaft house on ths Rose is completed and actnal work commenced. Sinking shows 3 feet of a ledge with first-class ore, averaging $100 to the ton.

The shaft house over the Rohie is also finished and the shaft down 18 ft. This shows ledge matter to the width of 4 ft.

W. W. Hastiags & Ca. shipped ta S. F., from tbe Crown Point, 9 tons of ore which netted them $80 per ton.

Montana.

Items.—Virginia *Montanian*, Dec. 12: F. R. Merk's steam hoisting works on the Hendrick's lode, Hot Springs Dist. are completed and in motion.

The varions lodes at Vespond are looking hetter than ever. Mr. Lewis is abont to erect a first class silver mill. On the Kremlin, on No. 1 and discovery, Billy Norwood has a shaft of 75 ft. and a 3 ft. crevice of ore that will mill from $25 to $40 per ton. Wingate's 40 ft. shaft on No. 4 displays a 2 ft. crevice of the richest rock yet found in tbe vein. Pease & Brundage, on No. 3, have a shaft of 30 ft. and a crevice of 3 ft. paying ore.

Wisconsin.—The placer mines discovered on Wisconsin and Indian creeks last fall are developing into an extensive gold field, and is thought they will next sammer give employment and hig wages to 200 or 300 miners.

Another Mill.—Mr. Owen Gaffney, who ie largely interested in Vipond, and who is in New York, will bring out a fine silver mill for the reduction of his developed leads.

Bivens.—Miners of Bivene Gulch inform us that the past has been a very successful season.

Blue Wing.—There is no let-up in tbe development and prosperity of the leads in tbe Blue wing dist.

New Discovery.—Late last evening a report wae current on the streets tbat a new and very important discovery bad just heen developed at Silver Shower Dist.

Eberhart.—The crevice of this lode has widened out to nearly 2 ft. dnring the past week's development, and the qnality of rock is better than ever.

Utah.

Strike.—Salt Lake *Tribune*, Dec. 9: An immense strike of rich ore is reported to-day, in one of the mines of the Winsor Co. in Little Cottonwood.

North Star.—Cor. same: The Temperance has a tunnel in 280 ft. which taps the ledge 68 ft. below the surface croppings. Near the back end of this tunnel tbere is another shaft snnk which rnns in mineral the entire distance. On dump there is perhaps 100 tons of ore tbat is said to be worth from $80 to $100 per ton on general average.

Flora shaft is down 150 ft., ledge runs northwest and sontheast, and pitches 45 degs. to the northeast. In tbe bottom of this inclino there is a vein of mineral varying from 3 to 4 ft. in thickness, and the casing walls on either side appear to be well formed. The ore is carbonate and said to be wortb $60 per ton.

Clipper shaft is down over 100 ft., ledge runs east and west and pitches about 12 dege. to the north. In the bottom of the incline there appears to be a small vein 8 or 10 inches wide, carrying some mineral, whicb the owners are sinking upon. Ore taken from tbis mine has assayed as high as $11,000 and the lowest run as high as $50 to the ton.

Robert E. Lee prospect shaft is down 10 ft. and sbows a fair body of mineral, apparently of high grade galena and carbonate. Thie ore will assay from $300 to $400 per ton, and it is thonght to be wortb ahont $200 to tbe ton on general average.

Palmetto has a shaft snnk 25 ft. The ledge seems to be broken, nntil reaching within 5 ft. of the bottom where the walls appear to form in proper shape. On dump there is from 15 to 20 tons of ore, the grade of which appears to be high enongh for profitable working.

Hidden Treasure shaft is down 28 ft., and shows from 3 to 4 ft. of mineral near the surface. The ore is worth abont $60 to the ton on general average. The character is mostly galena, with some carbonate.

Amongst other mines worthy of note may be mentioned tbe Shenandoah, Midas, Rebel No. 1, Deadbeat, Wild Bill, Lookout, and the Lake Superior Copper mine.

The Hoosac Tunnel.—On the 12th of December at the Hoosac tnnnel an opening was effected into the central shaft and the workmen passed from one section to another. The work of excavating this tunnel through the monntain has been in progress for over fifteen years, and is to furnish a connection for a railroad between Troy (N. Y.) and Boston. The State of Massachnsetts has loaned its credit for the pnrpose to the amonnt of many million of dollars.

Large Rolling Mill.—There is now nearly completed at South Bethlehem, Pa., the largest rolling mill known in the civilized world; the main mill being 936 feet long and 111 feet wide, the wings forming a cross 384 feet long, the whole being built in the most solid manner, of stone, iron and slate. The boilers are outside the main works, the stacks being built of the most solid iron, riveted. They are 14 feet in diameter at the base, and about 120 feet high.

As Dickene worked in a blacking factory when he was a boy, it was natnral that he shonld shine afterward.

Lecture on Fish Culture by Livingstone Stone, A. M.

Pisciculture—The U. S. Deputy Fish Commissioner before the Oakland Farmers' Club, Dec. 13.

On being introduced, Mr. Stone began hy referring to some of the prominent landmerks in the history of fish culture. Ths Chinese, as we know, havs carrisd on trade in fish ova for centuriss, and ws reed of a Chinsse law enacted 2,200 years hsfore ths Christian era for the protection of that industry. Ths next account we have of fish-culture is that of the Egyptian King Moeris, who built two pyramids on Leke Moeris, and stocked the lake with fish. The fish increassd so fast, we ars told, thet the returns were ten thousend dollars per day, and this ths king allowed the quesn as pin-money, which tradition, said Mr. Stone, we may put down es a pretty big fish story. Thsn we coms down to ths commencsmsut of the Christian ere, whsn we learn thst the Romens engaged in the art, end raised so meuy that one single fish-pond netted its owners over one hundrsd thousend dollers in a seeson. In the fourteenth century a monk, named Pinchon, took the spawn of fish and hacthsd thsm in a trough. Four hundred years later, in 1763, Mejor Jacobi, an officsr in the Prussian army, discovered en artificial process to vivify eggs. In 1842, a Frsnchmen, named Joseph Renny rediscovered ths art, but kept it a secret for some time. It, however, at last cams to the notics of Professor Coste, who visited ths plece in the mountains where Rsnny lived and examined into the process. He hrought it hefore the French Governmsnt and an ssteblishmsnt was built for the artificiel propagation of fish. The first gentleman to experiment in this country in the reising of Eastern trout was the Hon. Stephsn Ainsworth, iu 1859. He succeedsd remarkahly well, aud wes followed by the famous Ssth Green, at Caledonia, on a large scele. In 1867, Green begen hatching shad in the Connecticnt river, and in 1872, the first appropriation was mede for that culture by the United Statss Governmeat.

Mr. Stons here explained the practical rssnlts which follow the cultivation of fish. When he first commenced, a skeptical friend, a farmsr, asked him if he thought he could improve on the method of the Creator. His reply wes, Yankse-like, by asking a question: Suppose you and your predecessors act on the sama principle. We ehould all starve. Behind the naturel product, thers lies a large stock in ressrvs which can bs brought out by cultivation. If you do not sow and cultivate your crops, you will not raise enough to eet. It is the sams with fish. It is estimaed that only a few of ths millions of eggs of ths codfish come to maturity. Take a pair of trout, weighing one pound each. The female lays her eggs in a natural brook. There ehould be a thousand. Four hundred will feil of being vivified, and die. Of the 600 left, 500 will be killed dnring the winter by the sediment and fungus in the water. Of the remaiuing 100, 50 will be devoured by its numerous netural enemiee, and the chances are thet 49 out of the 50 will not live to meturity. This ie supposed to be the ratio of their life. Now, if we take those thousand eggs and are careful of them, we ehall vivify 950.

The lecturer here divided the remainder of his remarks nnder two heads—private fish culture and pnblio fish culture. Private fish culture in the United Statee has been confined almoet entirely to Eastern brook trout, the most beautiful of fish, combining all the favorite qualfties of other fish, with none of their failings. While it may be said to be a hardy fieh, it dies easily in warm water. They can be almost starved and carried a great distance, and they are easily domeeticated. They are aleo remunerative, for as a rule, it costs but fifteen or twenty cents to raise a pound, and they command a uniform price of one dollar per pound at the ponds in the East. When the law ie first off, they bring $1.25. They can always be sent to market and get seventy-five cents.

Perhsps some of you would like to know something about the interior of a fish-breeding eetabliehment. Suppose we had 1,000 trout in eummer. The epawning season in New England comes on in October. The usual method of procuring the epawn is to strip the fish. In this way the moet egge are retained. A second procees is by the Ainsworth spawning screens. The screen is covered with gravel and upon this gravel the fish epawn. At night the operator goee to the lower screen, npon which the egge have fallen, and takes them out. A third method is by the Collins' roller spawning box, which ie a modification of the Ainsworth screen principle. Having got our egge, we take them to the hatching troughs, and all we have got to do to them hesides turning the water on them is to see that they are let alone. This ie not easy, however, for in all springs there ie a fine eediment, invieible particlee of dust, which ie fatal to the eggs. There must, then, be some system of filtering above the troughe. Screens of flannel are bset. Another danger is the fungus, a low order of vegetable growth, which, when it once gets on the egge destroys them. At firet a great deal of trouble was expsrienced from this evil. Wooden troughs were ussd, and fungue grew out from the aides of the box. The remedy for this is to ohar the box with fire to the depth of one-eighth of an inch. A third danger is from fungus which proceeds from dead eggs, but this is avoided by picking out the dead eggs once svery twsnty-four hours. Then thsre are the naturel snemies of the eggs, and thsy ars legion, consisting of almost evsry kind of water inssct, and every kind of animel that is not afreid to wet its bill or feet. To protect the sggs against thsse, cover the troughs.

The period of incuhation of trout and salmon eggs varies with the tempereture of ths weter. As a safs rule we may asssrt thet water of 50° temperature will hetch the eggs in forty days, end for evsry degree coldsr the eggs will bs five days longsr in hatching. For evsr dsgres above 50° the time is shortened five days, hut for hatching trout the temperature should not be above 55°, and 50° is hetter than anythiug higher. When one-third of the psriod of incubation is passed, the eys-spots of the fish show, and this is the time to pack them for transportation—not sooner. They may he cerrisd long journeys in wet moss. Ths spsaker said he had sent a large number to Englend, and hs had ths honor to say thet Her Majesty has some which hs ssnt to her. He hed also ssnt ssveral thousand salmon eggs this fell from the McCloud river in this State to he put in the Susqnehanna. During ths other two-thirds of the hatching period, ths eggs continue to grow in firmness. When first hatched, the yolk has hardly been touched, and the young fish appeer with it attached to thsm. They have no fully dsveloped mouths, end are sustained by absorbing the yolk. About six wssks after hatching, ths yolk sec becomss absorbsd and the young fish are ready to eat. During this period two curious instances taks possession of them. The first shows itself in about fifteen days after thsy are hatched, in an nncontrollable desire to hide nnder something. They are helplsss and seem to fear some denger. If there are any small chinks in the trough, thsy will crowd into them and die of suffocation. The other trouhle referrsd to seizes thsm a short tims leter. It is a desire to pursus a currsnt. If there is a leak anywhere in the hox, they will meks for ths current end all go through.

The best food is common sour milk curd and liver grated fins and mixed together. There is no trouble in getting them to eat. After three wesks, a new trouble shows itself. Thsy lose their 'eppetits, bscome emacieted and turn around and hsad down stream, a bad sign in trout. This trouhle is cured by placing a thin leyer of fresh earth in the bottom of the trough, In fifteen minutes ths effsct is megical. They improve and soon become better than evsr. The loam seems to furnish some needed food, and also servss to keep ths water pnre by covsring the stale fsed thet has sunk to the bottom.

At the end of the first year, a hrook trout is from five to seven inchss long; ths nsxt year it doublss its sizs, and the next. At the third year it wsighs a pound. Looking at it in a pecuniary aspect, it is rsmnnerative. Whsn you have fed five pounde of meat, yon have about one ponnd of trout, under favorable circumstances.

Public fish culture in the United States deale principally with black bess, ehad and selmon. The modus operandi of cultivating black bass ie ae follows: The Stete makee an appropriation of money, the Commissionere go to work and get the fish and put them in pouds or lakes and let them grow. That ie all there is about cultivating them. Shad are hatched, put in a river, and left aloue. The cultivation of salmon is more complicated. Ten yeare ago there was not one black bees in New England. The Commissioners put them in ponde that were worthless for food-producing purposes, and they are now taking them out by tons. It is a trite remark that an acre of water will produce as much as an acre of lsnd. Now, about shad. In 1867, Seth Green made a proposition to the Maesachueetts Fish Commissioners to go to the Connecticut river aud hatch shad. This was the inauguration of shad raising. Massachnsetts paid Mr. Green two hundred and fifty dollars, and he loet five thousand dollare wort h of fish at his ponds while he was attending to the work. He did not know at first that shad reqnired warm water, and the first experiment in such water as would suit trout was not successful. In the river where the temperature of the water was 80°, he put in another lot. After a few hours the eye spots appeared and he knew euccesa was his. The epeaker here read from a printed report of the Massachusetts Commissioners, showing the most wonderful increase of ehad resultiug from this experiment. The quantities taken out were eo enormous that alarm was felt lest the river might be drained of them, and there was some talk of a protective law. Seth Greeu told them to let the fishermen go ahead; that he could put more shad in the river than they could take out, if they fished all the time. Shad fell from 30 cents to 3 cents per pound, and what had been the rich man's luxury became the every day diet of the poor man.

As to what has been done in thie State, Mr. Stone said that abont a year ago, the California Fish Commissioners employed Seth Green to briug some young shad to the Sacramento. They were put in at Tehama, but it is not absolutely certain that any of them have been seen eince. About a month ago, some fish were seen in the river where the Pitt river emptiee in, and several persone who came from Connscticut pronounced them shad. The Indians would have nothing to do with them, a fact which provee the fish were strange fish to them.

In answer to a question as to the relative merits of the Eastern trout *(salmo fontinalis)*, and the brook trout of California, Mr. Stone spoke decidedly in favor of the Atlantic species. Fortunatsly it hes hesn successfully introduced by the Acclimation Society.

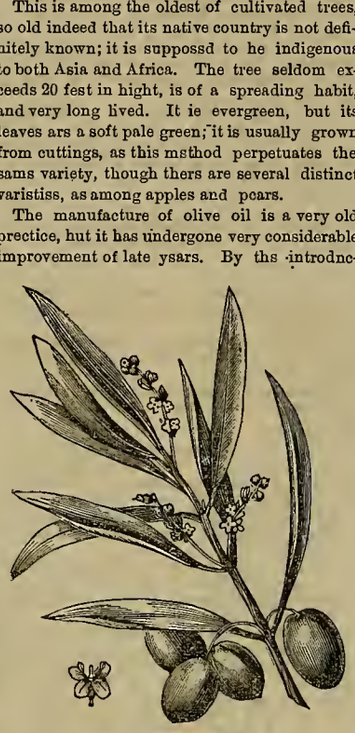
Mr. Stone closed his rsmarks by urging the enactment of a lsw to protect onr selmon, which he seid would be scarce et no distant day if not protected.

San Jose Woolen Mills.—The *Mercury*, in noticing the woolen mills of San José, gives the following statistics: Eighty-five hands are now employed at the factory; twenty-four men, three young ladies, five boys, and fifty-three Chiuamen. The boys have light but steady work, and the girls pick the knots and specks from the white blankets, with a burling iron—very easy but confining work. There are three sets of cards in operation, and eight spinning jacks—three of whioh areself operating—and twenty-two looms. Thirty-five hundred pounds of yarn are used per week, two hundred and seventy-five pairs of blankets made, three thousand yards flannel and from fifteen to twenty-five hundred yards of various kinds of men's clothing woven, thus making about twenty thousand dollars' worth of goods finished up per month for wholesale trade.

The Olive Tree.

This is among the oldest of cultivated trees, so old indeed that its native country is not definitely known; it is suppossd to he indigenous to both Asia and Africa. The tree seldom exceeds 20 fest in hight, is of a spreading habit, and very long lived. It ie evergreen, but its leaves ars a soft pale green; it is usually grown from cuttings, as this msthod perpetuates the sams variety, though thers are several distinct varistiss, as among apples and pears.

The manufacture of olive oil is a very old prectice, hut it has undergone very considerable improvement of late ysars. By ths introdnc-



THE OLIVE BRANCH.

tion of hydraulic presses, the expreesing of the oil is now mnch more rapid and effectnal, and the injurious effects of incipient fermentation, or those attending the heating of the pulp, are thus avoided.

The olive is found at nearly all the old miesions of Middle and Southern California, and its propagation might be extended largely, and with profit. We are indebted to Mr. John McComb for procuring the twig of olive from which we have made onr engraving. It came from San José, where the tree seems at home ae regards both soil and climate. In our illustration, both leaf and fruit are reduced to one fourth the natural size.

The Wheeler Expedition.—Most of the members of the Wheeler expedition have returned to this city or to Salt Lake. At the latter-named place Colonel W. M. Ord is waiting for the arrival of those parties who have not yet come in. Lientenant Wheeler has gone to Washington. His report is looked forward to with much interest. The expedition lost but one man during its travels. He was suffocated in a quicksand in which his horse foundered, in the George river. It is believed that Lieutenant Wheeler expects another appropriation for a new survey and consequently the mules used by the explorers will not be sold, but turned out to pasture, and the wagons, etc., stored.

Australian Nugget.—A five hnndred and thirty-eight ounce gold nngget wae lately found in Australia. It was in the wall of an old trench that wae cut about nine years ago, when a large number of men were at work in the locelity. The successive rain-falls had, with the continuous waehing and crumbling away of the soil, bronght this handsome little fortune into deylight.

Co-operative Mining.

There should be more co-operative mining in the Grass Velley district. Thsrs is one incorporated company here, which is doing that kind of mining, and there shonld be ten instead of one. The one compány is callsd "The Gress Valley New Mining Company," and its stockholders are mostly minsrs who work by the day, for wages. Thsse stockholders set apert a csrtain percentage of their wages every month to pay assessments on the stock of the compeny and the money thns accumnlated is spsnt in prospecting. Ths money is carefully manegsd by Trustses who understand mining and who are carefnl husiness meu. Some of the stock of the company is held by merchants and traders. As the nnmher of sheres is large the monthly burden to each individuel is light. Ths result may be great. Already the company has a good show of making one good mins, and active work to find good ledgss is constantly being prosecuted. We say thet thsrs should be ten such compenies. There ie population enough here to keep ten such companies running all the time, and surely ths district hes gold beering ledges enough to encourege the formation of such companiss. Lst us hear of more incorporations similer to the Grass Vallsy New Mining Company. Our people must help thsmselves in this matter of mining. It is nonsenss to locate a ledgs and then to wait until San Francisco, or othsr outside capitel, shall coms along to take hold of the ledge and to make it into a mine. Not so heve the many of our minss heen made. The outside cepital comes for the purchasing after the mine is made. The developing capital must bs furnished by home people, in the shaps of work or money. Look at the Idaho mine, a home development and even yet a home owned mine. We verily bslieve that thsre are other ledges hsreabouts, coucealed under ground, that are as good as the Idaho. Our peopls should join together to ssarch for snch ledges. By sserching for the few best the many good ones will be discovered and devslopsd. Ths subject is worth the serious consideration of ell classss of onr population. Propsrty ownsrs, traders, professional men as wsll es the working minera areintsrestsd in the subjsct. Local prosperity ought to bs achisved, in a great measure, by local co-operative mining.

Transportation of Crops.

Ths Prssident in his late message callsd the attention of Congress to ths fect that the productions of the country were incrsasing in a much greater proportion than the means for their transportation. Whether this hs true or not, it is en undoubted fact that the cost of transporting crops from the Western Stetss is too great to make the labor of the producer remunerative. Whether these high tariffe are due to the scarcity of transportation or the extortion of monopolies, makes but little difference in the remedy to be applied, which is suggested in the message.

The President recommends the gathering together of all poseible informetion, by meane of eurveys and otherwise, in regard to feaeible routes for canals from the west to the tide weter of the Atlantic, in order that Congrees may, when required be able to apply the right remedy to a matter which ie eerioualy threatening the material prosperity of the country.

Three great routee have been suggested. One to connect the Missiseipi Valley with the Atlantic at Charleston and Savannah, by way of the Ohio and Tennessee rivers, and by canals and elackwater navigation to Savannah and Ocmulgee. This route has becn eurveyed by an eminent marine officer, and declared perfectly feasible. The second ronte is by the exteneion of the Kanawah and Jamee River Canal to the Ohio; and the third, by the extension of the Chesepeake and Ohio Canal.

These two latter routee will be proposed for the consideration of Congress at its present seesion. In carrying grain, and, in fact, any kind of freight in quantity, railroads cannot begin to compete with canale, the difference in price much more than offsetting the difference in time. With these canale in operation the producers of the West would have ample and cheap transportation. If the present state of affairs is due to the scarcity of transportation, this would supply it; if it is due to the extortions of monopolies, the construction of these canals would eecure a competition the full benefit of which wonld accrue to the producer.—*San Jose Mercury.*

Sand Spouts.—We copy the following from the Virginia City *Chronicle* of the 13th instant: Half a dozen "sand-sponts"—columns of sand drawn up by whirlwinds—were to be seen on the twenty-two mile desert yesterday afternoon from 2 till nearly 3 o'clock. They waltzed abont, keeping always abont the same distance apart, and moving in the same direction, each apparently a solid column ten feet in diameter and 1,000 feet high. The top of all these columns seemed to be cut off by a brisk breeze from the west, which carries the dust in clouds over the range of mountains lying to the east of the sink of the Carson; sometimes two of these "sand spouts" or whirlwinds—call them what you may—come together, when they explode with a loud report, and both instantly disappear.

Useful Information.

Ought Shingle Roofs to be Painted?

If it is an economical practice to paint any *other* part of an architectural structure, most assuredly it is a commendable practice to paint shingles. We nsvsr could understand why csrtain builders have persistsd in advocating *not* to paint shingles, except we judge them to be influenced by mercenary motivss. Evsry intelligent builder is aware of the fact, that shingles and siding, when *not* painted, will wear ont very much sooner than if they had lieen protected hy a generous covering of paint. Hence, reasoning from a selfish policy, it is hetter *not* to paint shingles, *because* the paint will promote their durahility, aud whatever promotss their durability tends to diminish the labors of the craft, and thns curtail thereveuue of civil architects.

The honss in which the writer was born was covered with shaved pine shingles in ths year 1805, at which time the roof received a generons coat of oil paint mads of linseed oil and Vsnitian red. After twenty years had elapssd, another coat of paint nearly hlack was applied. Since that period, no paint has been applied, and it is now a good roof, for an old one. It does not leak, and the only rspairs on it have consisted of a shinglo added here and thers, where a portion of a poor shingle was worn ont. If ths roof had not been painted, the buts of most of the conses wonld havs leeu worn sutirely away; and, if such long psriods had not heen allowed to intervene between the times of painting, ths roof wonld have been a good one, even after the lapse of a hundred years.

Some ons once suggested, that, if the roof is painted, the paint will canse the watsr to back up beueath the next course of shingles above, which will thoroughly saturate the two courses, and thus the decay of the roof will be hastened. That is unmitigated uonsense. There is not a word of truth in the assumption. On the contrary, when the surface is painted, the water will glide away so quickly that it will not be drawn back between the coursss of shinglss half so readily as it will be wheu no paiut has besn applied.

How to Paint.

Ths trne way to paint a roof is to apply paint of some kind to both sides of ths shiugles. It is quits as important that the nnderside of every shingle be covered with paint as the surface, to prevsnt the water from being drawn up between the courses by capillary attraction. If good shingiss are painted on both sides, and good paint be applied to the roof ones in ten years, it will continue leak-tight for more than a hundred years.

When it is not dssirable to save the water for drinking, coal-tar is an excellent and chesp paint for preserving shingles, and it will pay well to smear a roof with this material once in four or fivs years. When roofs are uot painted, moss is liable to collect at ths bnts of every course of shiugles, which promotes their decay more rapidly than alternate rain and sunshine.

When oil paint is used for painting shingles, it is always better to employ some light color rather than black, as the apartmsnts of the attic story, bsneath a blaek roof, are liable to be uncomfortably hot in the summer; and more than this, as black paint absorbs more heat than any other color, neither the paint nor the shinglss will endure as long as if the roof had been covered with soms light-colored paint. A metallic roof covered with light-colored paint will last mnch longer than if it had been paintsd with black paint. The most economical paint for a roof is a generous coat of coal-tar once in a few years; but coal-tar will color the water for five years after a coat is applied to ths roof.—*Industrial Monthly.*

Is it Instinct?—We nsnally explain all the actions of the lowsr animals as being guided by instinct. On this snbject, Mr. A. R. Watson, an sminent scientist, writss: "It is said that birds do not learn to make their nests as man does to build, for all birds will make exactly the same nest as the rest of their species, even if they have nevsr seen ons, and it is instinct that alone can enable them to do this. No doubt this would bs instinct, if it wers true, and I simply ask for proof of the fact. This point, although so important to the question at issne, is always assumsd without proof, and even against proof, for what facts there are, are opposed to it. Birds bronght up from the egg in cages do not make the characteristic nest of their species, even though the proper materials are supplied them, and often make no nest at all, bnt rudsly heap together a quantity of materials; and the experiment has nsver hesn fairly tried of turning out a pair of birds, so brought up, into an inclosure covered with netting, and watching the result of their untaught attempts at nest-making. With regard to ths song of birds, however, which is thonght to be equally instinctive, the experiment has been tried, and it is found that young birds never have the song peculiar to their species, if they have not heard it, whereas thsy acquire very easily the song of almost any other bird with which thsy are associatsd."

Gas-Proofing India-Rubber.—Thongh thsrs is nothing particnlarly novel (to chemists, at least) in the following, from an English exchange, some readers may uevertheless like to have the item:—

"Ordinary vulcanized india-rubber tubing becomes saturated with gas, which sgain evaporatea at its outer surface, causing a most disagreeable smell. An invention for ths prevention of this, by coating the india-rubber with varnish, has been patented. The chief novelty in it is that the varnish is easily made, and it renders the substance of the tubs impervious to gases. This varnish is composed of linseed oil, fins litharge, or whits lead, in ths proportion of ons quart of oil to one ponnd of litbargs. These snbstances should he well boiled together until brought to a proper thickness or body, and while hot the composition is applied by running it through the tubo to he coated or lined. The varnish for the outside is made by mixing one quart of linsced oil with half a ponud of litharge, and by adding to the sams about a gill of gold size. These ingredients shonld be well boiled together, and while hot shonld be applisd with a brnsh or sponge.

Artificial Gems.—We saw, says the *Boston Journal of Chemistry*, a few days ago, in the hands of Alvan Clark, Jr., some wondsrfnl artificial rubies, emeralds, and sapphires, and some very fins artificial diamonds. They wers all made by a Frelch workman, and the smeralds ars so perfect that they have evsn deceived experts. Oue of them was shown to a celebrated jeweller in Boston, soms time since, and he at oncs prononnced it genuins, and gave his rsasons for so doing. He said it was worth at least $150, while in reality it was not worth mors than $5. The rubies have the exact composition of ths native gems, and differ from them only in hardness. The process by which these gems are manufactured is known only to the inventor.

Varnish to Imitate Ground Glass.—The *British Journal of Photography* gives the following receipt for this purpose: Dissolve ninsty grains of sandarac and twsnty grains of mastic in two onnces of washed methylated ether, and add, in small qnantities, a snfficiency of benzine to maks it dry with a suitable grain—too little making the varnish too transparent, and too much making it crapy. The quantity of henzins reqnired depends upon ita quality—from half an an ounce to an ounce aud a half, or even more; bnt the best resnlts are got with a medium qnantity. It is important to nss washed ether frse from spirit.

What to Read.—Are you deficient in tasts? Read the best English poets, such as Thompson, Gray, Goldsmith, Pope, Cowper, Coleridge, Scott, and Wordsworth.

Ars you deficient in imagination? Read Milton, Akenside, Burke, and Shakespeare.

Are you deficient in powers of reasoning? Read Chillingworth, Bacon and Locke.

Are you deficient in jndgment and good sense in the common affairs of life? Read Franklin.

Ae you deficient in sensibility? Read Goethe and Mackenzie.

Are yon deficient in political knowledge? Rsad Montesquisu, the Federalist, Webster and Calhoun.

Are you deficient in patriotism? Read Demosthenes and the Life of Washington.

Oil on the Woonwork.—Carefully conductsd experiments have demonstrated the fact that seasoned wood, well saturated with oil when put together, will not shrink in the dryest weather. Wheels havs bssn known to rnn many years, even to wearing out the tirss. Very many dollars to individual farmers might bs saved annually in blacksmith's bills, especially in such seasons as the past, if this practice was adopted. Boiled linseed oil is the best for general use, although it is now known that crude petrolenm on even old whesls is of great benefit.

How to Make Colored Chalk for Tailors, Use. — Knead together ordinary pipe-clay, moistened, and ultramarine for blue, finely ground ochre for yellow, burnt ochre for red, etc., until they are uniformly mixed; roll ont into thin sheets, cut, and press into wooden or metallic monlds well oiled to prevent sticking, and allow to dry slowly at ordinary temperature, or at a very gentle heat.

Value of Chemical Experiments.—Not long ago, the whole stock of paraffine, in the world did not sxcesd 4 ounces, which was carefnlly preserved in ths laboratory of Prof. Liebig as a chemical curiosity. There is now produced in Scotland alone not less than 5,800 tons annually. It thus often occura that the nnpaid labors of the chemist are made to benefit the world.

Spontaneous Combustion of Coal.—A piece of bituminous coal lying on some dry pine boards against the side of a building in Millport, N. Y., spontaneously burst into flames on one of the recent hot days. It had been exposed to the rays of the snn nearly all day, the thermometer raging from 100 to 105 degrses in the shade.

A New Green.—It is announced that a green of nearly the same brilliant shade as the poisonous "Paris green" may be obtained by taking twenty parts of oxide of zinc and one of sulphats of cobalt, mixsd into a paste with water, and exposed to a red heat.

Good Health.

Cold Weather and Warm Blood.

We should never allow ourselves to forget that nature intended us for warm blooded animals. In this climate of snrprising changes, we are very apt to forget it, sspecially in the fall and spring. At snch seasou, when we freeze and simmer on alternate days, there is engendered in us a certain recklessness, which takes no heed of cold or heat, dampness or dryness, and receives all temperatures with the same front, generally a defenseless one. It is certainly very troublesome to change front as often as ths weather, and there is prejudice in American minds against such change, which has a great deal to do with the rapidly increasing population of our graveyards.

People like to have some stability of purpose, and if they can have it in nothing else they will have it in dress. They will not make a change until they make a permanent one for the season. No matter how hot it is in the spring, they will wear spring clothes until summer, and no matter how cool it may he in August, summer clothes mnst bs worn until fall shall actually set in. Thus oft-times suddenly and with sad resnlts we find ourselves approaching the condition of the fishes and lizards—for the chill, that alert forernnner of disease, is ever ready, in our climate, to take advantage of circnmstances.

We suppose that there are no people in the world so indifferent to the demands of the weather—sspecially cold weather—as Americans, and one reason of this is that very many of us are ashamed to keep warm. To wrap up and button up and to button down windows whenever thers is a chilling change in the air, argues, to most minds, a namby pamby eagerness to be well that is repugnant to the hardy American soul. So, rather than bs laughed at, we shiver. We prefer tragedy to comedy, the grave to the ridiculons.—*Scribner's for November.*

Treatment of Poisonous Bites in Persia.—Mr. Flandin, in his narrative of a rssidence in Persia, relates a cnrious incident, which ocenrsd when he was at Ispahan: The Persian servant of a European had bsen stung by a scorpion, and his master wished to apply ammonia, the usual remedy in such cases, but the man refused, and ran off to the bazaar. When he retnrned he said he was cured, and appsared to bs so. The Eurepean, rathsr surprised at this almost instantaneous cure, qnestioned him, and found that he had been to a dervish, who, he said, after examining the wound and uttering a few words, had several timss touched it with a little iron blade. Still mors astonished at the remedy than the cure, the Enropean desired to see ths instrument by which the latter was said to have heen effected. At the cost of a small picksch he was allowed to have it for a few minntes in his possession. After a carefnl examination, finding nothing extraordinary in the instrument, he made up his mind that the cnre was a mers trick; that the dervish was an impostor; that the scorpion sting had not penetrated, and that his servant had been more frightened than hurt. He threw the blade contemptuonsly upon the table, when to his great surprised, hs beheld it attach itself strougly to a knife. The quack's instrument was simply a msgnst. But what power had the loadstone's attraction over venom? This discovery was very odd. Incredulity was at a nonplus, and yct ths man stung by a scorpion was cnred, and he who had cured him was in great renown at Ispahan for the treatmsnt of that sort of wound.

A New Chill Cure.—The local of ths Terrs-Hauts *Journal* has discovered a new cure for ague. Hers it is: To those afflicted with ague we say emphatically, crawl down stairs head-foremost. Laugh at ths idea, if you please, but do your crawling first; you can then afford to laugh. Just as the chill is coming on, start at the top of a long flight of stairs and crawl down on your hands and feet, head, foremost. You nsver did harder work in your life, and when yon arrrive at the bottom, instead of ahaking, yon will find yourself puffing, red in the face, and perspiring freely, from the strongest exertions made in the effort to snpport yourself. It will effect a cure, beyond a doubt; but whether from this cause or from that, we will never tell you, nor need you care to know. Try it. It won't cost yon near as mnch as quinins or patent medicines, and if it fails, it will only do what they do every day. If it cures, as it certainly will, lay the facts before our local scientists, and let them discover the cause. At all events, ye shaking sufferers, lay this maxim to your hearts: "Crawling down stairs head-foremost will certainly prevent a chill."

Salt and the Ague.—The followiug appears as a leading editorial in the Cleveland *Herald:* "We wish to give a simple remedy for fever and ague, and wish to emphasize it by saying that it has to our knowledge proved very efficacious. It is simply common salt. A teaspoonful taksn in water, aud a teaspoonful deposited inside each stocking, next the foot, just as the chill is coming on. That's all there is of it; but knowing that it has heen very efficacions in 'breaking' a chill and perfecting a cure, we put it in our editorial columns, whers no humbug remedy shall ever find a place if we know it.

Ague or Intermittent Fever.—This disease consists of cold, hot, and sweating stages in succession, attending each paroxysm, and followed by intermission. The cold stags commences with languor, a sense of debility, and sluggishness in motion, freqnent yawning and stretching, and an aversion to food. The face and extremities become pale; the fcaturss shrink. At length the patient feels very cold, and universal rigors come on, with pains in the head, back, loins and joints—nanssa and vomiting of bilious mattsr; ths respiration is small, frequcut and anxious; sensibility is greatly impaired; ths pulse is small, freqnent, and often irregular, aud the shiverings terminate in a nniversal and convulsive shaking.

These symptons, abating after a short time, the second stage commences with an increase of heat over the whole body, reducss of the face dryness of the skin, thirst, paiu in the head, throbbing in the temples, anxiety aud restlessness; the respiration is fuller and mors free, but still frequent; ths tongue is furred, and the pulse has become regular, hard and full. If ths attack has been very severe, then perhaps delirium will arise. When these symptoms have continued for some time, a moisture breaks out on ths forehead, and by degrees becomss a sweat, aud this at length extends over the whole body. As this sweat continues to flow, the heat of the body abates, the thirst ceases, and most of the functions are restored to their ordinary state. This constitntes ths third stage. Wheu the paroxysms are of short duration, and leave the intervals quite free, we may expect a speedy recovery; but when thsy are violent, and attended with much anxiety and delirinm, the event may be donbtful. Marsh miasma, or the fluvia arising from staguant water, or marshy grounds, when acted npon by hsat, are the most frequent causes of this fever.

The bilious, remittent and intermittent fevers which are so prevalent in the valleys of ths great rivers throughont the United States during the Snmmer and Antumn, and remarkably so during seasons of unusual hsat and dryness, are iuvariably accompanied by extensive derangements of the stomach and liver, and other abdominal viscera. There are always more or less obstructions of ths liver, a weakness and irri table state of the stomach, and great torpor of the bowels, clogged up with vitiated acenmulaitons. In their treatment, a pnrgatives, exerting a powerful influence upon these various organs, is essentially necessary.

A Dangerous Paper.—The green paper used to wrap abont lozenges, sold in shops, railroad cars, and on the street corners, has long been suspected to contain arsenic, and with the view of ascertaining the facts by analysis, we recently purchaseda roll of lozenges coversd with this paper.

A qnalitative examination of the paper afforded all the characteristic reactions for arsenio and copper. The wrapper contained 20 sqnare inches of paper. Of this, 16 were taken for quantitative analysis. The resnlt of the examination showed that this portion contained .1516 grams, or 2.34 grains of metallic arssnic. This is equivalent to 2.94 grains in the whole of the wrapper, a quantity sufficient to destroy life in an adult person. Children in all parts of the country ars allowed to purchase the lozenges covered with this poisonous papsr, and the rolls are often pnt into the hands of infants, as a plaything. As everything goes into the mouth of young children, it is easy to see that no mors dangerous snbstance can pass into a family, than tisse packages of confectionery. It is quite probable that instances of poisoning have occnrred from this canse, which have been of a serious or fatsl character. There should be laws prohibiting the use of poisonons papers for any purpose.—*Boston Jour. Chemistry.*

New Plan of Extracting Bodies from the Ear.—Dr. Loewenberg, of Paris, dscribes a new plan for extracting solid bodies from the ear. A very small brush is made by rolling and fixing a narrow strip of old linen around a thin wooden handle (a match, for instance), and unravelling its free border to the length of a qnarter of an inch. The end of the so obtained fringe is dipped into a warm and very concentrated solution of glue, applied to the visible part of the foreign body—or rather the operator leans it against the body by letting it glide very softly, aud without exercising any pressnrs, over it. Previous to the application, the patient seats himself comfortably in an arm-chair or on a sofa, and inclines his head toward the healthy ear. He remains in this position for for three-quarters of an hour after ths introduction of ths agglutinated brush. This time past, consolidation is generally accomplished, and the foreign body can be extracted by gently pulling at the brush.

Medical Treatment of Mr. Greeley.—Medical skill was exhausted in trying to save the great journalist. Every remedy and appliance was used in his case. One operation was reported which is but seldom witnessed in the treatment of mental maladies. It was performed by Dr. Brown Seqnard, formerly of Paris, the highest medical authority on mental complaints. It consisted of the application of an iron heated to a white heat. Thia was drawn quickly down his spinal column from the neck to the hip-joint, in the hope that it would draw the inflammation away from the brain. Ths patient was in a torpid condition, and apparently did not experience any sensation from the operation.—*N. Y. Sun.*

MINING AND SCIENTIFIC PRESS.

W. B. EWER.....SENIOR EDITOR.

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San Francisco:

Saturday Morning, Dec 28, 1872.

Legal Tender Rates.—S. F., Thurs., Dec. 26—buying, 89¾; Selling, 89¾.

Table of Contents.

GENERAL EDITORIALS.—Japanese Minerals and Mining, 401. A Word for Ourselves—1872; A Mining Retrospect; Importance of the Coast Survey, 408. Experiments in Fuel—Cheap Irrigation; New Books, 409. ILLUSTRATIONS. — Improved Vapor Burner for Warming Rooms; Thompson's Tunnel Car; Growing Plants from Cuttings, 401. The Olive Branch, 406. The Cal. Poppy, 409.

MECHANICAL PROGRESS.—Scientific and Mechanical Possibilities; Cracked Cylinders; Comparative Cost of Iron Steamers; What is a Technical, and What a Scientific Engineer; The New Silicon Iron; More Experiments in Street-car Propulsion, 403.

SCIENTIFIC PROGRESS.—Scientific and Technical Thought; The Nebular Hypothesis; Fluorescence; Low Blast Furnaces; The Bottom of the Atlantic; Effect of Magnetism on Iron; An Interesting Experiment with Electricity; Singular Defect in Australian Gold, 403.

MINING SUMMARY from various counties in California, Nevada, Arizona, Colorado, Idaho, Montana, and Utah, 404. Market Reports, 412.

MINING STOCK MARKET.—Table of Daily Sales and Prices and Comparative Prices for the Week; Notices of Assessments; Meetings and Dividends; Review of Stock Market for the Week, 404.

USEFUL INFORMATION.—Ought Shingle Roofs to be Painted; Is it Instinct; Gas-Proofing India-Rubber; Artificial Gems; Varnish to Imitate Ground Glass; What to Read; Oil on the Woodwork; How to Make Colored Chalk for Tailors' Use, 407.

GOOD HEALTH.—Cold Weather and Warm Blood; Treatment of Poisonous Bites in Persia; A New Chill Cure; Salt and the Ague; Ague or Intermittent Fever; A Dangerous Paper; New Plan of Extracting Bodies from the Ear; Medical Treatment of Mr. Greeley, 407.

DOMESTIC ECONOMY. — Putting up Stoves; American Dict; How to Save Coal in Open Grates, 411.

MISCELLANEOUS.—A Chat About the Grass Valley of To-Day; The Vultures of our Mining Interests; Ophir Mining Co.; Gold Hunting in Columbia; Discovery in Mendocino; Sulphur Mines; Coal Market—Discoveries Near Santa Rosa, 402. Lecture on Fish Culture by Livingstone Stone, A. M.; San Jose Woolen Mills; The Wheeler Expedition; Co-operative Mining; Transportation of Crops; Sand Spouts, 406.

Mining Secretaries, Attention!

On the first of Jan. 1873, the mining assessment law of the new California Code comee into effect, and it will be well for all mining Secretaries to examine the ssme. It was pnblished in the MINING AND SCIENTIFIC PRESS of Dec. 7th, 1872. We will furnish free copies of the new law on applicatien at this office.

THE PERUVIAN MINES TO BE OPENED TO FOREIGNERS.—It is eaid that the Pernvian Government has under consideration, with every prospect of approval, a proposition to throw open to any one, native or foreigner, the right to work tbe mines they may discover within its territory, with a greater extent of lsnd than was allowed by the old Spanisb mining laws. The working of coal ie to be particularly favored by certain additional privilegee, while the State will buy tbe coal of euch mines in preference, at the cnrrent market pricee.

A SERIES OF ARTICLES on the topography and geological formation of the various mining districts in California, by an able writer, will be commenced with our new volume.

CALIFORNIA VIEWS.—We shall give in our next volume an unusual number of fine engravinge illustrating views on this Coast, as well ae mining illustrations.

HOW THE PRESS SUFFERED.—Twenty-nine newspapere, magazines, etc., were entirely destroyed by fire or fared little better in hasty removals during the late fire iu Boeton.

THERE are 6,000,000 real-eetate owners in the United States, the farmers being 4,000,000 of the number.

A Word For Ourselves—1872.

We have had occasion to speak truthfully and favorably of many enterprises, during the twalve months past, and now we propose to do the same for our own.

During 1872 we have publisbed far more reading matter than was ever before issued in our own or any other mining journal in America. It has been prepared with much care and expense, and arranged with a view to suit the convenience of our patrons, that they might receive as mnch reliable information as possible with the best economy of time in digesting the weekly contents of our sheet.

Since 1871 we have reduced the size of our reading type throughout. Over 250 columns of MINING SUMMARY have been given during the year, containing thousands of items on the progress of mining on this coast.

Our STOCK REPORTS have been remodeled in form, and extended in space. As a weekly report of the S. F. Stock Market, it is superior. A list of assessments, sales, meetings, latest dividends, etc.; table of weekly sales and comparisons give the reader, at a glance, much valuable information, which requires days of expert figuring to furnish.

The MINING ILLUSTRATIONS in the PRESS of the past six months, embrace a number of unusual size and cost; we think they have been received with interest, and shall endeavor to produce a still greater variety of ortginal drawings.

The year 1872 has passed out of a serics of dull seasons into more PROSPEROUS TIMES for both mining and mechanical industries. On this coast it seems as if these two branches, especially, must go hand in hand, and we have continued to advocate their growth side by side.

Our aim has been to give a VARIETY OF INFORMATION, so that each in his favorite department would find articles—perhaps not obtainable elsewhere—of such special value as to yield a rich satisfaction, although a portion of the sheet should seem unimportant. We give to miners in every department a representation they would not otherwise have. Scientific knowledge, and information imparted to miners through the reported experience of others, forms the most pecuniarly profitable rcading that is within the reach of any public print to issue.

No one can look at the voluminous index which we give in the present issue, and which covers only half of the year, without a feeling of surprise at the amount of work which it indicatcs. We doubt whether any publication of the kind can be found in the world, which refers to so many subjects of interest and value within the space of six months. The subjects treated upon have all been carefully considered, and condensed, even to the shortest items, and as a general thing the matter is of such a character as will well repay a reperusal. For this reason subscribers should preserve and file their papers for future reference. Even if not bound they can be stitched together quarterly, and be made most valuable books for reference.

The paper has gained many assisting friends and patrons within the year. Our corps are strengthened in wisdom and experience, and the publishers are ready to incur even greater expense for the futura in making the MINING AND SCIENTIFIC PRESS still more replete in all its departments.

We have given our readers the best paper, ink and press work of any wldely circulated newspaper on this coast. But we are not satisfied with that. We want to serve our readers better. In order to do so, we have ordered

A New Press

Of the latest and most improved pattern for fine and fast newspaper work. It is provided with an extra complement of distributing rollers to enable us to use stronger lnk, especially for working engravings up to the best advantage. It is now on its way from Chicago, and will doubtless soon be in running order, adjoining our composing and editorial rooms, at 414 Olay street.

This number closes our twenty-fifth volnme. We could probably spare many of our readers, but we need them all. We wish to spare none. No other journal on this coast—nay, in the world—can show so large a list of subscribers of so hlgh an averege of intelligence and industrial worth.

We invite everyone whose subscription has expired to renew without delay. Perhaps at no other time will your patronage be so essential to us. Our thanks and falthful services will be guaranteed.

But we know that some will drift from us. Perhaps a few by reason of circumstances beyond their control. But hope that fortnne may yet smile liberally upon them all. Our good wishes shall follow them. We trust many will return.

While, naturally, less might be expected of a journal on this sparsely and newly populated coast, than from those of older established communities, we strive, as true pioneers, to lead the van by producing a sheet of superior practical value in the special field of journalism in which we labor.

A Mining Retrospect.

As the old year ie about drawing to a cloee, we fancy that it would not be inappropriate to oaet a retroepective glance over our mining affaire for the past twelve monthe, and see how far we have been succeseful or otherwise in thie most importaut branch of our Pacific Coast Commerce.

We boaet—and probably we are justified in doing so — of possessing the finest gold and eilver mines in the world, ecattered at short intervals from Britieh Columbia to Mexico, and from the Rocky Mountains to the Pacific Ocean —an area almost equal in extent to the whole of Enrope.

Millions of dollars have been expended in this territory, in opening up mines, constructing roads, and in the erection of magnificent quartz-mills; all of which are so many monnments to American enterprise and ekill. The question now arieee, hae all thie money been jndiciously and honestly expended, for legitimate mining purposee, or has it eometimes been purposely squandered or misapplied by dishonest and unscrupulous mining speculatore, whose sole aim is to enrich themselves at the expense of the uninitiated, who are often induced to embark in the most hopeless speculations on the strength of the fraudulent mierepresentations of this claee of men? The question is eoon answered, if we carefully examine the etatistice of Washoe, Pioche, Enreka, or in fact any of our great mining districts.

In spite of all our flattering reports of big yields we find only one mine, the "Raymond & Ely" paying a dividend, and nearly all the others levying assessments. Shonld a stranger aek the queetion, why such a mine—say, for example, Crown Point or Belcher, either of which is yielding about 300 tons a day, and making a clear profit of from $10,000 to $50,000 a week,—cannot afford to divide a little of this surplus cash among the stockholders, he would probably be told, that the Directors of the Company wanted to keep the etock down; they had sold at high figures, and then had suspended dividende in order to break the market, so they could buy back cheap, and the chances are that if thie informant was convereant with the ways of the California-street mining rings, he would consider this perfectly legitimate, and make all he could out of hie information; aud his friend would come to the conclusion that the mining interest of this Coaet wae a delusion and a snare, and controlled by a class of eharpers, in whoee hands no honest man's money was safe.

If we turn from Virginia shall we find thinge better in Eureka? Alas! there also do we find a repetition of the same old story:—the old Comstock crowd repeating their old tricke. The "Eureka Consolidated," the great mine of that district,—yielding about 500 tone of splendid ore a day—hae not paid a dividend for the last 15 months. We fancy that the Directore of this Company would be eorely pnzzled to render an account of the diepoeition made of the enormous amount of money that must have been extracted from over 40,000 tons of ore. It could not all have been spent in developing the "K. K." mine, the private property of eome of these gentlemen. But it is hard to please everybody. Some people complain when ground or rock ie ealted to pay a dividend, and others when all the salt is extracted.

In Pioche the "Raymond & Ely" pays ite regular dividends. It is not a better mine than many others, which are levying aeeessments, but then it is controlled, we are informed, "by two or three honest men." Surely theee men have misteken their vocation; what businese bave they among the stock sharps of California etreet? Sell out at once, gentlemen; let ue have an asseesment on your claim, so that it shall no longer be a reproach to all the other mines on the Coast.

There is but little room for congratulation after a careful etudy of the laet year'e mining returne. We have passed throngh a ehort period of excitement, when pricee of mining etocks reached almost fabulous figuree, followed, ae soon ae the stock bubble hurst, hy a corresponding depression, which continuee up to the preeent time. Then we put our trust in diamonds, religionely vowing never to tonch miningstock. Alas! there was Arnold and Slack, that we know of and Jonee and Smith whom we suspect, and if we wanted diamonde we found we should have to do ae they did; viz:—go to London and huy them.

But these things tell fearfully in the long run against the welfaie of the country at large. All confidence in the integrity of our miniug men, and their mode of doing businees, cannot bc destroyed with impunity. The injury tbey work others must, at eome time, recoil on their own heads. These men are ehrewd enongh to see tbat, but possibly eacb one thinks that he can save himself at the last moment. "After me the Deluge" eaid Lonie XV.

However, majorities mnst rule, and whether it may be possible to protect the rights of the minority or not, by legislation, is a subject we will discnss at a future time.

Importance of the Coast Survey

The importance of the U. S. Coast Survey can scarcely be estimated in dollars and cente. which has already been expended on this Notwithstanding tbe large amonnt of money enterprise the work has in reality but jnst been commenced, and can bardly be completed with the desired thorougbness short of a centnry hence. The entire country, from center to circonmference, ie interested in the prompt and successful prosecution of thie work.

The eafety of more than two thonsand millions of dollare in annual commercial valnes depends upon the amplitude and correctness of this work—valnee which enter more or leee into the consnmption of every family in the Union. The value of every ehip and cargo that is lost by reason of imperfect or incomplete surveye ie assessed upon the people who consume tbe merchandise which they transport. If the Coast Surveys were complete euch disastroue wrecke ae have so often occnr-ed on this Coast, without stress of weather, could scarcely take place.

It ie to be regretted that the distingnished head of the Survey, Prof. Pierce, should have found it neceesary, at a late ecientific meeting, to have made any remarks discouraging a more energetic prosecution of the Pacific Coast Survey. The needs of commerce here, be thought were not so nrgent as to call for any increased outlay. We fear that distinguished gentleman has not thoroughly stndied the late rapidly increased percentsge of commercial growth centering at this port, or taken in mind the fact that it promises to increase at even a more rapid ratio during the balance of the present decade. Before the work needed here can be apprximately finished, the tonnage entering and departing from this port will have reached an enormous value, the safety of which ought not to be jeopardized for the paltry conaideration of a few tbousand dollars per annum to increaee the efficiency of our local survey.

In this connection it may not be ont of place to call attention to the tbreatened invaeion of our harbor hy the nndue extension of wharves. It is to be regretted that in almost every large port there are to be fonnd capitaliste ever ready to push out wharves to secure individual advantage at the risk of working serione detriment to harbore. The Coast Survey ehould ever be ready to raiee a warning voice againet euch encroschments. In the case of the harbor of San Francisco, we believe that the vigilant and eminently competent officer in charge here, Prof. Davidson, hae not heen unmindful of hie responeihility in thie psrticular, although such mattere may not come etrictly within the limite of hie official dnty. He has already, in connection with other Federal officere, entered a protest againet any invaeion of this kind, which a portion of our delegation in Congress seema disposed to approve and legalize. We trust that better councils will eventually prevail, and that the harbor of San Francisco will be kept intact and unharmed, as it ehould be in view of the magnificeut future which awaits it, if so preserved.

GOOD POLICY.—The Pacific railroad employees are instructed to allow free rides to Indians on freight traine near their homes—this privileage being granted to secure their good will. This ie good policy. The Indians consider themselves the only persons entitled to "deadhead" ridee, and keep a sharp watch for white men who may be trying to evade the payment of fare. They will not be inclined to tamper with, or in any way injure a road where they have the priviledge of free rides at their pleasure.

IMPORTANT MINING SALE.—The Patterson, or as it is eometimee called the Tri Color Mine, at Tattletown, Tuolumne county, wae sold on the 19th inst., to J. J. Corrigan of thie city, for $30,000. This is an old mine which has been worked more or less since 1857. The vein is a large one and well defined. Two tunnels will be opened for the more convenient working of the mine, and a mill will be immediately erected. Two or three months will elapee before the new proprietor commences taking out ore.

California Poppy.—(*Eschscholtzia Californica.*)

Of the many beautiful native flowers that adorn the plains of California, there is none more brilliant and showy, and no more general favorite than the California poppy. It grows in the greatest profusion. In portions of the San Joaquin Valley, during the month of April, its rich blooms cover the ground so densely as to form a continuous carpet over acres of land, intermingled with various white, yellow, blue, pink and purple flowers, and under the mid-day sun, its brilliant orange color actually dazzles the eye.

This is particularly true of a species of our poppy which is frequently called the Orange Flower, on account of its rich saffron color. For we must remember that there are no less than five different kinds of this member of the poppy family in California, all of which are found in San Joaquin Valley. Of these the flowers of three are yellow; one, a deep orange or saffron; and the fifth, a pure white.

We have promised that in describing our wild flowers we shall give not only their common names, but also their botanical or systematic ones. The latter are so called because they reduce botany, or the study of plants, to a system, and science means nothing more than knowledge reduced to a system.

The systematic name of our poppy is *Eschscholtzia*. "Whew!" you will say, "what an outlandish, unpronounceable name. Why do naturalists, who ought to be men of sense, give such names to plants and animals?" We shall try to explain. Men wish to know how many kinds of animals and plants there are in the world, and to arrange and name them in order properly, according to their different kinds, to do this, leading naturalists, like Linnæus, Cuvier, and their successors, have found it necessary to give names in that language which is most generally understood throughout the civilized world by those who have enjoyed the advantages of education. That language is Latin which was spoken by the old Romans who, as you know, once ruled the world, so that their language has become a part of the many languages of all civilized nations of modern times.

These are the reasons why every animal and plant that is known has a Latin name. Sometimes these names are given from the qualities of the plant or animal, sometimes from the name of their discoverer.

In this way our California poppy is named after the man who first made it known to the scientific world.

It was named in honor of a Russian naturalist, who made a voyage around the world, and visited California nearly fifty years ago, with the celebrated Kotzebue, the Russian navigator. This was Dr. Eschscholtz, and as he first made the plant known to the naturalists of Europe, it was called Eschscholtzia, which simply means Dr. Eschscholtz's plant. It is pronounced as if spelled Es-koltz-e-a accented on second syllable. But as there are several kinds of this plant, which differ in size and color, another Latin word is added to distinguish them.

The kind which was first discovered was called *Eschscholtzia Californica*, that is, California poppy. It is the largest kind, sometimes attaining a hight of between two and three feet, and has yellow flowers. One variety of this species has pure white flowers, and may be called *Eschscholtzia Californica corolla-alba*, which being interpreted merely means the white flowered California poppy.

The orange colored species, which is most common on our lighter soils, is named *Eschscholtzia crocea*, or crocus poppy, so called because its flower is cup-shaped, and of a deep orange color like the crocus. It usually grows from a foot to eighteen inches high.

Two smaller kinds with yellow flowers are *E. compacta*, so named from its dwarfish, compact form, and *E. tenuifolia*, or slender-leaved poppy.

These poppies can be easily distinguished from our wild tulips, already described in the Press. Poppies have four flower leaves, or petals, but tulips only three. Poppies have finely divided leaves, as represented in our engraving, while tulips have simple grass-like leaves. They have but a slight odor, reminding one of a freshly cut watermelon.

Our engraver presents us to-day with a life-like, or an accurate, representation of the California poppy, giving its stem, leaves, buds, flower and seed-pod in their natural size. It is seen that the seed-pod is very differently shaped from that of the opium poppy and its kindred species.

Fig. 2 is the pod opened, when green; 3 is the same as it opens, when dry; 4 is the upper part of the seed pod, before opening; 5 is a seed magnified; 6 is a section of the same showing the germ, and 7 is the germ magnified still more.

No. 8 shows how the stamens, or male organs of the flower, are attached to the petals, and 9 is a section of an unripe seed-pod.

From March until September our poppies are blooming and beautifying the plains in some portion of California. In San Joaquin Valley they first bloom in March, are in all their glory in April, and disappear entirely by the first of July, when our plains are dry and sere. But the traveler sees them in full bloom along the Central Pacific Railroad, in Livermore Valley and to the westward, until late in September.

RALPH RAMBLER.

THE CALIFORNIA POPPY.

COMPARATIVE VALUE OF CALIFORNIA COALS.—The following table of the comparative value of California coals determined by a series of careful experiments made by the United States Government at Mare Island should be carefully studied and understood. The experiments were made with reference to determining the amount of the several kinds of coal which would be required for a calorific equivalent to a cord of the best oak wood, obtained in this market. The result was as follows:

	Pounds.
Nanaimo, Vancouver Island, B. C.	1,800
Bellingham Bay, Washington Territory	2,200
Seattle, Washington Territory	2,400
Rocky Mountain, Utah	2,500
Mt. Diablo, California	2,600
Coos Bay, Oregon	2,600

LOOKING AFTER THE WASTE ROCK.—It appears from the Territorial *Enterprise* that more attention is being given to looking after the waste rock at the various mines along the Comstock range. Numbers of laborers are engaged at the present time in sorting over the waste rock from the Bowers, Imperial, Confidence, and Bacon mines. It is claimed that the improvements which have been introduced in machinery since this rock was thrown aside, make that valuable now, which formerly could not be worked at a profit.

Experiments in Fuel—Cheap Irrigation.

Mr. Wilcox has recently been experimenting at his works on Fremont street, with his large pump or "lifter," to ascertain the relative value of coal and wood for making steam, and also the actual cost of raising given quantities of water for irrigating purposes. The boiler used was one of his style of upright tubular boilers encased with brick, the shell being 8 feet in length and 36 inches in diameter, with 36 tubes 2¼ in diameter amounting to 365 feet of heating surface. The pump in each of the following trials was gauged to run at 8 strokes per minute raising 150 gallons per stroke. The water was raised 35 feet; 14 feet of which was done by the exhaust steam alone.

The first trial was with ¼ ton of first-class quality of Mt. Diablo screenings, which ran 90 minutes, raising 108,000 gallons.

The 2d trial was with ¼ ton of ordinary Mt. Diablo coal, which ran 85 minutes, raising 102,000 gallons.

The 3d trial was with ¼ cord of dry Oregon pine wood, which ran 95 minutes, raising 114,000 gallons.

At the above rates 1 ton of good screenings, costing $7.00 per ton, will raise 432,000 gallons 35 feet, equal to 1⅔ cents for each 1,000 gallons. From the trial of wood we may reckon that one cord, at say $8.00 per cord, will raise 456,000 gallons 35 feet high, at the rate of 1¾ cents for each 1,000 gallons. Reckoning wood at $5 per cord, each 1,000 gallons will cost 1 cent and 1 mill.

Twenty-seven thousand gallons of water will cover one acre of land one inch deep, which at the rate of $5 per cord for wood will cost:

1 acre, 1 in. deep	$ 0.29⅔	1 acre, 2 in. deep	$ 0.59⅓
5 " " "	1.48⅓	5 " " "	2.98—
10 " " "	2.97—	10 " " "	5.94—
100 " " "	29.70—	100 " " "	59 40—

These lifters are made of some twenty different sizes—five of which, with their capacities and cost are given as follows:

A lifter with boiler, pipes and everything complete, with a capacity for raising 10,000 gallons per hour, will cost $628. This machine, according to the above experiments, can be run 6 days of 10 hours each with 1½ cords of wood, which at $5 per cord will cost $7.50. During those six days the machine will raise 600,000 gallons of water 35 feet above its natural level, or sufficient to flood 11 acres of land 2 inches deep. A machine of 20,000 gallons per hour capacity, costing $980; one of 40,000 gallons capacity will cost $1,720.

This machine may also be economically employed for draining mines, especially placer mines, where it is not required to raise the water to any considerable hight.

PATENTS & INVENTIONS.

Telegraphic List of U. S. Patents Issued to Pacific Coast Inventors.

REPORTED OFFICIALLY FOR THE MINING AND SCIENTIFIC PRESS, DEWEY & CO., PUBLISHERS AND U. S. AND FOREIGN PATENT AGENTS.]

By Special Dispatch, Dated Washington, D. C., Dec. 24th, 1872.

FOR WEEK ENDING DECEMBER 10TH, 1872.

REGISTERED PACKAGE ENVELOPE.—William F. McCrary, Baker Co., Oregon.

NUT LOCK.—Francis A. Bishop, Shingle Springs, Cal.

DISH WASHER.—Augustus W. Thornton, Mendocino, Cal.

APPARATUS FOR COMPACTING GUANULAR SUGAR INTO BLOCKS.—August F. W. Partz, Oakland, Cal.

MANUFACTURE OF ARTIFICIAL STONE.—Ernest L. Ransome, S. F., Cal.

MODE OF PROPELLING CANAL BOATS.—Patrick Rippingham, Virginia City, Nev.
[This patent was issued Dec. 10, 1872.]

*The patents are not ready for delivery by the Patent Office until some 14 days after the date of issue.

NOTE.—Copies of U. S. and Foreign Patents furnished by DEWEY & CO., in the shortest time possible (by telegraph or otherwise) at the lowest rates. All patent business for Pacific coast inventors transacted with greater security and in much less time than by any other agency.

New Books.

HOBB'S ARCHITECTURE.—There is certainly no excuse for ugly features in architecture in this country, if the publication of books of designs, ground plans, etc, will prevent the erection of such unseemly structures. The work before us is one of this description, and a really valuable one—indeed, it is quite in advance of most which have preceded it. It contains nearly one hundred ground plans and designs, most of which are somewhat costly but many of which are well adapted to persons of moderate means.

Madame De Stael defines architecture as "frozen music;" another writer styles it "crystallized sentiment." The outlines of a beautiful building are like "a joy forever." The individual who has no eye or taste for the appreciation of beautiful forms in architecture, is incapable of one of the highest types of enjoyment to which the human mind can attain. Such a person is to be pitied. All have not the means to create such sources of enjoyment for themselves; but even a peasant may look upon a queen. So may the poorest in the community have real joy in admiring the creations of those whom fortune has blessed with means and the inclination to provide such enjoyments.

The intent of the work before us is to create a love for choice architecture, and to assist those who may be about to build, and have means to indulge more or less in taste, to so expend their money that it shall be a perpetual joy as well as comfort and necessity. In looking over its pages the reader can scarcely fail to find some plan which will serve to convey an idea of what he wants. J. B. Lippincott, Philadelphia, publisher. For sale by A. Roman & Co., of this city.

UNITED STATES CONSTITUTION.—We have before us "A Concordance of the Constitution of the United States of America, with a Compiled Index, and Questions for Educational Purposes, by Chas. W. Stearns, M. D." The Constitution of our own country is made quite too little a study in schools, and by the masses of the people. One of the chief reasons of this neglect is perhaps due to the difficulty of finding this important document printed in convenient form, with proper helps for its study. The little book before us seems to be well fitted to meet this objection, and it should hence meet with a large sale. The "questions" are so framed as to make the study both an easy and interesting one.

DOMESTIC ECONOMY

Putting up Stoves.

We have no doubt but that a great many of our readers will find their own experience reflected in the following amnsing acconnt, by an unknown anthor, of a disagreeable task to be performed, at the approach of the winter season of the year in many households:

The first step a person takes is to put on a very old and ragged coat, under the impression that, when he gets his month full of plaster, it will keep his shirt bosom clean. Next he gets his hand inside the place where the pipe ought to go, and blacks his fingers, and then he carefully makes a black mark down the side of his nose. It is impossible to make any headway in doing this work until this mark is made. Having got his face properly marked, the victim is ready to begin the ceremony. The head of the family—who is the big goose of the sacrifice—grasps one side of the bottom of the stove, and his wife and the hired girl takes hold of the other side. In this way the load is started from the woodshed toward the parlor. Going through the door, the head of the family will carefully swing his side of the stove around, and jamb his thumb nail against the doorpost. This part of the ceremony is never omitted.

Having got the stove comfortably in place, the next thing is to find the legs. Two of them are left inside the stove since the spring before; the other two must be hunted after for twenty-five minutes. They are usually found under the coal. Then the head of the family holds up one side of the stove while his wife puts two of the legs in place, and next he holds up the other side while the other two are fixed, and one of the first two falls out. By the time the stove is on its legs, he gets reckless, and takes off his old coat, regardless of his linen. He goes off for the pipe, and gets a cinder in his eye. It don't make any difference how well the pipe was put up last year, it will be found a little too short or a little too long. The head of the family jams his hat over his eyes, and, taking a pipe under each arm, goes to the tinshop to have it fixed. When he gets back, he steps upon one of the best parlor chairs to see if the pipe fits, and his wife makes him get down for fear he will scratch the varnish of the chair with the nails in his boot-heel. In getting down, he will surely step on the cat, and may thank his stars if it is not the baby. Then he gets an old chair, and climbs up to the chimney again, to find that, in cutting the pipe off, the end has been left too big for the hole in the chimney. So he goes to the woodshed, and splits up one side of the end of the pipe with an old axe, and squeezes it in his hands to make it smaller. Finally, he gets the pipe in shape, and finds that the stove does not stand true. Then himself and wife and the hired girl move the stove to the left, and the legs fall out again. The next move is to the right. More difficulty with the legs. Moved to the front a little. Elbow not even with the hole in the chimney, and he goes to the woodshed after some little blocks. While putting the blocks under the legs, the pipe comes out of the chimney. That remidied, the elbow keeps tipping over, to the great alarm of his wife. He then gets the dinner-table out, puts the old chair on it, gets his wife to hold the chair, and balances himself on it to drive some nails in the ceiling. Drops the hammer on his wife's head. At last gets the nails driven, makes a wire-swing to hold the pipe, hammers a little here, pulls a little there, takes a long breath, and announces the ceremony completed.

Job never put up any stoves. It would have ruined his reputation, if he had.

True, every word of it. We know how it is ourselves.

AMERICAN DIET.—We are a greasy people; from the pork fat of New England to the ham-fat of the South we wallow in greasy food. This becomes rancid on the stomach, and superinduces what Dr. Urquhart pronounces the sum of all diseases—dyspepsia. We drink tea that would frighten a Chinaman, and coffee that would serve as an antidote to opium. We pour down doses of alcoholic fluids which eat into the coatings of our intestines and destroy the gastric juices. We go to bed over-tasked, body and mind, sleep with sluggish blood in a state of stagnation, and get up only when the broad sun is staring in angrily at us through our bed room windows. We are reckless in our pursuit of pleasure; we strain our mental powers to their utmost tension; and end, old men and women before our time, or die, or fill a cell in an insane asylum.

HOW TO SAVE COAL IN OPEN GRATES.—The *Spectator* remarks that "the most practical suggestion yet made towards economy of coals seems to be the use of solid bottoms in ordinary fire-grates. It is asserted, and indeed proved, that in any fire-place not excessively small, a plate of iron placed upon the grate will halve the consumption of coal, reduce the smoke, and leave a cheerful, free-burning fire. Quite sufficient air enters through the bars, no poking is necessary, and the fire never goes out till the coal is consumed. There is no ash and no dust, every particle of fuel being consumed. Any householder can try this experiment, and reduce his coal bill, say, 30 per cent., at the cost of a shilling." This is not a new idea, but we believe it to be a good one.

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3.00 P. M. (Daily). San Jose Passenger Train (via Oakland), stopping at all way Stations.

4.00 P. M. (Sundays excepted). Passenger Train (via Oakland) for Lathrop, Merced, Visalia, Tipton, and Los Angeles, Stockton and Sacramento.

4.00 P. M. (Sundays excepted). Cal. P. R. R. Steamer (from Broadway Wharf) connecting at Vallejo with Trains for Calistoga, Knight's Landing and Sacramento.

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ALAMEDA BRANCH.—LEAVE SAN FRANCISCO, 7 20, 9 00 and 11 15 a. m., 1 30, 4 00, 5 30, and 7 00 p. m. (7 20, 11 15 and 5 30 to Fruit Vale only).

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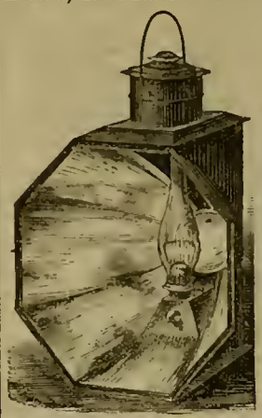

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Smelting Ores on the Pacific Coast. No. 1.

We are well aware of the difficnlty of speaking with any minuteness, in the space of a newspaper article, of the operations that have beeu undertaken on this Coastin this important line of business—a business, which is destined to become one of the most important and successful of our enterprises; nevertheless, we shall attempt to give, in the present article, a condensed history of smelting as it has beeu carried on, and hereafter a few hints as to the manner in which it must he conducted to make it a success.

The Reduction by Fire

Was the only method known to the ancients of obtaining metals from their ores, and was carried by them to a much greater perfection than they are generally credited with. Amalgamation of the precions metals is a comparatively modern process arising from recent improvements iu machinery, and chemical knowledge.

Till within the last few years little or no attention had been paid to smelting any kiud of the numerous ores found on this Coast, and which were properly susceptable of reduction by this most primitive, yet in many instauces, most effective process. The reasons for this are easily found in the natural features of this country, the non-discovery of any really good quality of coal for blast furnaces, and the expense nnder the most favorahle circumstances attending the manufacture of charcoal, owing to the high price of labor and transportation, were sufficient in themselves to account for the lapse of time betweeu the day mining became a bnsiness, and smelting a success on this Coast. The first furnaces worthy of mention that were erected on this Coast were in Oregon for the reduction of

Iron Ore.

The quality of iron manufactured was excellent, hut the enterprise for the time proved a financial failure, owing partly to the high price of labor and partly to the country being too youug for the business.

Railroads, those great ultilizers and developers of iron iuterests not haviug heen even projected in that day. We have not yet heard of the works being put again into operation, though douhtless they, in common with the other iron interests of this Coast have a brilliant future before them, when the price of labor and fuel shall permit competition with the iron producing regions of the world.

The first furnaces for the smelting of

Argentiferous Lead Ore,

Were erected at Oreana, Nev., in 1863, and consisted of hlast furnaces aud a cupel furnace for refiuing the bullion on the ground *i. e.*, separating the had and other base from the precious metals, the expense of transportation heing too great to ship the crude hullion. The works did not pay. The proprietors were all Eastern men, who allured by the prospect of the large profits which such an enterprise would have commanded, with eastern prices and easteru facilities, and ignorant of the difficulties and expenses of such a prospect, whon carried on with 300 miles of team transportation between the works and any outlet to civilization found themselves after large outlay with a prospect of no return.

It was one of the mauy failures that have happened when eastern capital has been invested here in enterprises, a careful iuvestigation of which would have proved their worthlessness, and even a cursory examination of then doubtful stability; and has aloug with ite fellows prevented many an iuvestment being made in mines that good seuse would have warranted, and good dividends sustained.

Lead Ores of Inyo County.

The first really successful attempt at smelting the lead ores of this Coast was made in Iuyo County in this state some four years ago. The works were under the euperintendence of Mr. Belshaw, and the ore was smelted in an upright hlast furnace after the Castiliau model.

These works, thongh separated from any convenient outlet by nearly 175 miles of land travol, have had the great advantage of heiug surronnded by mines producing the very best quality of smelting ore, containing a large proportion of lead free from most base metals, generally as high as 40 to 50 per cent. The silver contained in these ores is generally high; iu somo samples we have seen even as high as $1,500 per ton of 2,000 lbs, though this of course is decidedly exceptional. The average of the ores must be nearly $100 per tou in silver with the additional advantage of containing sufficient lead to permit the mixing in the smelt, of a small proportiou of the rich silver ore obtainable here. Some of these ores contaiu as high as $500 per tou in silver aud the additiou of a small proportion of them to rich lead ores gives the bullion a much greater proportion of silver without increasing the loss in the process by either furnaces or enriching the slags.

The ores found in this, the 'Lone Pine" District, and used in smeltiug, are chiefly galeua, though carbonates and oxides are also obtained.

The galenae (sulphurete of lead) are generally roaeted, though in some cases only a portion is roasted and the charging of the furnace so mauaged as to combine carbonates, oxides, roasted ores, and a portion of unroasted galena.

The results from these furnaces have been very generally good, so much so, that a number of other furnaces have been erected by other companies and the quantity of hullion manufactured has been so great that at times it has accumulated at the works in large quantities, the production being so much greater than the means of transportatiou at hand. These works and mines in this portion have been and now are in successful operation and bid fair to continue so with even increasiug profits for mauy years to come. In fact when the projected railroads shall reach this point, probahly within two years, the profits of the smelting works at this District must be very materially increased.

The uext to successful smelting operations we have to notice are those at

Eureka, Nevada.

The ores are very similar to those at "Loue Piue," carryiug a larger proportion of lead and silver, though perhaps as a rnle the lead is more geuerally in the carbonate and oxyde from those at "Lone Pine." The percentage of silver in the bullion produces as high in some cases, evcu as much as $500 to $600 per two thousand pounds. In fact the great amount of silver in these ores permits their successful workinq under circumstances that with those of lower grade would have proved a financial failure. Eureka is eighty miles from the railroad; charcoal is very high (30 to 35 cents per hushel, and labor is at corresponding rates; moreover the amount of wood suitable for the manufacture of the fuel is limited. Under these circumstances, it is easy to see that uone hut rich ores will pay for reduciug; in some cases furnace linings, owing to improper management of furnaces and the character of the ores redneed, have to be replaced, even after less than a month's run. The futuro of Eureka and the adjacent mining sections with regard to their lead interests are very largely dependent upon the projected narrow gauge railroad, and the recent development in the mines at this point, together with the confidence shown hy tho pnblic in the high price paid and demanded for some of the Eureka stocks, all tend to forward tho chances for the completion of this enterprise.

The Lead Mines of Utah

Were next in point of time as to discovery on this coast. They are very nnmerous and in many cases very rich as well as extensive. The lead mining districts are chiefly the Cottonwoods, American Fork and West Tintic, though Ophir, East Tintic and Bingham Cañon among their various mines have some producing fine smelting ores. The first district in which mines of this character were discovered was Little Cottonwood, which was soon prominent on account of the almost fabulous wealth of the famous Emma mine, which produced ore of sufficient richness in silver to pay a very handsome profit on its direct shipmeut to Europe. There have been so mauy fine mines discovered of argentiferous lead ore in that territory that to attempt a mention of them by name wonld be impossible iu the limits of a newspaper article. A large numher of furnaces have been erected here, some with good success, others with indiffereut results, owing to errore in their construction, or lack of uecessary facilities. There have also been attempts made in

Copper Smelting

On this coast, but owing to the falling off in the value of copper and the great amonnt of fuel necessary to prodnce the refined metal from reducing ores, and the difficulty in finding men experienced in the husiuess, they have in many cases proved financial failures. The recent great increase in the value of copper will doubtless stimulate this branch of smelting, though for the present we believe it to he the wisest plan, as a rule, to merely smelt the copper ore to a high grade of matte and ship it for complete reduction and refining to points where fuel and other facilities aro both cheaper and more convenient.

Among the prominent smelting works erected in this State were those for the reduction of copper ore at Antioch, on the San Joaquin River. They consisted of reverberating furnaces, but on account of the expeuses of good fuel, (Mount Diahlo coal being of such a nature as to soon after being heated, crumble into powder aud fall between the grate bars into the ash pits, thns wastiug a great part of its caloric), and the expeuses of a corporation being saddled on to a small number of furnaces, the works did not pay, and were discoutinued; and soon aftcr this the great decline in copper took place; they havo not heen put into operation again.

Antimony Smelting

Has been attempted in Nevada, the only place in the United Statee where antimony was ever produced directly from the ores; but owing to the falling off in the price of the metal from 22 cents to 13 cents per pound in currency, the business has been for the present abandoned, though the quality of the metal ohtained was first-class, and sold for the same price as the best English Star Regnlus. But of this branch of smelting we may speak more at length in a futuro article, and we try to give a few practical hints ou the smelting of the argentiferous lead ores of the Coast, and a statement of the difficulties to be encountered in it, as well as a view of the prospects for makiug it one of the great businesses of this section of the United States.

1873.

1873.	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
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1873.	Sun.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
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THE VISALIA AND STOCKTON narrow-gauge railroad is gaining ground and subscriptions are said to be satisfactorily increasing. An unusual interest is being manifested in this class of roads all over this Coast which they will materially benefit.

New Incorporations.

QUARTZ MINING CONS. M. CO.—Dec. 21. Location: Tuolumne county. Capital stock, $1,500,000. Trustees—J. P. Jones, George Hurst, G. W. Gashwiler, J. D. Fry and Geo. W. Totten.

SILVER CLOUN G. AND S. M. CO.—Dec. 25. Location: Gold Hill Mining District, Storey county, Nevada. Capital stock, $3,200,000, divided into 32,000 shares. Trustees—M. D. Townsend, H. O. Kibbe, Geo. W. Fisher, Thomas Williams and Wm. D. Sears.

KEYSTONE NOS. 1 AND 2, G. AND S. M. CO.—Dec. 25. Location: Mohave county, Arizona. Capital stock, $3,000,000 divided into 30,000 shares; Trustees—J. A. Pritchard, Robert Steen, T. G. Phelps, Henry Raymond and Samuel L. Theller.

PACIFIC GRANITE CO.—Dec. 25. Location: Rocklin, Placer county, Cal. Capital stock, $5,000,000, divided into 5,000 shares, Trustees—E. Howes, J. M. Haven and S. McCullough.

WEST MOUNTAIN CONS. G. AND S. M. CO.—Dec. 20. Location: West Mountain Mining District, Salt Lake county, Utah. Capital stock, $5,000,000, divided into 50,000 shares. Trustees—Dwight J. Burnett, J. M. Case, Joseph F. Atwill, Chas. J. Collins and John W. Bucklin.

COLEMAN CONS. S. M. CO.—Dec. 20. Location: Utah. Capital stock, $5,500,000, divided into 50,000 shares. Trustees—David P. Belknap, George F. Sharp, Wm. V. Wells, R. H. Sinton and Samuel Purdy.

ELECTRIO M. CO.—Dec. 21. Location: Butte county, Cal. Capital stock, $2,500,000. Trustees—George McDonald, G. W. Haskell, W. S. Thompson, G. F. Stevens, J. B. Houghton, A. B. Paul and William R. McCann.

San Francisco Metal Market.

PRICES FOR INVOICES.

Jobbing prices rule from ten to fifteen per cent. higher than the following quotations.

THURSDAY, Dec. 26, 1872.

IRON.—			
Scotch Pig Iron, ₱ ton	$30 00	@	55 00
White Pig, ₱ ton	50 00	@	55 00
Refined Bar, hnd assortment, ₱ lb	— 04½	@	— 5
Refined Bar, good assortment, ₱ lb	— 05	@	— 5½
Boiler, No. 1 to 4	— 05½	@	— 06
Plate, No. 5 to 9	— 06½	@	— 07
Sheet, No. 10 to 13	— 07½	@	— —
Sheet, No. 14 to 20	— 07½	@	— —
Sheet, No. 24 to 27	— 08	@	— —
Horse Shoes	8 00	@	
Nail Rod	10		
Norway Iron	8		
Rolled Iron	5		
Other Irons for Blacksmiths, Miners, etc.	5½	@	6½
COPPER.—			
Sheathing, ₱ lb	— —	@	— 45
Sheathing, Yellow	— 33	@	— 40
Sheathing, Old Yellow	— —	@	— 13
Composition Nails	— —		— 30
Composition Bolts	— 23		— 30
TIN PLATES.—			
Plates, Charcoal, IX, ₱ box	18 00	@	— —
Plates, I O Charcoal	14 00		— —
Rooling Plates	18 50		— —
Banca Tin, Slabs, ₱ lb	— 50		— —
STEEL.—English Cast, ₱ lb	— 16		— 17
Drill	16		— 17
Flat Bar	19		— —
Plough Points	16		—17
Russia (for mould boards)	12½		15
QUICKSILVER.—₱ lb	— 85		— 87½
LEAD.—Pig, ₱ lb	— 5¾		— 6
Sheet	— 9		— —
Pipe	— 8½		— 10
Bar	— 6½		— 7
ZINC.—Sheets, ₱ lb	— 9½		— 10
BORAX.—Refined	— 28		— 39
Borax, crude	— 3		— —

Leather Market Report.

[Reported for the Press by Dolliver & Co.]

SAN FRANCISCO, Thursday, Dec. 26, 1872.

Shipments of Sole Leather to the East are quite heavy, and prices are firm, though there has been no advance. Domestic Calf Skin has advanced 10 per cent., in consequence of the large amount destroyed, and French Skins are firm with an upward tendency.

City Tanned Leather, ₱ lb	26@29
Santa Cruz Leather, ₱ lb	26@29
Country Leather, ₱ lb	25@28
Stockton Leather, ₱ lb	25@28
Jodot, 8 Kil., per doz	$80 00@
Jodot, 11 to 19 Kil., per doz	66 00@ 85 00
Jodot, second choice, 11 to 16 Kil. ₱ doz	55 00@ 70 00
Lemoine, 16 to 18 Kil., ₱ doz	75 00@ 77 50
Levrin, 12 and 13 Kil., per doz	68 00@ 70 00
Cornellian, 16 to 19 Kil., per doz	63 00@ 65 00
Cornellian, 12 to 14 Kil., per doz	56 00@ 60 00
Cornellan Femules, 14 to 16 Kil	65 00@ 70 00
Ogerau Calf, ₱ doz	54 00@
Simon, 18 Kil., ₱ doz	60 00
Simon, 20 Kil. ₱ doz	65 00
Simon, 24 Kil. ₱ doz	72 00
Robert Calf, 7 and 8 Kil	35 00@ 40 00
French Kips, ₱ lb	1 10@ 1 30
California Kip, ₱ doz	55 00 to 70 00
French Sheep, all colors, ₱ doz	8 00@ 15 00
Eastern Calf for Backs, ₱ lb	1 15@ 1 25
Sheep Roans for Topping, all colors, ₱ doz	9 00@ 13 00
Sheep Roans for Linings, ₱ doz	5 50@ 10 50
California Russett Sheep Linings	1 75@ 5 50
Best Jodot Calf Boot Legs, ₱ pair	5 25
Good French Calf Boot Legs, ₱ pair	4 50@ 5 00
French Calf Boot Legs, ₱ pair	4 00
Harness Leather, ₱ lb	30@ 37½
Fair Bridle Leather, ₱ doz	48 00@ 72 00
Skirting Leather, ₱ lb	34@ 37½
Welt Leather, ₱ doz	30 00@ 50 00
Bnff Leather, ₱ foot	18@ 21
Wax Side Leather, ₱ foot	20@ 22
Eastern Wax Leather	28

The Mining & Scientific Press,

Started in 1860, is one of the oldest weekly journals now published in San Francisco. It has been conducted by its present proprietors for nine years, during which period it has been repeatedly enlarged and constantly improved. The active and steadfast efforts of its publishers have gained for its conduct an amount of practical experience greater than any other puolishers have accumulated on this coast, of a weekly journal.

The sum paid by us for the best editorial talent obtainable for our special class journals for engravings, for interesting news and correspondence, and for printing a large-sized, handsome sheet, is unequalled by that of any other Americau weekly west of the Mississippi.

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Every intelligent thinker in the land, in high or humble situation, who would avoid literary trash for genuine information, should SUBSCRIBE AT ONCE.

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A new ROLLER SKATE that is superior to all others.

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A superior ROAD SCRAPER.

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A KNIFE SHARPENER that should be in every kitchen.

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The best machiue to CLEAN GRAIN in the world.

A new HOD CARRIER, just out.

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PATENT APPLIED FOR.

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Fire in Full Blast in Half a Minute!

OVEN HOT IN TWO MINUTES.

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OFFICE.....534 California street,

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Mining and Other Companies.

Owing to the time necessary to mail the present large edition of the M. & S. Press we are obliged to go to press on Thursday evening—which is the very latest hour we can receive advertisements.

Amazon Silver Mining Company—Location

of works, Ely District, Lincoln County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the Twenty-second day of October, 1872, an assessment of Ten Cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold and silver coin, to the Secretary pro tem., at his office. No. 609 Sacramento street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the sixth day of January, 1873, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the 22d day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

M. J. McMANUS, Secretary pro tem.

Office, 609 Sacramento street, San Francisco, Cal.

de7-4t

Bunker Hill Quartz Mining Company—Location

of works, Amador, Amador County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 3d day of December, 1872, an assessment of Ten Dollars per share was levied upon the capital stock of said Company, payable immediately to the Secretary, in United States gold coin, at his office, No. 19 First street, San Francisco, California. Any stock upon which said assessment shall remain unpaid on Monday, the 6th day of January, 1873, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, January 27th, 1873 to pay the delinquent assessment, together with the cost of advertising and expenses of sale.

CHARLES H. KNOX, Secretary pro tem.

Office, 19 First street, San Francisco, California.

Cordillera Gold and Silver Mining Company—Location of property, Morelas Mining District, Chihuahua, Mexico.

At a meeting of the Board of Trustees held at the office of the Company, December 21st, 1872, a special assessment of fifteen cents (15 cts.), was levied on each and every share of the capital stock of the Company, payable immediately, in coin, to the Secretary of the Company, No. 321 Washington street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Tuesday, the 21st day of January, 1873, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 10th day of February, 1873, to pay the delinquent assessment, together with the costs of advertising and expenses of sale.

HENRY R. REED, Secretary.

Office, 321 Washington street, San Francisco, Cal. December 25th, 1872. dc23

Golden Rule Mining Company—Location:

Poverty or Chili Hill, Tuolumne County, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment (No. 6,) levied on the 2d day of November, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
J H Webster	71	50	$25 00
J H Webster	72	50	25 00
J H Webster	73	50	25 00
F E Webster	37	25	12 50
Mrs H M Morse	403	6	3 00
W R Cranna	329	5	2 50
A S Evans	3-1	1	50
L P Davis	436	6	3 00
H C Walker	465	50	25 00
H C Walker	466	20	10 00
W F King, Trustee	493	10	5 00
J B Russell	479	10	5 00
Mrs A J Eaton	492	10	5 00

And in accordance with law, and an order of the Board of Trustees, made on the 2d day of November, A. D., 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the auction house of Maurice Dore & Co., No. 327 Montgomery St., on Saturday, the fourth day of January, 1873, at the hour of one o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. B. RUSSELL, Secretary.

Office—Room 5, over Donahue & Kelly's Bank, 432 Montgomery street, San Francisco, de14-3t

Great Blue Gravel Range Company—Location of works, Blue Gravel Range, Placer County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 16th day of November, 1872, an assessment of Ten Cents per share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary, at the office of the Company, Room 5 and 6, No. 302 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Wednesday, the 18th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the 7th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale.

By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room 5 and 5, No. 302 Montgomery street, San Francisco, California. no23

GREAT BLUE GRAVEL RANGE COMPANY—POSTPONEMENT.—The day for deeming stock delinquent on the above assessment is hereby postponed until Tuesday, the 7th day of January, 1873, and the sale thereof until Tuesday, the 28th day of January, 1873, at same place and hour. By order of the Board of Trustees. WM. H. WATSON, Secretary. de21-3t

Hudson Gold Mining Company—Location of works, Oherokee Mining District, Plumas County, State of California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment (No. 2) levied on the 11th day of November, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Curtis, J P	43	500	$37 50
Fassett, N H	9	100	7 50
Hansen, George	36	100	7 50
Kenney, O A, Trustee	27	275	20 62
McClellan, H H	23	500	37 50
McClellan, H H	32	100	7 50
Mack, Julius	39	100	7 50
Olmsted, S E	40	375	28 13
Olmsted, S E	41	1200	90 00
Olmsted, S E	42	800	60 00
Olmsted, S E	44	100	7 50
Rowe, Robt	35	230	18 75
Smith, F A	10	2000	150 00
Smith, F A	16	475	35 62
Uhler, J Clem, Trustee	26	200	15 00
Warner, Charles H	34	250	18 75

And in accordance with law, and an order of the Board of Trustees, made on the eleventh day of November, A. D. 1872, so many shares of each parcel of said stock as may be necessary, will be sold at the office of the Company, No. 411 California street, San Francisco, California, on Monday, the 6th day of January, A. D. 1873, at the hour of 1 o'clock P. M. of said day, to pay said delinquent assessments thereon, together with costs of advertising and expenses of sale.

JOS. L. KING, Secretary.

Office, 411 California street, San Francisco, California. de21-3t

Hardy Coal Mining Company—Location of works, Cooso County, Oregon.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 16th day of November, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Thomas Hardy	7 (New)	75	$37 50
Thomas Hardy	8 (New)	10	5 00
Thomas Hardy	18 (New)	155	77 50
Thomas Hardy	34 (New)	29	14 50
Thomas Hardy	2 (Old)	5	31 25

And in accordance with law, and an order of the Board of Trustees, made on the 16th day of November, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, Room 5, No. 338 Montgomery street, San Francisco, California, on Saturday, the 18th day of January, 1873, at 11 o'clock A. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

By order of the Board of Trustees.

JACOB HARDY, Secretary.

Office, Room 5, No. 338 Montgomery street, San Francisco, California. dc28-3t

Ivanhoe Silver Mining Company.—Location of works: Ely District, Lincoln County, State of Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 12th day of December, 1872, an assessment of one dollar per share was levied upon the capital stock of said Company, payable immediately in United States gold coin to the Secretary. Any stock upon which said assessment shall remain unpaid on the 19th day of January, 1873, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Thursday, the 6th day of February, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

DANIEL BUCK, Secretary.

Office, 14 Stevenson Building, No. 331 Montgomery street, San Francisco. d14 1m

Kincaid Flat Mining Company.—Location of works: Tuolumne County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 9th day of December, 1872, an assessment of three dollars per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at his office, 220 Clay street, San Francisco. Any stock upon which said assessment shall remain unpaid on the 13th day of January, 1873, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Wednesday, the 5th day of February, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

R. H. CORNELL, Secretary.

Office, 220 Clay street, San Francisco. de14-1m

Lemon Mill and Mining Company.—Notice to Stockholders.

Notice is hereby given, that a meeting of the Stockholders of the Lemon Mill and Mining Company will be held at the office of the Secretary, No. 608 Merchant street, San Francisco, Cal., on Monday, the 6th day of January, 1873, at 12 o'clock M. of said day, for the purpose of voting upon a proposition to increase the capital stock of the Company from two million (2,000,000) dollars, divided into twenty thousand (20,000) shares, of the par value of one hundred (100) dollars each (the present stock of the Company), to Three Million (3,000,000) Dollars, divided into thirty thousand (30,000) shares, of the par value of one hundred (100) dollars each.

G. W. CLARK, Trustee,
H. H. SCHAFER, Trustee,
JOHN FAY, Trustee,
H. BARROILHET, Trustee,
CAMILO MARTIN, Trustee,
} Lemon Mill and Mining Co.

San Francisco, Dec. 3d, 1872. de7-4t

Mammoth Blue Gravel Company—Location of works, Nevada County, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment (No. 1) levied on the 18th day of November, 1872, the several amounts set opposite the names of the respective shareholders as follows:

Names.	No. Certificate.	No. Shares.	Amount.
G W Frasher (Bal)	9	872	$69 76
H S Warren	12	1742	139 36
S B Whipple (Bal)	7	1730	138 45
Jas T Dean	8	2130	170 40
Mrs S W Croninger	13	159	12 72
John Williams (Bal)	3	238	19 05
Peter Cook	14	387	30 96

And in accordance with law, and an order of the Board of Trustees, made on the 18th day of November, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, Room 37, New Merchants' Exchange, on the 13th day of January, 1873, at the hour of 12 o'clock M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

J. M. BUFFINGTON, Secretary.

Office, Room 37, New Merchants' Exchange, California street, San Francisco, California. dc28-3t

Mocking Bird Mining Company, Location of works, Ely Mining District, Lincoln County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the fifth day of December 1872, an assessment of ten cents a share was levied upon the capital stock of said Company, payable immediately, in United States gold coin, to the Secretary at the office of the Company Room 21, Hayward's Building, 419 California street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 10th of January 1873, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, January, 31st, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale.

By order of the Board of Trustees. J. C KIBBE, Secretary.

Office, Room No. 21, Hayward's Building, 419 California street, San Francisco, Cal.

Mount Jefferson Milling and Mining Company. Location of works: First Garote, Tuolumne County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said company, held on the eighteenth day of December, A. D. 1872, an assessment of fifteen cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary of said company, at company's office, 418 California street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on Monday, the 27th day of January, A. D. 1873, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 17th day of February, 1873, at the hour of 2 o'clock P. M., to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

de28 4w J. W. CLARK, Secretary,

Ophir Copper, Silver and Gold Mining Company of Placer County, California. Location of works: Ophir, Placer County, California.

Notice is hereby given that at a meeting of the Board of Trustees of said Company, held on the 30th day of Dec. 1872, an assessment of ten (10) cents per share was levied upon the capital stock of said company, payable immediately in United States gold and silver coin, to the Secretary, at the office of the company, room 2, Express Building, at 402 Montgomery street, San Francisco, Cal.

Any stock upon which said assessment shall remain unpaid on the 25th day of January, 1873, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the seventeenth day of February, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

Office—No. 402 Montgomery street, San Francisco, Cal. de28

Norman Gold Mining Company—Location of works, Aqueduct Mining District, Amador County, California.

Notice is hereby given, that at a meeting of the Board of Trustees of said company, held on the 11th day of November, 1872, an assessment of five cents per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary, at the office of the company, Room 5 and 6, No. 302 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Thursday, the 12th day of December 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Saturday, the 4th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

W. H. WATSON, Secretary.

Office, Room 5 and 6, No. 302 Montgomery street, San Francisco, Cal. no16

POSTPONEMENT—"NORMAN GOLD MINING COMPANY."—The day for deeming stock delinquent on the above assessment is hereby postponed until Thursday, the 2d day of January, 1873, and the sale thereof until Thursday, the 23d day of January, 1873, at the same place and hour. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

San Francisco, December 12, 1872.

Old Providence Mill and Mining Company, Location of works, Hayden Hill Mining District, Lassen County, California.

NOTICE.—There are delinquent upon the following described stock, on account of assessment levied on the 7th day of November, 1872, the several amounts set opposite the names of the respective shareholders, as follows:

Names.	No. Certificate.	No. Shares.	Amount.
Dean, T R	4	5000	$1250
McDonald, D L	9	100	25
McDonald, D L	11	100	25
McDonald, D L	38	2500	625 00

And in accordance with law, and an order of the Board of Trustees, made on the 7th day of November, 1872, so many shares of each parcel of said stock as may be necessary, will be sold at public auction, at the office of the Company, No. 45 Montgomery street, San Francisco, Cal., on the 6th day of January, 1873, at the hour of 2 o'clock P. M. of said day, to pay said delinquent assessment thereon, together with costs of advertising and expenses of sale.

FRANK SWIFT, Secretary.

Office, No. 415 Montgomery street, San Francisco, Cal. de21-3t

Piermont Milling and Mining Company—Location of works, Piermont Mining District, White Pine County, Nevada.

NOTICE is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 21st day of November, A. D., 1872, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary at the office of said Company. Any stock upon which said assessment shall remain unpaid on Monday, the 30th day of December, A. D., 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Friday, the 24th day of January, A. D., 1873, at the office of said Company, at the hour of 2 P. M., to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. W. CLARK, Secretary.

Office, 418 California street, San Francisco. n28-4t

Quail Hill Mining and Water Company—Location of works, Calaveras County, California.

Notice is hereby given that at a meeting of the Board of Trustees of said Company, held on the 4th day of December, 1872, an assessment of ten dollars per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, No. 438 California street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on the 14th day of January, 1873, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Tuesday, the 4th day of February, 1873, to pay the delinquent assessment, together with the costs of advertising and expenses of sale. By order of the Board of Trustees. T. F. CRONISE, Secretary

Office, 438 California street, up stairs, San Francisco, California. de 14

San Francisco Co-operative Land and Building Association.

Notice is hereby given, that the following specified shares of stock in said Association have been, by resolution duly adopted by the Board of Directors, declared forfeited for non payment of instalments due and delinquent thereon, respectively as specified, to wit:

Names.	No. Shares.	Amount.
John Bray	4	$32 00
Donald Bruce	12	96 00
T Baldwin	10	60 00
Z Birdsall	10	70 00
George F Coffin	10	80 00
A C Diggins	1	11 00
D O Field	10	80 00
William Huelner	2	20 00
T F Hudson	5	55 00
James Heron	25	175 00
Thomas S. Hager	5	45 00
Charles S Healey	10	90 00
C C Keene	4	40 00
L Kaplan	5	30 00
M Levy	2	20 00
E E Morton	10	60 00
J F McDonald	5	60 00
J B McIntyre	2	22 00
P Plank, Jr	3	36 00
F A Ronleau	10	110 00
L F Rowell	10	70 00
J L Smith	25	175 00
W H Woodward	5	45 00
Charles W Banks	5	25 00
H Kenitzer	5	30 00
Chas A Story	5	25 00
Jos. Silva	2	10 00
W H Wright	10	60 00

The above designated shares will be sold at auction, to the highest and best bidder, for cash, at the office of the Secretary, No. 306 Montgomery street, San Francisco, on Saturday, the 4th day of January, A. D. 1873, at 12 o'clock, noon, unless the sums due thereon, as above specified, together with fines due thereon, and all expenses and charges of sale, are previously paid. By order of the Board of Directors.

H. B. CONGDON, Secretary.

San Francisco, December 13, 1872. 4t

Spring Mountain Tunnel Company—Location of works, Lincoln County, Nevada.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 17th day of December, 1872, an assessment of twenty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary. Any stock upon which said assessment shall remain unpaid on the 25th day of January, 1873, shall be deemed delinquent, and will be duly advertised for sale, at public auction, and unless payment shall be made before, will be sold on Monday, the 17th day of February, 1873, to pay the delinquent assessment together with costs of advertising and expenses of sale. By order of the Board of Trustees.

J. M. BUFFINGTON, Secretary.

Office, 37 New Merchant's Exchange, California street, San Francisco. de21

Office of the San Francisco Co-operative Printing Company, 412 Commercial street, San Francisco, Cal., December 4, 1872.

In accordance with a resolution of the Board of Trustees of the San Francisco Co-operative Printing Co., held this day, a special meeting of the Stockholders of said Company is hereby called, the same to be held at the office of the Company, on Wednesday January 8th, 1873, at 12 o'clock M., to take into consideration the propriety of increasing the capital stock of said Company from ten thousand dollars, divided into one hundred shares of one hundred dollars each, the present capital stock, to forty thousand dollars, divided into two hundred shares of two hundred dollars each.

PETER COOK,
JOHN KANE,
R. A. JAMES,
A. T. WARREN,
B. H. DALY,
Trustees.

de7-1t

U. S. Grant Mining Company—Location of works, Carlisle, Nevada County, Cal.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 19th day of November, 1872, an assessment of fifty cents per share was levied upon the capital stock of said Company, payable immediately in United States gold and silver coin, to the Secretary, at the office of the Company, 326 Clay street, San Francisco.

Any stock upon which said assessment shall remain unpaid on the 30th day of December, 1872, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 20th day of January, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

ENOS TAYLOR, Secretary.

Office, 226 Clay street, San Francisco, Cal. n23

Virginia Consolidated Mining Company—Location of mines: Kearsage Mining District, Inyo County, State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 11th day of December, 1872, an assessment of two cents per share was levied upon the capital stock of said Company, payable immediately in United States gold coin, to the Secretary, at the office of the Company, 318 California street San Francisco. Any stock upon which said assessment shall remain unpaid on the 20th day of January, 1873, shall be deemed delinquent and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 10th day of February, 1873 to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

T. B. WINGARD, Secretary.

Office, No. 318 California street, San Francisco, Room No 13, third floor. de14-1m

Yule Gravel Mining Company—Location of works Viola Claims, Township No. 3, Placer County State of California.

Notice is hereby given, that at a meeting of the Board of Trustees of said Company, held on the 18th day of December, 1872, an assessment of twenty cents (20 c.) per share was levied upon the capital stock of said company, payable immediately in United States gold coin, to the Secretary, at the office of the company, Room 5 and 6, No. 302 Montgomery street, San Francisco, Cal. Any stock upon which said assessment shall remain unpaid on Saturday, the 18th day of January, 1873, shall be deemed delinquent, and will be duly advertised for sale at public auction, and unless payment shall be made before, will be sold on Monday, the 10th day of February, 1873, to pay the delinquent assessment, together with costs of advertising and expenses of sale. By order of the Board of Trustees.

WM. H. WATSON, Secretary.

Office, Room 5 and 6, No. 302 Montgomery street, San Francisco, Cal. de21

PROPOSALS

For Material and Work

FOR A PORTION OF THE

New City Hall Building.

OFFICE OF BOARD OF CITY HALL COMMISSIONERS,
SAN FRANCISCO, November 25, 1871.

SEALED PROPOSALS FOR FURNISHING CERtain material for a portion of the New City Hall Building and Hall of Records and for the construction thereof, will be received at the office of the Board of City Hall Commissioners, corner of McAllister and Leavenworth streets, until 12 o'clock M. of FRIDAY, the 27th day of December, A. D. 1872, except for Iron Works, and for that, until 12 o'clock M. of FRIDAY, the 24th day of January, A. D. 1873, viz:

10,000,000 Brick;
5,000 Barrels Lime;
5,000 Barrels Cement;

Stone for Facing of Basement Story and Building the same in the Walls, etc;
Rolled Iron Joists;
Iron Girders and Columns;
Building Brick in the Walls, etc., including Bonding, Anchors, etc;
Building Brick Facing of Basement Story;
Fixing, Fitting and Laying Iron Joists and Girders.

All according to the Printed Specifications, Schedule, etc., and Plans and Drawings.

The Printed Specifications and Printed Forms of Proposal can be had on application to the Secretary, and the Plans and Drawings can be seen, and all further information—as to the details of the work, etc.—can be obtained from the Architect, at the office of the Board.

The Bids must be endorsed for the Material proposed to be furnished or Work done, and addressed to the Secretary of the Board.

No Bids will be entertained unless made on the specified "Printed Forms of Proposal," and accompanied by a certified check, or bond with two good and sufficient sureties, in a sum equal to 10 per cent. of the total sum of the tender, to be returned on the due entering into the contract of the party to whom it may be awarded, or to be forfeited, if the party fail to enter into the said contract.

Each bidder for Brick will state what quantity he will furnish within one year, and at what times he will deliver them. Samples must accompany each bid.

The Board reserve the right to reject any or all bids.

Payments will be made monthly in "City Hall Warrants," of 75 per cent. of estimated amounts due, and the remaining 25 per cent. when the contract is completed.

P. H. CANAVAN,
JOS. G. EASTLAND,
CHAS. E. McLANE,
Board of City Hall Commissioners.

no30-1m

NOTICE OF POSTPONEMENT.

The time for receiving bids advertised to be received December 27th, is hereby extended to JANUARY 10th, except for Cement, which is extended to January 24, 1873.

P. H. CANAVAN,
JOS. G. EASTLAND,
CHAS. E. McLANE,
Board of City Hall Commissioners.

dc28-3t

MAGAZINES.	P. An.
Harper's	$4 00
Atlantic	
Godey	
New York Ledger	
Blackwood	3 00
Hours at Home	
Good Words	
Peterson's	
Arthur	
Lady's Friend	
Harper's Weekly	5 00
Chimney Corner	
Literary Album	
London Society	6 00
All the Year Round	
London Ill. News	15 00

W. E. LOOMIS,
News Dealer
AND STATIONER,
S. E. corner of Sansome and Washington streets,
SUPPLIES ALL
Eastern Perodicals,
BY THE
Year, Month, or Number

Betts's Capsule Patents.

To prevent infringements, notice is hereby given, that *Betts's name is on every Capsule he makes for the principal merchants in England and France,* thus enabling vendor, purchaser, and consumer not only to identify the genuineness of the capsule, but likewise the contents of the vessel to which it is applied.

The LORD CHANCELLOR, in his judgment, said that the capsules are not used merely for the purpose of the ornament, but that they are serviceable in protecting the wine from injury, and insuring its genuineness.

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Machinists and Foundries.

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IRA P. RANKIN, A. P. BRAYTON,
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Steam Engines and Boilers,

MARINE AND STATIONARY,

IRON AND BRASS CASTINGS

Mining Machinery of Every Desoription,

And all other classes of work generally done at first-class establishments, manufactured by us at the lowest prices, and of the best quality.

☞ Particular attention paid to Johbing Work and Repairs.

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18v20-3m GODDARD & CO.

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Foundry and Iron Works.

HINCKLEY & CO.,

MANUFACTURERS OF

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Quartz, Flour and Saw Mills,

nyes' Improved Steam Pump, Brodie's Improved Crusher, Mining Pumps, Amalgamators, and all kinds of Machinery.

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MACHINE WORKS,

109 and 111 Mission Street,

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These Works have lately been increased, by additional Tools, and we are now able to turn out any kind of work, equal to and cheaper than any establishment in the State; that is to say:—

STEAM ENGINES,
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QUARTZ MACHINERY
Printing Presses,

AND MACHINERY MADE OF EVERY DESCRIPTION.

Improved Safety Store Hoists,

Fitted with Cutting's Patent Cams, unequaled for safety, convenience and cheapness. This Hoist can be built for about half the price of any other in use. To be seen at MAWLEY & CO.'S.

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Dunbar's Patent Self-Adjusting Steam Piston

PACKING, for new and old Cylinders.

And all kinds of Mining Machinery.

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PACIFIC
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RAILROAD AND OTHER IRON
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Every Variety of Shafting,

Embracing ALL SIZES of

Steamboat Shafts, Cranks, Piston and Connecting Rods, Car and Locomotive Axles and Frames

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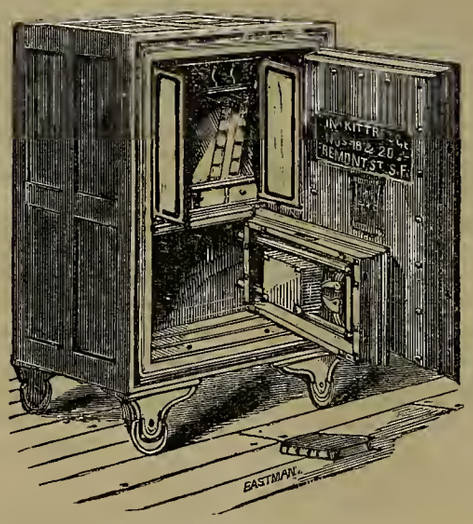

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Wrought Iron Girders,
Prison Cells,
Bank Vaults, and
Bank Locks.

A LARGE ASSORTMENT OF SAFES OF ALL KINDS CONSTANTLY ON HAND.

ALL KINDS OF HOUSE SMITH WORK, FIRE-PROOF SAFES, MONITOR SAFES, FIRE AND BURGLAR-PROOF SAFES.

JONATHAN KITTREDGE,

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Send for Descriptive Circulars and Price List. 7v4-1am5mhp

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Marine, Locomotive and Stationary Engines Quartz Crushing and Amalgamating Machines, Mill Irons and Brass and Iron Castings, of every description, made to order.

Steamboat Repairing, Boiler Making, Turning and Finishing,

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A complete set of Machinery of our own design and patent for extracting oil from Castor Bean, dispensing with Hair Cloth. Also Machinery for Flax Sood Oil, Mustard Seed Oil, and Sun Flower Seed Oil.

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PRESCOTT, SCHEIDELL & CO.,
MARYSVILLE FOUNDRY.

Corner of B and Fourth streets, Marysville, Cal.

MANUFACTURERS OF

STEAM ENGINES,

STATIONARY AND PORTABLE

SAW AND GRIST MILLS,

Hydraulic Machinery,

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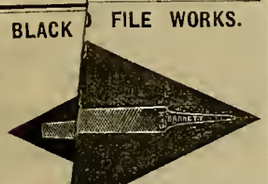

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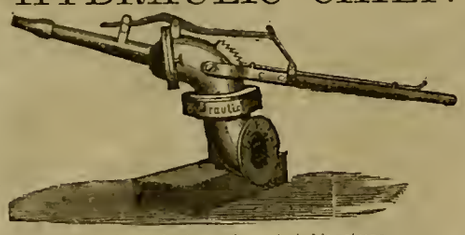

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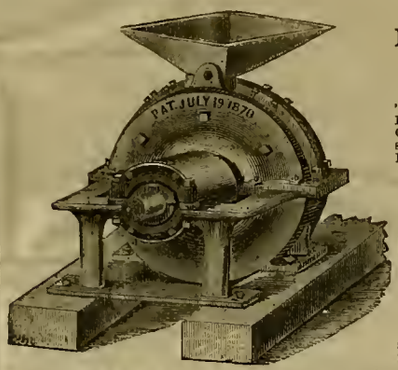

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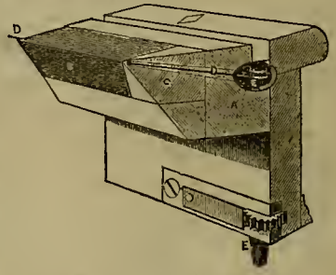

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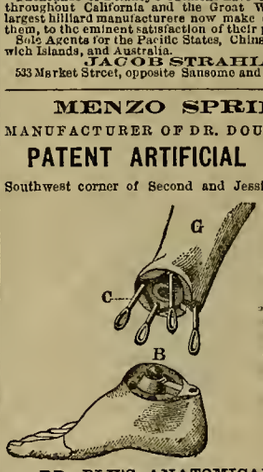

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INDEX
VOLUME XXV
MINING AND Scientific Press. 1872.

A

Abelnthe..... 343
Academy of Sciences, 9, 41, 49, 81, 120, 152, 180, 232, 278, 289, 322, 364, 393.
Adulteration of Chemicals 182
*Agassiz 129, 145, 152, 200, 201, 262, 265
Air and Health..... 135
Air, Compressed, as Motor 3
Albumen Charcoal..... 167
Alcohol in Wines..... 39
Alcohol..... 247
Alcohol and Exercise..... 149
Alloys..... 10, 193
*Almond Culture..... 321
Alpine County Mines..... 140
Alpine Mines & Metallurgist..... 3
Amador Mine..... 38
Amador County Mines... 38
Amalgam..... 147
Amalgam Cleaning..... 305
Amalgamator, A New..... 92
Amalgamator, Eureka.... 2
*Animal Kingdom, History of..... 262, 265
Animals, Locomotion of.. 195
*Animalculæ in the Mouth 54
Antimony..... 42
*Ants at Home..... 393
*Ant Lion..... 390
Anvils..... 7, 198
Aphasia..... 87
Apothecaries, Duties of.. 179
Appetite, Instinct of..... 71
Apples..... 23
Architecture..... 83, 115
Arizona Apaches..... 17
*Army Worms..... 217
Arsenic..... 71, 327, 359
Asparagus..... 71
Assaying in the Field.... 150
Assay of Quicksilver. 81, 131, 238
Assessments, See Mining Law.
Assessment Notices..... 150
Astronomical Research... 83
Asthma..... 295
Athletes, Caution to..... 375
Atlantic, The Bottom of the..... 403
Auroras..... 19
Australian Forest Trees.. 70, 119
Axle & Hub, Bargion's 233, 252
Axletrees, To Repair..... 179

B

Backs and Seats..... 7
Balloons..... 37
Bathing..... 23
Barometric Pressure..211, 364
Beards..... 291
Beds..... 327, 364
Bees, Sting of..... 199, 375
*Bee, The Carpenter..... 322
Bee Hive, a Monster..... 310
Belt and Shafting..... 195
Bells, Rubber vs. Leather 99, 327, 355
Beet Sugar..... 369
Bisulphide of Carbon..275, 374
Blasting Powder, See Giant Powder and...2, 65, 278
Blood as Food..... 103
Blowpipe Analysis..... 190
*Blowpipe, Dozier's..... 221
Blue Gravel Mine..... 9
*Bluestone Mixer, Best's... 263
Blushing..... 263
Boiler Explosions. 163, 175, 243
Boiler Iron..... 130
Boiler Plates..... 131
Boiler Sediment..... 172, 371
Boilers, Steel..... 322
Boilers, Testing..... 233
Book Notices...21, 88, 280, 296
Books, New..... 409
Borate of Manganese..... 231
Boring for Science..... 243
Boston Fire..... 305, 359, 387
Bread, from Wood..... 351
Breathing..... 342
*Brick Kiln, Hawley's..... 102
Bridge, An Immense..... 61
*Bridge Architecture, Indian..... 195
Bridging Joists..... 167
Bruises and Sprains..... 247
*Brush-making Machine.. 343
Buildings, Fireproof..... 343
Building Materials 291, 339, 371, 337.
Bullion Product..8, 18, 44, 92
*Burmah, Geology of..... 33
*Burmah, Mines of..... 206
*Burner, Improved Vapor 401
Butte County Mines..306, 309

C

Cable, Atlantic..... 306
Calaveras Co. Mines..... 312
California..... 396
*Camp Floyd Dist. 337, 343, 378
*Canal Boat Propulsion 49, 193
*Candlestick, Miners' Society..... 290
*Cape Horn..... 217
Capital Stock, Increase of, 12
57, 76, 124, 137, 200, 252, 296
Capital, Waiting for..... 206
Carbolic Acid..... 3, 184, 279
*Car Brake Canfield's.... 137
*Car Coupler, Disney's... 395
Car, Mammoth..... 19
Car Starter..... 311
*Car, Thompson's Tunnel. 401
Car Wheels, Paper..... 259, 339
Caribou Mine and Works. 346
Cargoes, Storage of..... 171
Carriages To Preserve..151, 375
Carriage, Novel..... 137
Case Hardening..... 227
Cave in Crown Point Mine 58
Cedarburg Mine..... 179
Celery as a Nervine..... 179
Cement, Waterproof..23, 167, 346
Centennial Exhibition... 282, 392.
Cerasine..... 179
Chasms, Stretching of.... 19
Charcoal Iron..... 13
Cherry Creek Mines..... 114
Children, To Raise..... 311
Chimneys, Smoky..... 166
Chloroform..... 327
Cholar-Potosi M. Co..... 25
Christmas..... 385
Cigar Manufacture in S.F. 140
Clark M. Dist..... 314
Climate, Changes of, 119, 243, 279, 359
Coal and Iron....104, 234, 330
Coal, Economy in..... 167
Coal in California...38, 169, 296, 318
Coal in England....93, 2 0, 298
Coal Fields of Oregon.... 370
Coal Market—Discoveries at Santa Rosa..... 402
Coal Oil Lamps..... 213
Coast Survey, Work of.... 268
Cocoa..... 247
Coffee..... 54, 247, 250, 327
Colors and Health..... 151
Colorado Mines. 106, 214, 278, 346
*Combustion..... 135
Comets..... 35, 83, 122
Comet, Biela's..... 357
Comet, Plantamour's..... 122
Compost, Straw..... 154
Comprehension, Power of 375
*Comstock Lode (See Washoe Mines.)
Commercial Reporting... 290

—*Illustrated.

Conchological Fauna of U. S..... 232
Concrete..... 3, 184
Condor Mill..... 326
Consumption, To Treat... 343
Cold Weather and Warm Blood..... 407
Cooking..... 181
Cope District..... 136
Copper on Pacific Coast 40
Copper Process of Motay 90-118
Copper, Price of...56, 120, 268
Corns, Cure for..... 279
Corrosion of Gauge Glasses..... 264, 329
Cotton in California 89, 204, 298
*Cotton Pest..... 83
Counterpoise..... 35
Crown Point Mine..... 390
Coy Hill Mines..... 51
Crystallization..... 35
Cundurango..... 247
Curves, Novel..... 87
Cyclones..... 355
Cylinders, Cracked..... 403
Cylinder Head, Wooden.. 326

D

Dentistry..... 39, 179
Derrick, A Monster..... 371
*Diamonds..89, 97, 113, 137, 151 162, 210, 374
Diamond, Burning the.... 83
*Diamond fields, Map of. 153
Diamonds on Pacific Coast 72
Diet..... 98, 121, 152, 274, 316, 344, 357, 360, 377, 380, 389.
Diamond as Cutting Instrument..... 339
Dinners, How to Give Them..... 106
Dirt..... 154
Disease, Modern Idea of. 359
Disinfectants, Value of... 375
Ditch Enterprise..... 57
Dividends & Assessments, See Stock Market and.... 49
*Door Fastener..... 41
Dream, A Cat's..... 391
Dredging on Ocean Bars.. 243
Drill, Blatchley's..... 94
Drilling Machine..... 17
Drinks in Summer.....10, 42
Drugging..... 39
Dunderberg Mine..... 154
Dust Explosions in Flour Mills..... 275
Dust, Prevalence of..... 311
Dysentery..... 359
Dyspepsia, Cure of..... 199

E

Ear, The Human..... 247
Ear, Photography of..... 227
Earache..... 167
Earthquakes..... 103, 232, 371
Easters, Great..... 231
Eating, Science of..... 151
Echoes..... 71
Education and Health.... 359
Eggs..... 10, 26
Electric Waves..... 115
Electricity..... 3, 151, 323
Electricity, Firing Mines by..... 246
Elevator, Martin's..... 348
Ely District Mines, See Mining Summary and.. 9, 130, 264, 312, 314
Embalming..... 23
Emma Mining Suit..... 72
*Engine, Hoadley's..... 263
*Engine, Lane & Co..... 396
Engineering Incidents.... 147
Engraving by Sunlight.. 131
Eucalyptus, (See Australian Forest Trees.)
Eureka District Mines. 50, 174 194, 209, 246, 253, 264, 265, 294
Eureka Cons. M. Co..... 266
Eureka Mine..... 294
Evaporation..... 295
Excavator..... 220
Excavating Under Water 243
Experiments in Fuel..... 409
Experts, A Jury of..... 241
Eyes, Coloring..... 391
Eyes, Influence of Light on..... 247
Eye, Photography of..... 227

F

Fat, To grow..... 179
Fatigue..... 343
Feet in Winter..... 343
Felons..... 151
Fermentation, Theory of 67, 83
Fermented Liquids..... 247
Fevers and Sewers..... 7
Fever and Ague.....311, 375
Fever, Ague or Intermittent..... 407
Fever, Sweating in..... 119
Figs and Bread..... 42
*Filter, Reversible..... 241
Fire Damp from Anthracite..... 49
Fish, California.....56, 341
Fish, Color in..... 275
Fish, Do They Think.... 247
Fish Culture, Lecture by Livingstone, A. M.... 406
Flannels, Washing..... 394
Flea Seeds..... 167
Fleas, To Get rid of..... 375
Flooring, Painting..... 167
Fly, The African..... 103
Food.....103, 202, 263 295, 343
Food, Preservation of..... 179
Fossils..... 6, 332
Foundries, 41, 180, 216, 228, 312, 328.
Freight, Reduction in.... 264
Friction..... 23
Fruit Canning.....154, 166, 178
Fruit Juices..... 167
*Fruit Trees, Budding.... 134
Fruit Tree Pests..... 180
Fruits, Use of..... 23
Fuel in Eureka Dist..... 50
Fuel, Liquid.....35, 51, 99, 353
Fuel, Pulverized.....140, 232
*Furnace, Bassels..... 80
Furnace Blast.....35, 80, 211
Furnace, Dank's.....19, 83
*Furnace, Steven's..... 353

G

Galvanic Batteries..... 35
Gas.....71, 175
Gastric Juice and Calomel 87
Gems, Color of..... 195 374
*Geology of Coast..... 9, 25
Geological Inquiry..... 67
Giant Powder 2, 57, 66, 234, 311, 361.
*Gilman D. O. of University of Cal..... 289
*Gimlet Vendiuct..... 209
Ginseng..... 122
Glass, Action of Light on. 355
Glass, Drilling..... 83
Glass, Soluble, as Detergent..... 259
Glass Works in S. F..... 198
Glue..... 23
Glycerine..... 119, 259
*Goat Island..... 361
Golconda Dist..... 234
Gold Hunting in Colombia 402
Gold Productions of World 92, 114.
Gold Reduction 194, 200, 210, 220, 242, 266, 274.
Golden Sands of Oregon.. 370
Good Health 10, 23, 39, 167 179, 279.
Grain Without Granaries. 230
Grass Valley of To-Day... 402
Great Basin, Topography of..... 274, 360
*Greeley, Horace..... 360
Grindstones..... 39
*Growing Plants from Cuttings..... 401
Gun, Bessemer's..... 180

H

Hair.....90, 215, 307, 343
Hands, Chapped..... 375
Harness, To Oil..... 279
Hassler Expedition....196, 153
Heat, Utilizing..... 181
Heating Machine..... 23
Hercules Powder..... 98
Hereditary Influences.... 103
Home Industries, (see Foundries.)
Honey, Chemistry of..... 295
Hops, Extract of..... 359, 361
Hope Gravel Mine..... 104
Horse Disease.....296, 329, 353
Houses, Inside of..... 58
Housekeeping..... 230
Household Receipts 19, 26, 42, 58, 74, 87, 90, 122, 154, 202.
Humboldt Divide..... 9
Hydro-electric Cables..... 83
Hydroscopy.....175, 247

I

Ice Works in Nevada..... 294
Idaho..... 58
Idaho Mines..... 154
Ilsemannite..... 87
Indian Relics..... 334
Infants, Care of..... 231
Influences, Mysterious.... 179
Ink Plant..... 267
Insects, Cures, Novel..... 87
Instinct..... 163
Intemperance..... 55
Invention, Benefit of..... 214
Iron Amalgam, Cleaning of..... 305
Iron Amalgam..... 141
Iron, American....35, 99, 275
Iron, Boiler..... 130
Iron Buildings.....67, 307
Iron and Oxygen..... 103
Iron, Cohesion of..... 387
Iron Contracts on Mint.... 76
Iron, Combustibility of.... 163
215.
Iron, crystallization of ... 147
Iron in England.....67, 275
Iron Industry Statistics.... 215
Iron, Influence of Cold on 93, 211.
Iron, Mending Ships..... 354
Iron Manufacture, 35, 259, 290, 311.
Iron, Nev-Silicon..... 403
Iron on Pacific Coast, 41, 48, 343.
Iron Sands..... 41, 48
Iron, Structure of..... 323
Iron, Tensile Strength of. 387
Iron Work at Sacramento 394
Iron and Steel....211, 291, 323
Iron vs Steel..... 83
Iron Tubes, Wrought.... 371

J

Japanese Fireworks..... 231
Japanese Progress, 189, Japanese Minerals and Mining..... 401
225, 290, 330, 260.
Judd & Croshy's Works ... 226, 250.
Jute..... 390

K

Kedgeree..... 122
Kern County Mines 173, 242, 326, 394.
Knowledge, Field of..... 355

L

*Lactometer..... 374
*Lamp, Boesch's..... 263
Lamp, for Use at Sea..... 259
Lamp, Alloy of..... 371
Lead Ore..... 330
Lead Pencils..... 23
Lead Pipes, Joining Ends of..... 231
Lead Veins of Illinois..... 217
Leather Market, See 12th Page Weekly.
Lemon Mill..... 226
Lida Valley Mines..... 246
Lightning Rods..... 231
Lightning and Trees...135, 275
Lime a Preserver of Wood 295
*Limestone Formations 246, 358.
Liquids, Speroldal State.. 291
Lob tere..... 55
*Lock, Magnetic..... 54
Locomotives, Compound.. 54
*Locomotive, Fireless..... 225
Locomotive Power..... 32
Longitude of S. F..... 104
Los Angeles Mine..... 290
Lower California Mines.. 290 396.

M

Machinery, Advantage of 19, 360.
Magnet, Artificial..... 34
*Malva Trees..... 198
Management of Mining Co's. (See Mining Co's.)
Manufactures, Encourage Local..... 307
Manufactures in U. S. 38, 243, 282, 294, 355.
Manufacturing Village, a Model..... 282
Mechanic Arts, Science 284, 335
Mechanical Skill in China 215
Mechanical Progress 19, 211, 343.
Medals at State Fair..... 316
Medicines, Patent..... 7
Meetings and Elections 12, 21, 44, 57, 76, 103, 124, 136, 172, 220, 252, 263, 300, 309, 325, 348, 380, 388.
Mental Capacity 182
204, 347, 375
Mercury in Human System..... 39
Mesmerism, Hindoo..... 167
Metals, Homogeneouse.... 99
Metal Market, See 12th Page Weekly.
Metal Paper Hangings.... 339
Metal Work, Art in..... 23
Metallic Boots in..... 23
Metallic Staples of Pacific Coast..... 358
Metallurgical Processes, 18, 56, 66, 90, 101, 106, 118, 170, 181, 194, 210, 230, 242, 266, 274, 294, 305, 323, 353, 377.
Meteors..... 53
Meteoric Iron.....67, 115, 243
Meteorological Theory, New..... 387
Melenrology of San Joaquin..... 18
Metra, The French..... 391
Mexican mines.....268, 312
Military System, Cost of.. 266
Mill, a New Quartz..... 346
Mills Barn..... 60, 156, 172, 200, 353,
*Mill, The Lightning..... 65
*Mills, Wet and Dry Crushers..... 377
*Milton, Persevering..... 342
*Mineral Hill mines 34, 242
Mineralogy, Determinative..... 64
Mineralogical Museum.. 274
Mineral Land, Survey of.. 342
Mineral Produc's of Turkistan..... 106
Mineral Resources of N. W. California..... 354
Miners Life and Death.... 330
Mines, Government Aid to 161
Mine, Peculiar Formation in..... 362
Mines and Railroads..... 161
Mine Ventilator..... 163
Mining Accidents 37, 60, 85, 149, 190, 284, 348, 358.
Mining Company's Management..... 322, 338
Mining Company's Reports..... 25
Mining in Central Asia.... 106
Mining, Co-operative..... 406
Mining, Deep..... 396
Mining Discoveries 12, 57, 65, 88, 156, 201, 209, 217, 232, 316.
Mining Engineers, Institute of..... 321
Mining Incorporations 41, 206 361.
Mining Law 6, 156, 266, 273, 342 361, 362.
Mining Law of New Code 361, 362.
Mining Law of 1872 and Regulations Thereunder 60, 74, 86, 104, 118, 134, 232.
Mining Law, English.... 118
Mining Machinery 118, 260, 361.
Mining Sales..... 12
25, 44, 57, 73, 89, 100, 156, 244, 300, 305, 360.
Mining Schools..... 210
Mining Situation.....192, 264
Mining Stock Market, See 5th page, weekly.
Mining, Snecessful..... 315
Mining Summary, See 9th page Weekly.
Mining Timbers..... 214
Mining Tunnels [See Tunnels]..... 182
Mint, S. F.....8, 72, 329
Mirage, Artificial..... 211
Mississippi River..... 39
Monday as Pay Day 3, 278
Monkeye, Intelligence of 131
Montana Mines..... 154
Moonlight Reflections.... 327
Morphine, Use of..... 215
Mortality in S. F..... 327
Mosquitoes, To Destroy 87, 199
Mosses and Ferns..... 58
Motion, Curiosities of.... 311
Mount Lincoln Silver Mines..... 370
Mud, Remedial..... 311
Music, Expression..... 231
Mushrooms..... 74, 250
Musical Notes..... 19, 227
Mussels..... 55

N

Napa, Salubrity of..... 119
Narrow Gauge. 39, 162, 184, 268 274, 278, 298
Natural History..195, 262, 265
Nautical Inventions..... 307
Needle, Variations of..... 289
Nerves, Death by..... 179
Nevada County Mines..... 226 308, 394.
Nevada Soda Company... 134
Niagara River..... 89
Nickel Mine..... 345
Nickel Plating..... 227
Nickel ine..... 259
North Bloomfield Mines.. 374
North Star Mine..... 214
Notes of Travel...34, 50, 66, 82 98, 114, 130, 146, 147, 174, 226, 248.
Notices to Correspondents 24 40
*Nozzle for Hose..... 232

O

Oat Meal..... 394
Observatory in the Sierras..... 97, 120, 154
Observations of A. P. 2, 106, 258
Odors..... 103
Oil, Cocoanut..... 7
Oil, Ignition of..... 39
Oil, Linseed..... 71
Oil on Pacific Coast..... 362
Oil Regions, Phenomena in..... 114
Oil Stones..... 167
Onions..... 26
Old Age..... 263, 279
*Olive, Branch of..... 406
Ores, Bidders for Our.... 294
Ores, [See Metallurgical Process.] 231
Oregon Mines..... 394
Ostrich Farms..... 263
Ought Shingle Roofs to be Painted..... 407
Our Mining Interests, The Vulture of..... 402
Owens River Freight..... 9
Oxygen as Stimulant..... 99, 211
Oysters..... 247, 295
Ozone.....67, 99, 115

P

Pacific Coast and San Francisco..... 54
Pacific Mail S. S. Co.....266, 396
Pacific Ocean..... 51
Paint..... 23, 119, 179, 375
Paper at Boston Fire..... 359
Paper Plating for Ships.. 131
Parrots Cove..... 23
Parley's Park Mines..... 194
Patchouly..... 295
Patents, British 232, 2.2
Patents, Commissioner's Decisions in..28, 60, 3.2, 364
Patents in Canada..... 198
Patents in Germany..... 161
Patents in Japan..... 371
Patents for Mines..... 44
Patents, Official Notice About..... 60
Patents for Pacific Coast Inventors..... 282
Pavements in S. F..... 348
Paul's Process.....101, 193
*Pear, A Double..... 230
Pearls in Oysters..... 87
Peat.....210, 259
*Pencil Sharpener..... 38
Phosphate Candy..... 151
Phosphor Bronze..... 291
Phosphorus in Coal..... 115
Phosphorescence..... 231
Photographers' Materials 342
Physical Development..... 7
Pickles.....38, 106
Pigment for Iron..... 3
Pile Driving, New Method 115
Pine Trees as Medicinal Agts 231
Placer Mines 2, 18, 38, 40, 56, 57 104, 216, 346, 374, 378, 386.
Placer County Mines..234, 330
Planchas de Plata Mine.... 218
Plan Quicksilver Growth 369
Plants, Growth of..... 19
Plants, Odor of..... 99
Plow, A Large Snow..... 326
*Plow, Sewell's Snow.... 268
*Poppy, the California 409
Postal Telegraphy....179, 218
Pot-toes..... 10, 58
Pottery in California..... 358
Power, Tide..... 211
Power, Transmission of.. 195
Practical Men..... 234
Pre-Historic Remains in Aleutian Islands..... 306
*Primrose, California.... 6
Prudrlithe..... 278
Pulse, Photographing the 227
Pulverizer, Whelpley & Storer's..... 140, 292
*Pump, Blake's Steam.... 181
*Pump, Eureka..... 57
*Pump, Goodwin's 65, 173, 284
*Pump, People's..... 209
Pyro-Silver..... 115

Q

Quicksilver Assay..81, 131, 268
Quicksilver.....8, 278, 338, 354
*Quicksilver Elevator..81, 169
Quicksilver in Nevada..... 351
Quinine..... 39

R

Rabbit Hair..... 339
Rails, English..... 3
Rails, Steel vs Iron..... 3, 387
Rails, Wear of..... 371
Railroads on the Coast. 328, 358
*Rail and Chair, Expansion..... 335
Railroad Gauge [See Narrow Gauge.]
Railroads and Mines..161, 310
Railroads in the Mountains 339
*Railroad, Portable.....99, 313
Railroads in Peru..... 57
Railroad Timber..... 214
Railroad, San Diego..... 338
Railroad Speed..... 81
Railroad, Underground.. 311
Railroads in Utah. ..246, 389
Raule..... 3 0
Redwood, Black Heart 375
*Reis Holder..... 2.9, 306
Retrospect, A Mining 408
Rheumatism.....231, 359
Rice..... 74
Richmond Cons. M. Co. 306 328
*Rifle, Remington's..... 54
Rifle Shooting..... 215
Roads, Making..... 391
Robinson M District..... 114
Rocks, Contortion of..... 98
*Roofing.....184, 201, 23
Rubber..... 7, 23
Rubber Cement..... 24
Ruby Cons. Works..... 198
*Ruby, Stanton's.....360, 368

S

Salt..... 167
San Bernardiuo Co. Mines 354
Sands, Golden..... 370
Sandstone, Formation of. 323
San Juan Country..... 346
Santa Barbara Mines..2, 3
*Saw, Footpower Circular 161
Saws, To File..... 135
*Sawing Machine, Weavr's 121
Sawing Wood Without a Saw..... 71
*Scale Insects..... 310
*Schell Creek Mines...95, 120 164, 264.
Science Associations..... 175
Science, Future of..... 387
*Science, Grains of...274, 3.9
Science, Schools of..... 370
Scientific and Mechanical Possibilities..... 403
Scientific Expedition.... 390
Scientist, True and Real.. 243
*Scott, Thomas A..... 129
Screw Propeller..... 311
Sea, Bottom of..... 254
Sea Serpents..... 323
Selenitic Mortar..... 307
Sewers..... 7
Sewing Machine Motor, Hyde's..... 241
Sewing Machine Motor, Manlief's..... 348
Shad, Hatching...252, 390
Shell, Working in..... 167
Shingles, Durability of... 167
Ship Building on Pacific Coast..... 374
Ships, Mending Iron..... 275
Ship, Wooden..... 275
Signal Service Bureau.... 58
Silica..... 308, 394.
Silicate of Soda..... 323
Silicon Steel..... 24
Silk..... 25
Silk Worms..... 227
Silver, Philharmonic..... 291
Silver Mines of Peru..... 16
Silver, Separation from Copper..... 118
Silver Zone District..... 18
Size..... 263
Skin Grafting..... 87
Skunk Bite..... 71
Slate and Marble..... 259
Sleep in Antarctic Weather 199
Sleep and Dreams.....55, 295
Sleep as Stimulant.....279, 359
Small Pox...7, 23, 55, 71, 87, 279
Smelting...18, 35, 80, 170, 173 194, 226, 378, 396.
Smelting Ores, Buyers of. 294
Smoke on Steamers. 3, 115, 163
*Smoky Chimneys..... 166
Soap Bubbles..... 24
Soda in Nevada..... 134
Solar Corona..... 355
Soldering Fluids..... 67
Sounds, Recording..... 167
Sound in Water..... 227
Spectacles.....179, 327
Spectroscope..... 275
Spectrum Lines.....19, 355
Spectrum of Zodiacal Light..... 3, 131
Spent Balls..... 391
Stamp Duties..... 18
Stanford's Pat't Extens'n 168
Stars, Binary..... 211
Star Density..... 19
Star District, Utah..... 98
Stars, Distribution of..... 131
Stars, The Missing..... 323
State Fair.....163, 201, 236, 286, 316
*Steam on Canals..... 193
Steam and Civilization.... 247
Steam in Pickle Moods.... 23
Steam in Mines..... 275
*Steam Plowing....73, 194, 225
Steam Rammers..... 211
Steel Boilers..... 24
Steel, Condensing Liquid. 83
Steel, Cooling..... 23
Steel, Making. 19, 24, 275, 320, 387
Steel Rails..... 151
Sterility and Depletion... 151
*Stone, Ransome's..... 9
Stone, Decisions in..... 38
Stone, Union Co's..... 268
Stoves, Putting up..... 410
*Street Railroads, Steam on..... 225
Sugar, Adulteration of... 255
Sugar Refineries..... 9
Sun, Eclipse of..... 19, 267
Sun's Heat..... 2, 355
Sun Spots..... 119, 211
Survey, Importance of the 406
Swansea Smelters..... 170
Swimming and Science... 94
Syrup, Strawberry..... 10

T

Table Mountain B. G. Co. 346
Tallow..... 55
Tannin in Beer..... 327
Tanning Skins.....173, 359
Targets..... 216
Taste in Household Matters..... 10
Taxes in Cal.....171
Tea.....55, 218, 247, 343
Telegraph 259, 275, 332, 371
Terra Cotta in Architecture..... 71
*The Olive Tree..... 406
Thought, Scientific and Mechanical..... 403
Thunder Storms..... 391
Tide Watch..... 358
Tide Power..... 210
Tin in Australia..... 299
Tin, Disintegration of..... 19
*Tin Mining in Banca..... 173
Tin, Painting on..... 175
Tin, Price of..... 278, 290
Tinning with zinc..... 243
Tintic M. Dist..... 314
Tools.....151, 215, 391
Tool Handles..... 135
Tools, Sharpening..... 55
Trade Marks [See list of Patents.]
Trade Marks, Masonic Symbols as..... 359
Tramway, Hallidies..... 44
Tramway, Hodgson's..... 44
Transfer Co. in S. F..... 204
Trees, The Big..... 227
*Trichina Spiralis..... 102
Trout, California..... 341
Tubular Harrow..... 198
Tuning Calliope..... 355
Tunnels 182, 233, 236, 250, 281, 284.
Tunnel, Baltimore..... 19
Tunnels in Eureka Dist.... 278
Tunnel, Suttro....280, 281, 284
Tuolumne Co. Mines..... 386
Turtle, Instinct of..... 151
Tweers, Leaky..... 50

U

University of Cal. 56, 65, 180, 233, 290, 297, 300.
Useful and Beautiful..... 375
Utah Items 141, 152, 250, 329, 361.

V

Vaccination..... 87, 119
Varnish..... 7, 71
Vegetables..... 26, 74
Vegetable Physiology..... 51
Ventilation, Importance of..... 143, 215, 299
Ventilation for Mines..... 163
Vienna Exposition 201, 280, 295, 305, 313, 321, 328, 392.
Vinegar, Manufacture of.. 114
Vinegar, Sulphuric Acid in..... 58
Vineyards in the Foothills 218
Virginia Mines..... 396
Virginia & Truckee R. R. 310
Volcano.....346, 371
Volume XXV..... 8

W

Walnut Raising..... 230
Warehouse, Fireproof..... 122
*Washoe Mines 42, 57, 92, 226, 248, 249, 264, 280, 281 286, 309.
Water..... 279
Weights and Measures... 9
Wells, Artesian..... 82
White Pine Mines 66, 82, 98, 114, 174, 264, 294, 339.
Whitening..... 23
Wine Casks in Cal.....73, 131
Wire Rope-ways..... 278
Wood, Australian..... 259
Wood Hangings..... 215
Woods of Pacific Coast.... 38
Wood, to Stain..... 163
Wounds, Remedies for.... 279

Y

Yellow Jacket Fire..... 104
Yellow-tone Expedition 290, 332, 342.
Yerba Buena..... 9
Yuba Co. Mines..... 378

Z

Zodiacal Light..... 175

List of Patents & Trademarks.

Amalgamation, Prepar'g Ores for, A. B. Paul..... 364
Artificial Stone, Manufacture of..... 402
Apparatus for Compacting Granular Sugar into Blocks, A.F. W. Partz.. 402
Axles, Hubs, Mode of Attaching, Peter Bargion.....220, 233, 252
Bed Bug Exterminator, Elizabeth & Cooper, 181, 300
Bedstead Fastening, S. Jones..... 73
Bedstead, Invalid, Benj. Pollard..... 287
Belt Fastener, Samuel Forsythe.....121, 268
Billiard Cushion, J. G. H. Meyer..... 234
Blasting, J. Brodie and S. Wheeler..... 300
*Blue Stone Mixer, Daniel Best.....321, 364
Bottling Apparatus, A. S. Hopkins..... 349
Box Axle. J. S. McClure 268 284
Bracket, Hanging, Henry Polley..... 220
Brake for Machinery, Automatic, T. Stebins..268, 360
Buckle, Harness, W. C. Bussey..... 181
Can for Liquids, A. V. Smith..... 44
*Canal Boat Propulsion, Jos. Pippingdine..... 193
Car Brake, J. O. Gibson.. 268
Carburetter, A. F. H. Braun..... 28
Car Coupling, E. T. Barr and C. Pope.....348, 376
Car Coupling, Taylor & Larkin..... 232
Car Coupling, James Pierson..... 284
*Car Coupling, M. Dienry 305 361
Car, Dumping, (2) J. M. Thompson..... 156
Car, Dumping, J. R. Du Bois..... 372
Cart, Dumping, G. Zeanny 336
Carpet Beater, A. A. Schlesinger..... 252
Churn, (2) M. Pollender 220
Cistern Gate, J. M. Thompson..... 252
Clutch, Friction, T. Stebins..... 284
Coin Envelope, A. Gove 268
Cork-pot, M. Hofman.... 396
Concentrator, M. Hungerford..... 44
*Corset, H. S. Flood.....220, 252
Cover for Jars and Bottles, S. S. Buller..... 60
Cultivator, A. T. Sherwood..... 284
Curtain Fixtures, H. Polley..... 252
Cutter for Soles & Heels of Boots and Shoes, S. G. Browne..... 168
Dimmer for Stovepipe, Pliny Watson & G. W. Dungan..... 168
Derrick, Hydraulic, D. L. Gorman..... 168
Dish Washer, A.W. Tacrnton..... 409
Door Lock, V. Frazee.... 220
Door, Temporary Folding, Wm. M. O'Brien..... 220
Dredging Machine, J. Hallidie.....268, 364
Drill Holds, Device for Charging, F. X. Lavalle 348 376
Drill, Rock, A. J. Severance..... 73
Egg Carrier, G. M. Hueton 376
Elevator and Bucket, Water, J. A. Ball..... 8
Elevator, Hydraulic, J. Parker and J. Cook.... 121
Elevator, Hydraulic, T. Stebins..... 300
*Elevating Mercury in Amalgamating Apparatus, C. H. Hilman...44, 81, 169
Engine, Traction, Oliver Hyde..... 252
Envelope Registered Packages, W. F. McCary 409
Faucet, P. F. Donnelly.. 137
Fence Panel Adjuster, F. M. Ranous..... 44
Filter, M. Cooke and J. W. Wilson..... 332
Filter, Prosper Hnerne.. 121
Fire Arm, John Gordon.. 108
Fruit Box, C. W. Weston (2)..... 201
Furnace, Quicksilver, Knox & Osborne..... 44
Furnace, Roasting, M. P. Boss.....348, 376
*Gimlet Ventiduct, J. F. Peacock 209, 252
Gloves, P. & F. G. Coukling..... 137
Gold Saving Apparatus, J. Bacon..... 121
Gold & Silver Saving Apparatus, J. Oliver..... 348
Governor, H. H. Lamont. 220
Grain Cleaner, J. H. De Force..... 8
Grain Separator, J.B. King & O. Cronkete..... 396
Grape Stemmer, C. Wadhams..... 220
Grape Stemmer, [Oliver Hyde..... 252
Griping Pulley, A. Hidie..... 6
Harness Pad, G. Hanton..... 6
Harrow, A. K. Bol
Harrow Jas. Ha
Horse Collar, Fo ton.....28
Ice Machine, D. Ice Machine, S. 25
*Ink Erasing (2) J. C. De Wolf.....252, 260
Lantern, Em. Latch end Lo ed, V. Frazee. 409
Lock, Nut, Se Lock Nut, J. rick.....16
Lubricator, gan.....att 364
Lubricator, Lubricating, A. P. Grot (2) 332
*Medical Co Haws. D. Medical Gain Mason & O.
Medical Co Hassel, J. W.
Medical Co Brown, John
Medical C Willey, M. B. 44
Medical C Millard, (2) T.
Medicine, McKen Boyce zie... Henry
Mucilage, Gum Mustard, (2) H. C. Hu
Nozzle, Pipe, Hydr. Gorman, Wm. P.
Ore Bam Ores, Fin Kustel
Ore, Hydraulic, J. J. Packie, Sam Waterial, Geo.
Paper Collar, Pavement, Stone Gr. F. Smith
Pavements, Cobbling, Pepplinger, Thos. B. Pho Apparatus for, (Reissue), Calvin Pile Driver, Baldwin
Plow, Revolving, Myers & W. J.
Power, Motive, Engine Impro Power Accumulator, Mathias Roberts, R. Dn
Press, Bang A. H.
*Pump, Double and Vertical, Quick-lock, Savin Potatoes, J. Railroad, Bonsall L.
Railroad, Hermane
Railroad, Expansion Chair,
Railroad Rail
Reamer Close Oil Wells & Callawa and
*Rein Holder, Vilo
Sash Hold Pulley, Satchel, J. Seed Planter, Oliver Hill,
Sewing Ma Hopkins, D.
Sewing Mach Hyde, J.
Sewing Ma McClure, T.
Sewing Mac Hyde, J.
Shackle, Pris quist
Shank for T
Shoe Supplex
Shoe Fasten Saunders
Shoe, Gaiter,
Skate Fastening
Slag Pots, R.
Slag Spouts, R
Sod Cutter, W.
Spark Arrester, nett
Sprinkler, Gard Gibson
Stage Mining Hinckley
Stave Machine, ten
Steam Condense
Steam Engine, W
Stone, Artificial, Ransome
Striping Implem
Sugar, Cube, Sugar, Cube, Manufacture of, Sugar, Hard, ture of, A. F. W.
Sulky, J. A. Bilz
Table, Bagatelle,
Tobacco, Drying,
Tool for Milling Lat
Chas. Rabskopf
Top, N. D. Clark
Power, Mechanical, Stewart
Trap, Animal, Geo. Ba
Trap, Animal, H. J. Bar
Turbine, Wm. P. Geley
Tweer Vestes, (2) R
Fisher
Tubes, Speaking, Will
Pink
Upholstering Material, J.
Valve, Balance Slide, Kessler
Valve, Oils Gin
Vapor, Cutting, E.
Gillmore
Wagon Brake, J. Pavey
Wagon Brake, Oliver
Ware, Stem and Stand
for Fragile, F. A. Will
Washing Machine, J. S.
Ord
Washing Machine, J. O.
Water Elevator, J. A. Ball
Water Wheel, Turbine
Jas. Cummings
Wheelbarrow, C. Nutting & O. Nutting, Jr.....

Wheel Plow, Wm. Mason
Whiskey, (Trademark) E. Chevalier & Co.....
Windmill, W. A. Tustin
Wire Cloth Painter, Graves.....

Incorporations.

Acclade—Cottonwood I Co.....
Albert S M Co.....
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Caroline M Co.....
Carson Hill M Co.....
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Coe G M Co.....
Coleman S M Co.....
Consort Con S M Co.....
Crown Point Con M Co.....
Cummings & M Co.....
Cupel S M Co.....
Deer Creek Con M Co.....
De Mill Con M Co.....
Diamond M Co.....
El Dorado Independence M Co.....
Emma Hill Con M Co.....
Enterprise Co-operative Building Co.....
Esta Buena Con M Co.....
Esther T & M Co.....
Eureka M & S Co.....
First Choice Diamond & Pipe.....
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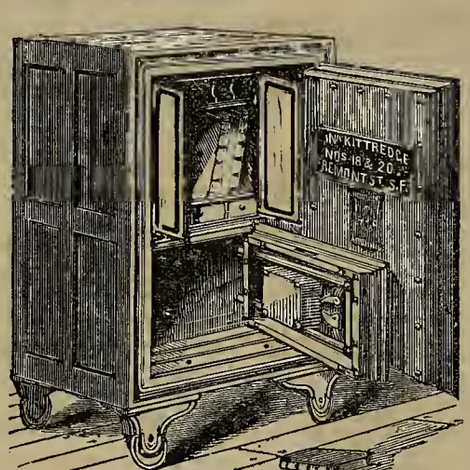

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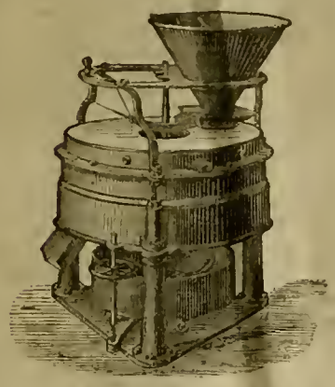

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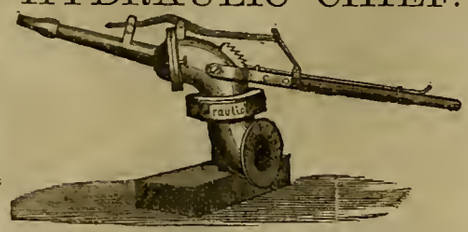

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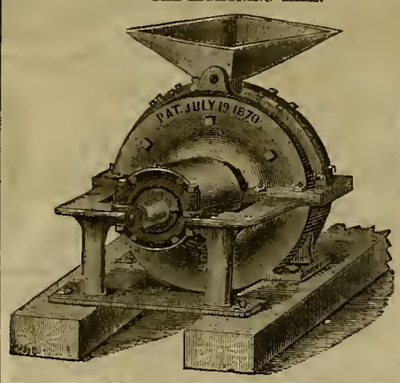

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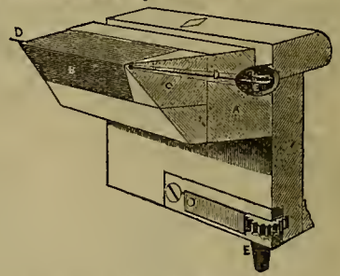

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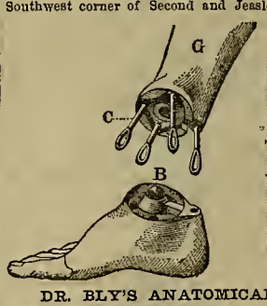

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INDEX
VOLUME XXV
MINING AND Scientific Press.
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A PAGE.

Absinthe 343
Academy of Sciences, 9, 41, 49 81, 120, 152, 180, 232, 278, 289, 332, 364, 393.
Adulteration of Chemicals 182
*Aenasiz 129, 145, 152, 200, 201 262, 265
Air and Health 135
Air, Compressed, as Motor
Alabaman Charcoal Iron 167
Alcohol in Wines 38
Alcohol 247
Alcohol and Exercise 149
Alloys 119
*Alsted Culture 321
Alpine County Mines 140
Alpine Mines & Metallurgist 34
Amest Mine 38
Amador County Mines 34
Amalgam 147
Amalgam Cleaning 305
Amalgamator, A New 93
Amalgator, Eureka 2
*Animal Kingdom, History of 262, 265
Animals, Locomotion of 193
*Anthracite in the Mouth of Antimony 54
*Ants at Home 43
*Ant Lion 393
Anvil Diamonds 7, 193
Aphasia 87
Apothecaries, Duties of 179
Appetite, Instinct of 71
Apples 25
Architecture 33, 137
Arizona Apaches 17
*Army Worms 214
Arsenic 71, 327, 359
Asparagus 31
Assaying in the Field 150
Assay of Quicksilver, 81, 131 238
Assessments, See Mining Laws
Assessment Notices 150
Astronomical Research 83
Asthma 295
Athletes, Caution to 375
Atlantic, The Bottom of the 409
Auroras 19
Australian Forest Trees 9 70, 118
Axle & Hub, Bargion's 233, 252
Axletrees, To Repair 179

B

Backs and Seats 7
Balloons 31
Bathing 23
Barometric Pressure ..211, 364
Beards 391
Beds 23
Bees, Sting of 199, 375
*Bee, The Carpenter 329
Bee Hive, A Monster 310
Belt and Shafting 199
Belts, Rubber vs. Leather 95 327, 355
Beet Sugar 369
Bisulphide of Carbon 275, 374
Blasting Powder, See Giant Powder and 2, 65, 275
Blood as Food 163
Blowpipe Analysis 150
*Blowpipe, Dozier's 321
Blue Travel M. Co 38
*Binestone Mixer, Best's 321
Blushing 263
Boiler Explosions, 163, 175, 241
Boiler Iron 38
Boiler Plates 131
Boiler Sediment 172, 371
Boilers, Steel 323
Boilers, Testing 323
Bonds, Notices ..21, 83, 200, 409
Books, New 409
Borate of Manganese 231
Boring for Science 241
Boston Fire 305, 359, 387
Bread from Wood 119
Breathing 343
*Brick Kiln, Hawley's 105
Bridge, An Immense 67
*Bridge Architecture, Indian 193
Bridging Joists 167
Bruises and Sprains 247
*Brush-making Machine 342
Buildings, Fireproof 373
Building Materials 291, 339, 371, 387.
Bullion Product ..8, 18, 44, 99
*Burnah, Geology of 56
*Burmah, Mines in 56
*Burner, Improved Vapor 401
Butte County Mines ..306, 309

C

Cable, Atlantic 306
Calaveras Co. Mines 377
California 396
*Camp Floyd District, 343, 375
*Canal Boat Propeller 193
*Candlestick, Miners' Safety 290
*Cape Horn 217
Capital Stock, Increase of 57, 124, 137, 275, 288, 362
Capital, Waiting for ..120, 396
Carbollo Acid 3 184, 279
*Car Brake Canfield's 137
*Car Coupler, Disney's 329
Car, Mammoth 4
Car Starter 19
*Car, Thompson's Tunnel 401
Car Wheels, Paper 259, 339
Carbon Mine and Works 346
Cargoes, Storage of 199
Carriages, To Preserve, 151, 375
Carriage, Novel 137
Case Hardening 227
Cave in Crown Point Mine 54
Cederburg Mine 73
Celery as a Nervine 175
Cement, Waterproof, 23, 167, 346
Centennial Exhibition ..... 289, 392.
Ceresine 179
Chains, Stretching of 19
Charcoal Iron 13
Cherry Creek Mines 73
Children, To Raise 311
*Chimneys, Smoky 166
Chloroform 327
Cholilar-Potosi M. Co 346
Christmas 385
Cigar Manufacture in S. F. 40
Clark M. Dist 313
Climate, Changes of, 119, 243 279, 359
Coal and Iron 104, 234, 330
Coal, Economy in Use of 231
Coal in California ..38, 169, 295 348
Coal in England 98, 2 0, 298
Coal Fields of Oregon 370
Coal Market—Discoveries at Santa Rosa 402
Coal Oil Lamps 215
Coast Survey, Work of 266
Cocoa 247
Coffee 84, 247, 250, 327
Colors and Health 119
Colorado Mines, 106, 214, 278, 346
*Combustion 135
Comets 35, 83, 122
Comet, Biela's 122
Comet, Plantamour's 122
Compost, Straw 154
Comprehension, Power of 375
*Comstock Lode (See Washoe Mines.)
Commercial Reporting 290
—*Illustrated.

Conchological Fauna of U. S. 232
Concrete 3, 184
Condor Mill 346
Consumption, To Treat 343
Cold Weather and Warm Blood 407
Cooking 151
Cope District 305
Copper on Pacific Coast 40 121, 253, 322
Copper Process of Motay 90 118
Copper, Price of ..56, 120, 268
Corus, Cure for 279
Corrosion of Gauge Glasses 264, 329
Costa in California 89, 204, 248
*Cotton Pest 89
Counterpoise 35
Crown Point Mine 390
Coy Hill Mines 53
Crystallization 35
Cundurango 247
Cures, Novel 87
Cyclones 355
Cylinders, Cracked 403
Cylinder Head, Wooden .. 326

D

Dentistry 39, 179
Derrick, A Monster 371
Diamonds ..8, 89, 97, 113, 137, 151 162, 290, 374
Diamond, Burning the 83
*Diamond fields, Map of, 153
Diamonds on Pacific Coast 72
Dies, 20, 132, 214, 316, 344, 362 369, 377, 390, 393.
Diamond as Cutting Instrument 339
Diners, How to Give Them 105
Dirt 154
Disease, Modern Idea of 359
Disinfectan's, Value of 375
Ditch Enterprise 87
Dividends & Assessments, See Stock Market and.. 49
*Door Fastener 41
Dream, A Oat's 279
Dredging on Ocean Bars. 243
Drill, Hatchley's 34
*Drilling Machine 17
Drinks in Summer 10, 42
Dripping Pan 151
Dunderberg Mine 154
Dust Explosions in Flour Mills 275
Dust, Prevalence of 31
Dyspepsia 359
Dyspepsia, Cure of 199

E

Ear, The Human 247
Ear, Photography of 227
Earache 247
Earthquakes 103, 232, 371
Eaters, Great 231
Eating, Science of 215
Echoes 119
Education and Health 359
Eggs 10, 26
Electric Waves 115
Electricity 3, 151, 323
Electricity, Firing Mines by 246
Elevator, Martin's 348
Ely District Mines, See Mining Summary and.. 9
Emigrant, The 393, 264, 312, 314
Embalming 23
Emma Mining Suit 72
*Engine, Hoadley's 145
Empire M & M Co 396
Engineering Accidents 147
Engraving by Sunlight 131
Eucalyptus, (See Australian Forest Trees.)
Eureka District Mines, 50, 174 194, 209, 246, 253, 264, 263, 294
Eureka Cons. M. Co 266
Eureka Minc 294
Evaporation 387
Excavator 295
Excavating Under Water 243
Experiments in Fuel 409
Experts, A Jury of 211
Eyes, Injuring 391
Eyes, Influence of Light on 247
Eye, Photography of 227

F

Fat, To grow 179
Fat gue 39
Feet in Winter 343
Felons 151
Fermentation, Theory of 67, 83
Fermented Liquids 247
Fevers and Sewers 7
Fever and Ague 311, 375
Fever, Ague or Intermittent 407
Fever, Sweating in 119
Figs and Bread 42
Filter, Reversible 241
Fire Damp from Anthracite 49
Fish, California 66, 341
Fish, Color in 275
Fish, Do They Think 247
Fish Culture, Lecture by Livingstone, A. M 406
Flannels, Washing 394
Flea Seeds 180
Flies, To Get Rid of 167
Floors, Painting 167
Fly, The African 103
Food 103, 202, 263 295, 343
Food, Preservation of 179
Fossils 332
Foundries, 41, 180, 216, 229, 314, 328.
Freight, Reduction in 264
Friction 23
Fruit Farms 26
Fruit Canning 154, 166, 178
Fruit Juices 167
Fruit Trees, Budding 134
Fruit Tree Pests 180
Fruit, Use of 23
Fuel in Eureka Dist 50
Fuel, Liquid 35, 51, 90, 353
Fuel, Pulverized 140, 232
*Furnace, Bassets 80
Furnace Blast 35, 80, 211
Furnace, Dank's 19, 53
*Furnace, Steven's 353

G

Galvanic Batteries 35
Gas 71, 175
Gastric Juice and Calomel 87
Genesee, Color of 195 375
*Geology of Coast 9, 25
Geological Inquiry 67
Giant Powder 2, 51, 66, 234, 361
Gilman D. C. of University of Cal 289
*Gimlet Ventiduct 209
Ginseng 122
Glass, action of Light on. 356
Glass, Drilling 83
Glass, Soluble, as Detergent 259
Glass Works in S. F 158
Glacial Resources of N. W. California 354
Glanders and Death 330
Mines, Government Aid to 161
Mine, Peculiar Formation in 362
Mines and Railroads 161
Mine Ventilator 163
Mining accidents, 37, 60, 85, 149, 180, 284, 348, 353.
Mining Companys. Management 322, 338
Mining Company's Reports 25
Mining in Central Asia 105
Mining, Co-operative 406
Mining, Deep 396
Mining Discoveries 12, 57, 89, 156, 201, 209, 217, 232, 316.
Mining Engineers, Institute of 321
Mining Incorporation 41, 226 361.
Mining Law 6, 156, 266, 273, 342 361, 362.
Mining Law of New Code ..... 282.
Mining Law of 1872 and Regulations Thereunder 60, 74, 86, 102, 118, 134, 232.
Mining Law, English 118
Mining Machinery 118, 360, 361.
Mining Sales 12
25, 44, 57, 73, 89, 100, 156, 188, 205, 300, 350.
Mining Schools 210
Mining Situation 193, 264
Mining Stock Market, See 5th page, weekly.
Mining Stocks, Assessing 345
Mining Summary, See 4th and 5th pages weekly.
Mining Timbers 214
Mining Tunnels [See Tunnels] 182
Mint, S. F 8, 72, 329
Mirage, Artificial 211
Mississippi River 39
Mixing Paints 279
Monkeys, Intelligence of 131
Montana Mines 114, 154
Moonlight Reflections 327
Morphine, Use of 215
Mortality in Europe 394
Mosquitoes, To Destroy 87, 199
Moths and Furs 58
Motion, Corioisities of 311
Mount Lincoln Silver Mines 370
Mud, Remedial 311
Muscular Expression 231
Mushrooms 14, 230
Music and Notes 19, 227
Mussels 55

N

Napa, Salubrity of 119
Narrow Gauge, 39, 162, 184, 268 278, 289.
*Natural History ..195, 262, 265
Nautical Inventions 307
Needle, Variations of 289
Nervousness, Cure for 279
Nevada County Mines ..... 226 306, 394.
Nevada Soda Company 134
Niagara River 39
Nickel Mines 345
Nickel Plating 227
Noctilucine 259
North Bloomfield Mines .. 374
North Star Consolidated 74
Notes of Travel ..34, 50, 66, 82 98, 114, 130, 146, 147, 174, 226, 248.
Notices to Correspondents 24
*Nozzle for Hose 233

O

Oat Meal 394
Observatory in the Sierras 97, 120, 154
Observations of A Practical Mincr 2, 106, 258
Odors 103
Oil, Cocoanut 7
Oil, Ignition of 39
Oil, Linseed 11
Oil on Pacific Coast 362
Oil Regions, Phenom na 114
Oil Stones 167
Okra 26
Old Age 263, 279
Olive, Growth of 406
Ores, Bidder's for Our 294
Ores, [See Metallurgical Processes.]
Oregon Mines 394
Ostrich Farming 263
Ought Shingle Roofs to be Painted 407
Our Mining Interests, The Vulture of 402
Overland Rive. Freight 6
Oxygen as Stimulant ..199, 211
Oysters 247, 298
Ozone 67, 99, 115

P

Pacific Coast and San Francisco 54
Pacific Mail S. S. Co ..266, 396
Pacific Ocean 51
Paint 23, 119, 179, 375
Paper at Boston Fire 359
Paper Plating for Ships .. 131
Paradoxes 23
Parley's Park Mines 194
Particulars 295
Patents, British 232, 242
Patents, Commissioner's Decisions in 8, 28, 60, 3 2, 364
Patents for Canada 188
Patents in Germany 161
Patents in Japan 371
Patents for Mines 44
Patents, Official Notice About 60
Patents for Pacific Coast Inventors 211
Pavements in S. F 348
Paul's Patents 101, 193
Peas, A Double 230
Pearls in Oysters 87
Peat 210, 290
*Pencil Sharpener 393
Phosphate of Lime 151
Phosphor Bronze 291
Phosphorus in Coal 115
Phosphorescence 391
Photographers' Materials 342
Pin-feeds, Development 279
Pickles 58, 106
Pigmont for Iron 3
Pile Driving, New Method 115
Pimento, Medical Acts 226
Placer Mines 2, 18, 38, 40, 56, 57 104, 216, 346, 374, 378, 386.
Placer County Mines ..234, 330
Planchas de Plata Mines .. 394
Plant Growth, Forcement 369
Plants, Growth of 19
Plants, Odor of 99
Plow, A Large Snow 326
Plow, Steam 293
*Poppy, the California 409
Postal Telegraphy ..179, 218
Pot toes 10, 58
Pottery in California 358
Power, Tide 219
Power, Transmission of .. 195
Practical Men 234
Pre-Historic Remains in Mountain Lands 306
*Primrose, California 6
Pudrdlithe 273
Pulse, Photographing the 227
Pulverizor, Wheipley & Hill, a Great Mania 242
*Pump, Blake's Steam 181
*Pump, Eureka 57
*Pump, Goodwin's ..65, 173, 234
*Pump, People's 299
Pyro-Silver 115

Q

Quicksilver Assay ..81, 131, 268
Quicksilver 8, 278, 338, 354
*Quicksilver Elevator ..81, 361
Quicksilver in Nevada 354
Quinine 39

R

Rabbit Hair 339
Rails, English 18
Rails, Steel 3, 337
Rails, Wear of 371
Railroads on the Coast 328, 358
Railroad Chair, Expansion 335
Railroad Gauge [See Narrow Gauge.]
Railroads in Mexico ..161, 310
Railroads in the Mount'ns 330
*Railroad, Portable 99, 313
Railroads in Peru 57
Railroad Timber 214
Railroad, San Diego 25
Railroad Speed 81
Railroad, Underground .. 311
Railroads in Utah ...246, 389
Raute 3, 10
Red wood, Black Heart 3
*Rein Holder 2, 9, 300
Retrospect, A Mining 408
Rheumatism 231, 359
Rice 119
Richmandgrows, M. Co. 306 335
*Rifle, Remington's 1
Rifle Shooting 21
Roads, Making 391
Robinson M. District 114
Rocks, Contortion of 99
*Roofing 184, 201 23
Rubber 7, 23
Rubber Cement 119
Ruby Cons. Works 194
*Ruby, Stanton's 360, 363

S

Salt 167
San Bernardiuo Co. Mines 353
Sands, Golden 371
Sandstone, Formation of 323
San Juan Country 336
Santa Barbara Mines ..2, 3
*Saw, Footpower Circular 163
Saws, To File 179
*Sawing Machine, Weaver's 121
Sawing Wood Without a Saw 71
*Scale Insects 182
*Schell Creek Mines ..98, 120 161, 264
Science Associations 175
Science, Future of 337
Science, Gratitude of ..274, 376
Science, Schools of 376
Scientific and Mechanical Possibilities 403
Scientific Expedition 393
Scientist, True and Real .. 408
*Scott, Thomas A 121
Screw Principle 147
Sea, Bottom of 254
Sea Serpents 232
Selenite Mortar 307
Sewers 7
Sewing Machine Motor, Hyde's 241
Sewing Machine Motor, Martin's 348
Shad, Hatching 282, 396
Shell, Working in 167
Shingles, Durability of 167
Ship Building on Pacific Coast 374
Ships, Mending Iron 275
Ships, Wooden 271
Signal Service Bureau 53
Silica 339
Silicate of Soda 39
Silicon Steel 24
Silk 23, 119
Silk Worms 115
Silver, Filliform 291
Silver Mines of Peru 16
Silver, Separation from Copper 118
Silver Zone District 18
Size 263
Skin Grafting 87
Sauuk Bite 247
Slate and Marble 258
Sleeping in Arctic Weather 199
Sleep and Dreams 55, 295
Sleep as Stimulant 199, 375
Small Box..7, 34, 55, 71, 87, 278
Smelting ....18, 35, 80, 170, 173 194, 226, 378, 396.
Smelting Ores, Buyers of. 294
Smoke on Steamers, 3, 115, 163
Smoky Chimneys 166
Soap Bubbles 2
Soda in Nevada 134
Solar Corona 358
Soldering Fluids 87
Sounds, Recording 407
Sound in Water 227
Spectacles 179, 327
spectroscope 275
Spectrum Lines 19, 355
Spectrum of Zodiacal Light 3, 131
Spent Balls 391
Stamp Duties 391
Stand's Pat't Extension 168
Stars, Binary 214
Star Depths 19
Star Dirtrict, Utah 98
Stars, Distribution of 131
Stars, The Missing 9
State Fair 168, 201, 236, 252 268, 316
*Steam on Canals 193
Steam and Civilization 242
Steam in Pickle Moods 51
Steam Jet, Siemen's 99
*Steam Plowing 73, 194, 225
Steam Rammers 211, 291
Steel Boilers 24
Steel, Condensing Liquid. 195
Steel Outfry 339
Steel, Making, 19, 24, 275, 320, 387
Steel Rails 295
Sterility and Depletion .. 151
*Stone, Ransome's 178
Stone, Turning 35
Stone, Union Co's 268
Stoves, Putting up 411
Street Railroads, Steam on 225, 259
Sugar, Consumption of .. 298
Sugar Refineries 19, 207
Sun, Eclipse of 211
Sun's Heat 2, 214
Sun Spots 119, 355
Sun Stroke 87
Surgery, Importance of the 40
Swansea Smelters 170
Swimming and Science .. 87, Syrup, Strawberry 10

T

Table Mountain B. O. Co. 346
Tacks 23
Tannin in Beer 279
Tanning Skins 179, 359
Targets 210
Taste in Household Matters 167
Tea in Cal 170
Tea 55, 218, 247, 343
Telegraph 259, 275, 332, 371
Terra Cotta in Architecture 178
The Olive Tree 406
Thought, Scientific and Meahanical 403
Thunder Storms 391
Tidal Watch 214
Tide Power 210
Tin in Australia 29
Tin, Disintegation of 195
*Tin Mining in Banca 179
Tin, Purifying on 275
Tin, Price of 278, 290
Tinning with zinc 243
Tintic M. Dist 322
Tobacco 151, 215, 359
Tool Handles 135
Tools, Sharpening 55
Trade Marks [See list of Patents.]
Trade Marks, Masonic Symbols as 359
Tramway, Hallidies 4
Tramway, Hodgson's 66
Transfer Co. of S. F 299
Trees, The Big 227
*Trichina Spiralis 102
Trout, California 341
Tubular Harrow 104
*Tunip, California 26
Tunnels 182, 243, 256, 280, 281, 284.
Tunnel, Baltimore 19
Tunnels in Sierra Dist 258
Tunnels, Surro 280, 281, 284
Tuolumne Co. Mines 386
Turtle, Instinct of 151
Tweers, Leaky 50

U

University of Cal. 56, 65, 160, 233, 290, 297, 300.
Useful and Beautiful 375
Utah Items 141, 152, 250, 329, 361.

V

Vaccination 87, 119
Varnish 7, 71
Vegetables 26, 74
Vegetable Physiology 51
Ventilation, Importance of 243, 215, 298
Ventilation for Mines .. 163
Vienna Exposition 201, 280, 295, 305, 313, 321, 328, 392.
Vinegar, Manufacture of. 114
Vinegar, Sulphuric Acid in 58
Vineyards in the Foothills 218
Virginia Mines 396
Virginia & Truckee R. R. 310
Volcano 346, 371
Volcanos, Mallet's Theory 392
Volume XXV 8

W

Walnut Raising 230
Washing 122
*Washoe Mines 42, 57, 92, 226, 248, 249, 264, 289, 281 284 286, 390.
Water 279
Weights and Measures ... 21
Wells, Artesian 82
White Pine Mines 66 ..82, 98, 114, 264, 294, 353.
White Sulphur Springs .. 22
Whitewashing 42
Wine Casks in Cal 73, 151
Wire Rope-ways 278
Wood, Australian 259
Wood Hangings 215
Woods of the Pacific 88
Wood, to Stain 163
Wounds, Remedies for 279

Y

Yellow Jacket Fire 104
Yellow-tone Expedition 280, 332, 342.
Yosemite 9

Z

Zodiacal Light 175

List of Patents & Trademarks.

Amalgamation, Prepary Ores for, A. B. Paul 364
Artificial Stone, Manufacture of 409
Apparatus for Compacting Granular Sugar into Blocks, A. F. W. Partz .. 402
Axles to Hubs, Mode of Attaching, Peter Bargion 220, 233, 252
Bed Bug Exterminator, Elizabeth A. Hooper, 181, 300
Bedstead Fastening, S. Jones 73
Bedstead, Invalid, Benj. Pollard 287
Bell & Ritter, Samuel Forsythe 121, 268
Billiard Cushion, J. G. H. Meyer 234
Blasting, J. Brodie and S. A. Wheeler 300
*Blue Stone Mixer, Daniel Best 321, 364
Bottling Apparatus, A. S. Wilson 348
Bottles, Filling, J. Armstrong & Marks 348
Box Axle, J. S. McClure 268 284
Bracket, Hanging, Henry Polley 220
Brake for Machinery, Automatic, T. Stebins ..288, 300
Buckle, Harness, W. C. Bussey 181
Can for Liquids, A. V. Smith 44
*Canal Boat Propulsion, Chas. Bingham ..193, 193
Car Brake, J. C. Gibson .. 268
Carburetter, A. F. H. Braun 28
Car Coupling, E. T. Barlow 348, 376
Car Coupling, Taylor & Larkin 232
Car Coupling, James Pierson 284
*Car Coupling, M. Disney 305 364
Car, Dumpiug, (2) J. M. Thompson 156
Car, Dumping, J. R. Du Bois 342
Cart, Dumping, G Zeanny 336
Carpet Beater, A. A. Hayes 252
Churn, (2) M. P. Callender 220
Chute Gate, J. M. Thompson 252
Clutch, Friction, T. Stebbins 284
Coin Envelope, A. J. Gove 268
Coffee-pot, M. Hofman .. 396
Concentrator, M. Hungerford 44
Corset, H. S. Flood 220, 232
Cover for Jars and Bottles, S. S. Huller 60
Cultivator, A. T. Sherwood 284
Curtain Fixtures, H. Polley 220
Cutter for Soles & Heels of Boots and Shoes, S. S. Brown 168
Damper for Stovepipe, W. W. Wasson & G. W. Dungan 168
Derrick, Hydraulic, D. L. Gorman 268
Dish Washer, A. W. Tacrnton 409
Door Lock, V. Frazee 220
Door, Sliding, Wm. M. O'Brien 220
Dredging Machine, A. J. Gove 263, 364
Drill Holte, Device for Charging, F. X. Lavalle 348 376
Drill, Rock, A. J. Severance 73
Egg Carrier, A. Heaton 376
Elevator and Bucket, Water, J. A. Ball 8
Elevator, Hydraulic, J. Parker and J. Cook 121
Elevator, Hydraulic, T. Stebins 300
*Elevating Mercury in Amalgamating Apparatus, O. Hoffman ..24, 81, 169
Engine, Traction, Oliver Hyde 252
Envelope, Registered Package, W. E. McCrary 409
Faucet, P. F. Donnelly .. 137
Fence Panel Adjuster, F. M. Ranous 44
Filter, M. Cooke and J. W. Watt 332
Filter, Prosper Racine .. 121
Fire Arm, John Gordon .. 108
Fruit Box, C. W. Weston (2) 201
Furnace, Quicksilver, Hyde & Osborne 44
Furnace, Roasting, M. P. Boss 348, 376
*Gimlet Ventiduct, J. F. Miller 209, 252
Gloves, P. & F. G. Conkling 137
Gold Saving Apparatus, J. B. Beers 121
Gold & Silver Saving Apparatus, J. Oliver 348
Governor, H. H. Lamont 220
Grain Cleaner, J. H. De Force 8
Grain Separator, J. B. King & O. Cronkete 396
Grape Stemmer, C. Wadhams 220
Grape Stemmer, (Oliver Hyde 252
Griping Pulley, A. S. Hallide 73, 121
Harness Pad, G. W. Dutton 181, 201
Harrow, A. E. Bohaker .. 396
Harrow Jas. Harris ..104, 201
Horse Collar, P. B. Horton 201, 252
Ice Machine, D. Boyle ... 25
Ice Machine, S. B. Martin & J. M. Beath 121, 25:
Inptement, Compound, E. A. Elwards 114
Ink, Extracting Compound, J. C. De Voy 252
*Lantern, Emil Buesch 32, 260
Latch and Lock, Combination, W. Frazee 220
Lock, Nut, P. A. Bishop .. 405
Lock Nut, J. S. Kirkpatrick 16
Lubricator, J. E. Lonergan 332
Lubricator, W. T. Garratt 364
Lubricating Machinery, A. P. Groes 332
Medical Compound, (2) M. Haws 279
Medical Compound, D. Mayon & E. Champlain 105
Medical Compound, J. C. Ayer 44
Medical Compound, G. W. Brown 168
Medical Compond, John Willey 44
Medical Compound, M. B. Millard 376
Medicine, (Trademark) T. Boyce & F. W. McKenzie 332
Money Drawer, Henry Unna 28
Mustard, (Trademark) H. C. Hudson & Co 332
Nozzle of Hose Pipe, Hydraulic, D. L. Gorman 168
Ore Crusher, Wm. F. Ores, Roasting, G. Kustel and F. W. Smith 284
Packing, Metallic, J. J. Saunders 44
Paper Sizing Material, Geo. Swift 252
Pavement, Artificial Stone 221
Pavement, M. Smith 252
Pavement, Cobble, J. Bolliger 252
Pavement, Cutting Cobblestone, J. Bolliger 252
Pepper Box Cover, H. E. Thomas 28
Photographs, Apparatus for Enameling, (Reissue) Wm. Weston 284
Pile Driver, A. T. Baldwin 121
Plow, Gang, Chas. Kewin 348
Plow, Subsoil C. Myers & W. Cummow 364
Pneumatic Action Engines, W. W. Hanscom .. 232
Power, Apparatus for Multiplying, J. R. Du Bois 220
Press, Printing, A. H. Bangle 121
*Pump, Rotary, S. A West and L. Goodwin ..65, 173, 284
Quicksilver, Amalgamating Saving Apparatus, J. Potts 181, 268
Railroad Tie, John L. Boone 137
Railroad Bed, Boone & Hermann 232
Railroad Rail and Chair, Expansion, Wm. Close .. 44
Railway Frog, Wm. Close 332
Reamer for Rock Drills & Oil Wells, Perrin and Callaway 60
*Rein Holder, E. C. E. Seiz 269, 300
Sash Holder, Henry Polley 168, 332
Satchel, J. H. Hitchings 137
Seed Planter and Drill, Oliver Hyde 252
Sewing Machine, A. D. Hopkins 300, 364
Sewing Machine, W. H. Hanson 121
Sewing Machine, T. McClure 168
Sewing Machine Motor, I. Hyde 241
Sewing Machine, Reed Marker for, J. J. Graff. 122
Shackle, Prison, P. Runquist 220
Shank for Tools, A. H. Staples 376
Shoe Fastening, J. J. Saunders 108
Shoe, Gaiter, A. Baron .. 121
Slate Fastening, J. Hatcher and J. T. Chenoweth 376
Slag Pots, R. A. Fisher .. 181, 284
Slag Spouts, R. A. Fisher 181, 284
Soda Cutter, W. B. Hyde 252
Spark Arrester, W. D. Arnett 6
Sprinkler, Garden, John Stone 12
Stage Machinery, G. W. Hinekley 10
Stave Machine, Otto Osten 28
Steam Generator, W. H. Pitts & Geo. K. Gluyas. 284
Steam Engine, Wm. Davie 10
Stone, Artificial, E. L. Ransome 156
Striping Compound for Painters, D. Lydon and Charles Halsey 364, 371
Sugar, Cube, Apparatus for Making, A. F. W. Partz 284
Sugar, Cube, Manufacture of, A. F. W. Partz. 248
Sugar, Cube or Block, Manufacture of, A. F. W. Partz 348
Sugar, Hard, Manufacture of, A. F. W. Partz. 376
Suit, Diver's 376
Table, Bagatelle, Wm. Evers 181, 220
Tappet for Quartz Mills, Ben McCauley 348
Telegraphic Key, Vertical, A. B. Shearer 220, 364
Tobacco, Drying, J. D. Culp 232
Tool for Milling Lathes, Chas. Rahskopf 376
Top, N. D. Clark 121
Towel, Medicated, Lydia Stewart 268
Trap, Animal, Geo. Barr 348
Trap, Animal, H. J. Badeley 376
Tweer Tester, (2) R. A. Heister 181, 220
Tubes, Speaking, Will & Fink 396
Upholstering Material, R. J. Kellett 252
Valve, Balance Slide, H. Kessler 348, 376
Valve, Otis Adame 156
Veneers, Cutting, E. S. Gilbreth 220, 364
Wagon Brake, J. Pavey and M. Martin 168
Wagon Brake, Oliver Fisk 168
Ware, Stem and Standard for Drinking Vessels, A. Will 220
Washing Machine, J. S. Ord 268
Washing Machine, J. C. Durbin & J. Montgomery 181
Water Elevator, J. A. Ball 8, 181
Water Wheel, Turbine, Jas. Cummings 220
Wheelbarrow, C. Nutting & C. Nutting, Jr 364
Wheel Plow, Wm. Mason 220
Whiskey, (Trademark) F. Chevalier & Co 332
Windmill, W. I. Tustin .. 73
Wire Cloth Painter, S. Graves 8

Incorporations.

Adelaide Cottonwood M Co 172
Albert's M Co 137
Alps East Ex M Co 172
Amador Tunnel Co 87
Anna Dickinson's M Co 181
Anthony M Co 232
Argentine M Co 12
Asphalt Paving Co 396
Aspinwall Gn G & S M Co 252
Bald Mountain G M Co .. 137
Banner Con M Co 196
Bear River Blue G M Co. 172
BigCottonwood F & S M Co 89
Blossom Rock S M Co 2
Bodie Mint M & Co 220
Brooklyn Land Co 44
Brown's Valley Con M Co 3
California College of Physicians 108
California Dessicated Fruit Co 268
California Hide & Leather Co 300
California Iron M Co 364
California Paper Manufacturing Co 108
California M & M Co 396
California Mariposa Co 172
California Tunneling Machine Co 156
Cameron & Co 204
Caroline G Co 252
Carson Con Gn Co 108
Carline M Co 44
Catlin Diamond and Mineral Co 124
Chamberlain Co 196
Charter Oak S M Co 181
Coe G M Co 396
Coleman S M Co 325
Comet Con S M Co 172
Comet Con S M Co 252
Cummings G M Co 300
Cupel S M Co 364
Deer Creek Con M Co 137
Deer Creek Co 172
Pavement, Artificial Stone 221
Diamond S M Co 44
El Dorado Independence M Co 89
Emma Hill Con M Co 44
Empire Mining Co-operative Publishing Co 44
Esta Buena Con M Co 12
Esther T & M Co 44
Eureka M & S Co 12
Eureka Choice Diamond M Co 300
Floral M & M Co 76
Forbe's Hidden Treasure 76
Frazer Lock Manufg Co. 348
Fry Extension M Co 76
Georgetown G M Co 122
Giant S M Co 232
Gold Canon Con M Co 204
Golden Rule S M Co 21
Good Hope & Little Valley Con M Co 172
Grace M Co 172
Grant G & M Co 44
Gray & Bishop M Co 252
Great Western Quicksilver M Co 108
Greenville Co 229
Hay's G & S M Co 181
Heath Manufacturing Co 284
Highland Con M & M Co. 233
Imperishable Pavement Co 268
Independence Con M Co. 156
Independent Omega M Co 348
Ione Copper M Co 204
Ione Reduction Smelting Co 156
Jones' Pulpit G M Co 709
Johnson G & S M Co 300
Josephina Con M Co 21
Kate Cameron G & S M Co 57
Keystone & Boston Con M Co 108
Kit Con M Co 12
La Paz G M & W Co 204
Lone Star M Co 204
Lowell Hill Gravel M Co. 188
Manhattan Gravel M Co. 204
Manhattan Marble Co 204
Marin County Water Co 156
Marks & Darrow M Co 284
Mohile S M Co 252